

The Handbook of **SOLITUDE**

**Psychological Perspectives on Social Isolation,
Social Withdrawal, and Being Alone**

**Edited by Robert J. Coplan
and Julie C. Bowker**

WILEY Blackwell

The Handbook of Solitude

For
Kenneth H. Rubin
scholar, mentor, and friend

and

For
Our Families
without whom we would always feel alone

The Handbook Of Solitude

*Psychological Perspectives on Social Isolation,
Social Withdrawal, and Being Alone*

Edited by

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Contents

List of Contributors	viii
Foreword: On Solitude, Withdrawal, and Social Isolation <i>Kenneth H. Rubin</i>	xii
Part I Theoretical Perspectives	1
1 All Alone: Multiple Perspectives on the Study of Solitude <i>Robert J. Coplan and Julie C. Bowker</i>	3
2 Studying Withdrawal and Isolation in the Peer Group: Historical Advances in Concepts and Measures <i>William M. Bukowski and Marie-Hélène Véronneau</i>	14
3 An Attachment Perspective on Loneliness <i>Mario Mikulincer and Phillip R. Shaver</i>	34
4 Shyness and the Electrical Activity of the Brain: On the Interplay between Theory and Method <i>Louis A. Schmidt and Vladimir Miskovic</i>	51
5 The Origins of Solitude: Psychoanalytic Perspectives <i>Evangelia Galanaki</i>	71
6 Experiences of Solitude: Issues of Assessment, Theory, and Culture <i>James R. Averill and Louise Sundararajan</i>	90
Part II Solitude Across the Lifespan	109
7 The Causes and Consequences of “Playing Alone” in Childhood <i>Robert J. Coplan and Laura Ooi</i>	111
8 Peer Rejection in Childhood: Social Groups, Rejection Sensitivity, and Solitude <i>Drew Nesdale and Melanie J. Zimmer-Gembeck</i>	129

vi *Contents*

9	Affinity for Aloneness in Adolescence and Preference for Solitude in Childhood: Linking Two Research Traditions <i>Luc Goossens</i>	150
10	Social Withdrawal during Adolescence and Emerging Adulthood <i>Julie C. Bowker, Larry J. Nelson, Andrea Markovic, and Stephanie Luster</i>	167
11	Introversion, Solitude, and Subjective Well-Being <i>John M. Zelenski, Karin Sobocko, and Deanna C. Whelan</i>	184
12	Social Approach and Avoidance Motivations <i>Jana Nikitin and Simone Schoch</i>	202
13	Ostracism and Solitude <i>Eric D. Wesselmann, Kipling D. Williams, Dongning Ren, and Andrew H. Hales</i>	224
14	Social Isolation among Older People <i>Elaine Wethington and Karl Pillemer</i>	242
Part III Solitude Across Contexts		261
15	Anxious Solitude at School <i>Heidi Gazelle and Madelynn Druhen Shell</i>	263
16	Loneliness and Belongingness in the College Years <i>Steven R. Asher and Molly Stroud Weeks</i>	283
17	Single in a Society Preoccupied with Couples <i>Bella DePaulo</i>	302
18	Loneliness and Internet Use <i>Yair Amichai-Hamburger and Barry H. Schneider</i>	317
19	Mindfulness Meditation: Seeking Solitude in Community <i>Paul Salmon and Susan Matarese</i>	335
20	The Restorative Qualities of Being Alone with Nature <i>Kalevi Korpela and Henk Staats</i>	351
Part IV Clinical Perspectives		369
21	Social Anhedonia and Solitude <i>Thomas R. Kwapisil, Paul J. Silvia, and Neus Barrantes-Vidal</i>	371
22	Social Anxiety Disorder and Emotional Solitude <i>Lynn E. Alden and Karen W. Auyeung</i>	391
23	Loneliness and Social Isolation in Children with Autism Spectrum Disorders <i>Connie Kasari and Lindsey Sterling</i>	409

24 Solitude and Personality Disorders <i>Kevin B. Meehan, Kenneth N. Levy, Christina M. Temes, and Jonathan J. Detrixhe</i>	427
25 The Intersection of Culture and Solitude: The Hikikomori Phenomenon in Japan <i>Alan R. Teo, Kyle W. Stufflebam, and Takahiro A. Kato</i>	445
Part V Disciplinary Perspectives	461
26 A View from Biology: Playing Alone and with Others: A Lesson from Animals <i>Elisabetta Palagi</i>	463
27 A View from Anthropology: Anomie and Urban Solitude <i>Leo Coleman</i>	483
28 A View from Sociology: The Role of Solitude in Transcending Social Crises – New Possibilities for Existential Sociology <i>Jack Fong</i>	499
29 A View from Computer Science: From Solitude to Ambient Sociability – Redefining the Social and Psychological Aspects of Isolation in Online Games <i>Nicolas Ducheneaut and Nicholas Yee</i>	517
30 A View from Political Theory: Desire, Subjectivity, and Pseudo-Solitude <i>Matthew H. Bowker</i>	539
31 A View from Religious Studies: Solitude and Spirituality <i>John D. Barbour</i>	557
Index	573

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Foreword

On Solitude, Withdrawal, and Social Isolation

Kenneth H. Rubin

As I sit in my office pondering what it is that I should be writing in the Foreword to this extraordinary compendium, I am *alone*. With the door closed, I am protected against possible interruptions and am reminded of the positive features of solitude – there is no one around, it is quiet, and I can concentrate on the duties at hand. Indeed, several contributors to this volume have written about the pleasanties associated with solitude; frankly, I must agree with this perspective, but do so with a number of significant provisos. I will offer a listing of these provisos in the following text. However, before so doing, I would like to suggest a thought experiment or two.

A Science Fiction Thought Experiment

Why must one understand the significance of solitude, withdrawal, and social isolation? Let's begin with a little thought experiment. Imagine, for at least one millisecond, that we have arrived on a planet populated by billions of *people*. Never mind how these people came into existence. Let's just assume that they happen to be on the planet and that we know not how they came to be. Imagine too that there is no interpersonal magnetism ... that these people never come together ... there are no interactions ... there is no crashing together or colliding of these individuals. All we can see are solitary entities walking aimlessly, perhaps occasionally observing each other. In short, we are left with many individuals who produce, collectively, an enormous social void. From an Earthly perspective, we might find the entire enterprise to be rather intriguing or boring or frightening and would likely predict that prospects for the future of this planet are dim.

Given that this is a supposed “thought exercise,” please allow me to humor myself and replace the aforementioned noun “people” with “atoms” or their intrinsic properties of electrons, protons, and neutrons. By so doing, one might have to contemplate such topics as magnetism and collision and the products of these actions. This would immediately give rise to thoughts of mass, electricity,

and excitement. Without magnetism (attraction), electricity, and excitement, whatever would we be left with? As I move more forcefully into this exercise, I find myself in increasingly unfamiliar territory – I may study pretense, but I am not a pretender ... at least insofar as suggesting to anyone willing to listen (or read) that I have “real” knowledge about anything pertaining to physics. In fact, I am ever so happy to leave the study of the Higgs boson to that group of scholars engaged in research at CERN’s Large Hadron Collider.

For the time being, I will escape from any contemplation of physics and swiftly return to thinking about a planet on which *people* appear to exist without laws of attraction. If the “people” who inhabit the planet do not collide, we are left with the inevitability of what solitude would eventually predict – a nothingness, an emptiness, a void. If “people” did not collide, did not interact, there would be no “us.” Relationships would not exist; there would be no human groups, no communities, no cultures. There would be no sense of values, norms, rules, laws. Social hierarchies would not exist; there would be no need to think about mind-reading, perspective-taking, interpersonal problem-solving. Liking, loving, accepting, rejecting, excluding, victimizing ... none of these significant constructs would be relevant. Social comparison, self-appraisal, felt security, loneliness, rejection sensitivity ... topics that tend to appear regularly in the Developmental, Social, Personality, Cognitive, and Clinical Psychology literatures would be irrelevant. From my admittedly limited perspective, as a Developmental Scientist (and thankfully not as a Physicist), there would be nothing to write, think, feel, or be about. Thank goodness for those nuclear researchers at CERN. They have taught us that magnetism matters, that interactions matter, that clusters matter (and may collide to produce new entities). These folks are not pondering what happens with people ... they are thinking at the subatomic level. I, on the other hand, have spent the past 40-some years thinking about people, their individual characteristics, their interactions and collisions with one another, the relationships that are formed on the basis of their interactions, and the groups, communities, and cultures within which these individuals and relationships can be found. Indeed, I have collected more than a fair share of data on these topics. In so doing, I am left with the conclusion that solitude, isolation, and social withdrawal can be ruinous. It ain’t science fiction.

A Second Thought Experience

Let’s move to a rather different thought experience. Imagine that the community within which we live teaches its inhabitants, from early childhood, that normative sociocultural expectations involve helping, sharing, and caring with and for each other; teaching each other about that which defines the “good, bad, and ugly”; communicating with each other about norms and what may happen when one conforms to or violates them. Imagine too, that in such a community within which

interaction, cooperation, and relationships matter, there are some individuals who, *for whatever reason*, do not interact with their confreres. One might suppose that the remaining members of the community could ponder why it is that these solitary individuals behave as they do. And several suggestions may be offered for their solitude.

For example, it may be suggested that some of these noninteracting individuals have some biological or perhaps some genetic orientation that leads them to feel uncomfortable in the presence of others. Perhaps members of the community may have read something about a gene that is associated with diminished 5-HTT transcription and reduced serotonin uptake. Some in the community may have read somewhere that without the regulating effects of serotonin, the amygdala and hypothalamic–pituitary–adrenal (HPA) system can become overactive, leading to the physiological profile of a fearful or anxious individual. Fear may be a guiding force for these solitary individuals – fear of what may happen if they approach others in the community; fear of what may happen if they attempt to develop a nonfamilial relationship with another in the community; fear of leaving a negative impression on those who may judge their actions, thoughts, emotions, and behaviors.

Or perhaps, some might believe that it is not fear that guides the behaviors of some of these solitary individuals. Instead, it might be proposed that some of these noninteracting individuals have a biological orientation that leads them to *prefer* a solitary existence. These individuals may feel more positively inclined when in the company of inanimate objects ... things. At this point, our second thought experience leaves us with the identification of two “types” of solitary individuals: (1) those who are motivated by fear, the prospects of social appraisal, and heightened sensitivity to the possibility of rejection; and (2) those who have a distinct preference for solitude.

Regardless of the epidemiological “causes” of solitary behavior, in a society that has strong beliefs in the importance of cooperation, collaboration, and caregiving, it is likely that the majority of individuals who adhere to the cultural ethos would begin to think unpleasant thoughts about the noninteracting minority. They may think of solitary individuals as displaying unacceptable, discomfiting behavior; they may begin to feel negatively about them; they may discuss among themselves the need to exclude these noninteractors or to alter the behavior of these nonconforming individuals. Indeed, from the extant research, it is known that those who display behaviors considered to be inappropriate or abhorrent to the majority may be *isolated* by the group-at-large. And so now we have a third group of solitary individuals – those who have been isolated by the social group.

But how would these hypothetical community responses affect the nonsocial, nonconforming individual? What kinds of interactive/noninteractive cycles would be generated? And what would the solitary individuals think and feel about the larger community responses to them?

The Point

The preceding verbiage brings me to the singular message that I am attempting to convey. From “all of the above,” I am willing to step out on a limb to suggest, straight-out, that solitude can be punishing, humbling, debilitating, and destructive.

I do admit that it would be foolish to ignore the perspectives of those who have sung the praises of solitude. This would include several authors of chapters in this compendium. It would also include the many beloved and respected authors, poets, painters, philosophers, spiritualists, and scientists who have suggested that their best work or their deepest thoughts derive from those moments when they are able to escape the madding crowd. Here are a few examples:

- 1 *“You do not need to leave your room. Remain sitting at your table and listen. Do not even listen, simply wait, be quiet still and solitary. The world will freely offer itself to you to be unmasked, it has no choice, it will roll in ecstasy at your feet.” Franz Kafka*
- 2 *“How much better is silence; the coffee cup, the table. How much better to sit by myself like the solitary sea-bird that opens its wings on the stake. Let me sit here forever with bare things, this coffee cup, this knife, this fork, things in themselves, myself being myself.” Virginia Woolf*

I could offer hundreds of quotations about the glories of solitude from rather well-known people. Nevertheless, from my perhaps distorted, limited, and ego-centered perspective, I find it difficult to believe that one can lead a productive and happy life locked in a closet, a cave, a tent, a room. Virginia Woolf committed suicide; Kafka had documented psychological difficulties vis-à-vis his inability to develop and maintain positive and supportive relationships with others. One may prefer solitude ... and many of us require solitude for contemplation, exploration, problem-solving, introspection, and the escape of pressures elicited by the social/academic/employment/political communities. As I noted in the opening paragraph, solitude may be an entirely acceptable pursuit. But this statement comes with several provisos.

The “ifs”. If one spends time alone *voluntarily*, and if one can join a social group when one wants to, and if one can regulate one’s emotions (e.g., social fears and anger) effectively, and if one can initiate and maintain positive, supportive relationships with significant others, then the solitary experience can be productive. But the provisos that I have appended to the solitary experience are rather significant. I am quite certain that what the reader will come away with after having completed the chapters included herein is that solitude has many faces. These faces have varied developmental beginnings, concomitants, and courses. And these faces may be interpreted in different ways in different contexts, communities, and cultures. And perhaps most importantly, the provisos offered previously must be kept in mind regardless of context, community, and culture. Frankly, if

one fails to be mindful of these provisos, one can return to the introductory thought experiment and be assured that the failure of individuals to “collide” with one another will result in unpleasant consequences.

People do need to collide, or better put, interact with others. Of course, these interactions must be viewed by both partners as acceptable, positive, and productive. These interactions must be need-fulfilling. Drawing from the wisdom of others who have written of the significance of such interactions (e.g., John Bowlby and Robert Hinde), one might expect that a product of these interactive experiences is the expectation of the nature of future interactions with *the same* partners. Furthermore, from this perspective, one might expect that each partner is likely to develop a set of expectations about the nature of future interactions with *unknown* others. If the interactions experienced are pleasant and productive, then positive dyadic *relationships* may result. If, however, the interactions experienced are unpleasant or agonistic, the partners may avoid each other. And in some cases, if a particular individual comes to expect that all interactions will eventually prove negative, *withdrawal* from the social community may result.

A Final Comment: *Annus horribilis*

During the first six months of 2012, I “lived” in a hospital after having endured a heart transplant and numerous health complications. Although I was surrounded by medical staff and had many regular visitors, I was literally isolated from the “outside world.”

For the first two months of my hospitalization, my mind and body were at the river’s edge. But when the neurons began firing somewhat normally (beginning March 2012), and when I was able to converse with hospital staff and visitors, I nevertheless felt totally alone. It did not help that when visitors (and medical staff) met with me, they were required to wear masks, gloves, and medical gowns of one sort or another.

Eventually, it struck me that I was living at the extreme edge of what I had been studying for most of my professional career. And just as I had found through the use of questionnaires, interviews, rating scales, and observations (with samples of children and adolescents, and their parents, peers, and friends), solitude brought with it intrapersonal feelings of loneliness, sadness, anxiety, helplessness, and hopelessness. I felt disconnected from my personal and professional communities. Despite visitors’ generosity and kindness, I was miserable. Of course, when I was able to read and use my laptop, I could have taken the opportunity to play with ideas and data; my solitude could have been productive. But negative affect (emotion dysregulation) got in the way.

Upon return home, I rehabilitated and received visitors – family, friends, colleagues, students, former golf and hockey “buddies.” I welcomed news about family (I was especially grateful to be reunited with my grandchildren!), friends,

academe, and the world-at-large. I began to catch up on the various projects that my lab was involved in. Within a matter of weeks, I was coauthoring manuscripts and preparing abstracts for submission to various conferences. Although physically weak and incapable of taking lengthy walks or lifting anything heavier than a few pounds, my spirits were greatly improving – I was no longer alone! And finally, by August, when I returned to campus for the first time, I felt reconnected ... and valued!

The bottom line is that my personal solitude, especially given that it was experienced for a lengthy period of time and “enforced” externally and involuntarily, resulted in unpleasant consequences. The good news is that I have come to believe that the data my colleagues and I have collected over the years are actually meaningful beyond the halls of academe! Spending an inordinate time alone; feeling disconnected, rejected, and lonely; being excluded and perhaps victimized by others; being unable to competently converse with and relate to others (which may well result from solitude) can create a life of misery and malcontent; in some cases, this combination of factors may result in attempts at self-harm; in other cases it may result in attempts to harm others. Think for a moment about how often perpetrators of violence (e.g., Columbine, Virginia Tech, Newton High School, and the Boston Marathon bombings) have been described as loners, withdrawn, victimized, isolated, and friendless. Indeed, think about how some of the perpetrators have described themselves.

As I write this last sentence, my mind drifts to the lyricist/songwriting team of Eddie Vedder and Jeff Ament. Their evocative song “Jeremy” is based, in part, on the description of the death of Jeremy Wade Delle, a 15-year-old high school student in Richardson, Texas. Jeremy is portrayed as a quiet, sad adolescent who “spoke in class today” by committing suicide (by gunshot) in the presence of his classmates. The lyrics also suggest that the Jeremy in the song suffered parental abuse and/or neglect. In the music video, Jeremy appears to be rejected, excluded, and isolated by his peers. The words “harmless,” “peers,” and “problem” appear throughout the video. And in interviews about the “meanings” of the lyrics, Vedder has suggested that he was attempting to draw attention to one possible consequence of difficulties that can be produced by familial and peer disruptions. More importantly, he argued that one must gather one’s strength to fight against the seeming inevitability of the negative consequences of isolation, solitude, and rejection. I would suggest that the central message is that family members, peers, school personnel, and community leaders should be aware of the signs that presage intra- and interpersonal desolation.

Of course, not all people described as “solitary” or “isolated” have intra- or interpersonal problems. As noted previously, solitude and social withdrawal are not “necessarily evil.” We all need time alone ... to energize and re-energize, to mull, to produce this-and-that without interruption. But our species is a social species. So much is gained when people interact, collaborate, help, and care for others, develop relationships, and become active members of groups and communities.

However, when combined with dysregulated emotions, social incompetence, and a lack of supportive relationships, solitude, much like many other behavioral constructs studied by psychologists, can induce miserable consequences. The “trick” is to know if, when, and how to intervene within the family, peer group, and community.

In closing, it is with pleasure and pride that two of my former students (and current colleagues and close friends) have done such a wonderful job in putting together this compendium on solitude. After all, I do believe that once upon a time, I may have introduced the constructs of social withdrawal and solitude to Rob Coplan and Julie Bowker! Somehow, I doubt that I instructed or commandeered Rob and Julie to study solitude, isolation, and aloneness. If memory serves me correct, they were each interested in things social. All I happened to do was provide them with a personal, historical (perhaps hysterical) note about how and why I became interested in the research I was doing. Of course, I could never claim to have played a role in the thoughts and research of those who have examined solitude from the perspectives of anthropology, biology, computer science, divinity, neuroscience, political science, primatology, psychoanalysis, sociology, and those tracks of psychology that focus primarily on personality, the environment, autism, and adult relationships. Therein lies the beauty of this compendium. Editors Coplan and Bowker have cleverly taken a twisty turn that curves beyond their own comfort zones of Developmental Science. By so doing, they have left me absolutely delighted. Coplan and Bowker have clearly attempted to move the reader into multiple zones of cognitive disequilibration and to appreciate that if we are to truly understand any given phenomenon, we must look well beyond the silos within which we are typically reinforced to reside. You now hold in your hands a selection of readings that describe a variety of perspectives on solitude. You will read what solitude looks like; why it is that people spend time alone; why it is that solitude can be a necessary experience; how it feels and what one thinks about when one spends a good deal of time avoiding others or being rejected and excluded by one’s social community. There is no compendium quite like the one that you are handling. I applaud the editors’ efforts, and I do hope that the reader does herself/himself justice by closely examining chapters that move well beyond their own self-defined areas of expertise and intrapersonal comfort tunnels.

Part I

Theoretical Perspectives

All Alone

Multiple Perspectives on the Study of Solitude

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Seems I'm not alone in being alone. – Gordon Matthew Sumner (1979)

The experience of solitude is a ubiquitous phenomenon. Historically, solitude has been considered both a boon and a curse, with artists, poets, musicians, and philosophers both lauding and lamenting *being alone*. Over the course of the lifespan, humans experience solitude for many different reasons and subjectively respond to solitude with a wide range of reactions and consequences. Some people may retreat to solitude as a respite from the stresses of life, for quiet contemplation, to foster creative impulses, or to commune with nature. Others may suffer the pain and loneliness of social isolation, withdrawing or being forcefully excluded from social interactions. Indeed, we all have and will experience different types of solitude in our lives.

The complex relationship we have with solitude and its multifaceted nature is reflected in our everyday language and culture. We can be alone in a crowd, alone with nature, or alone with our thoughts. Solitude can be differentially characterized along the full range of a continuum from a form of punishment (e.g., time-outs for children, solitary confinement for prisoners) to a less than ideal context (e.g., no man is an island, one is the loneliest number, misery loves company), all the way to a desirable state (e.g., taking time for oneself, needing your space or alone time). In this *Handbook*, we explore the many different faces of solitude, from perspectives inside and outside of psychology. In this introductory chapter, we consider some emergent *themes* in the historical study of solitude (see Figure 1.1) – and provide an overview of the contents of this volume.

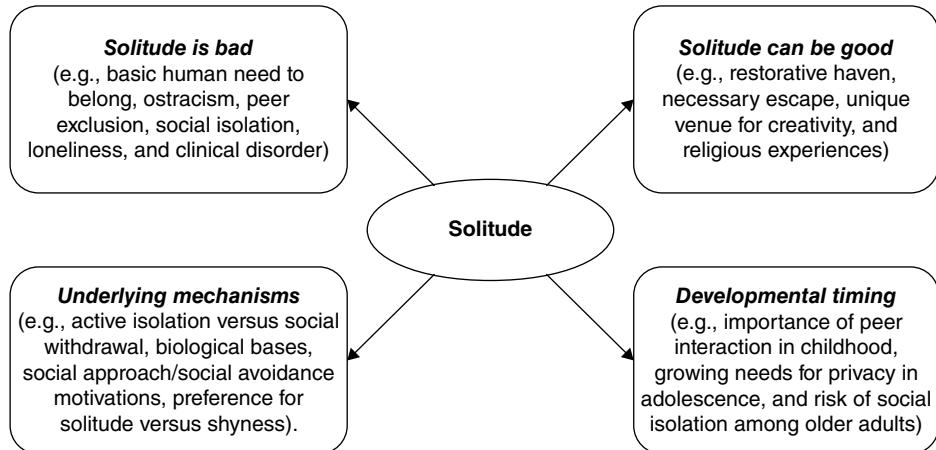


Figure 1.1 Emergent themes in the psychological study of solitude.

Emergent Themes

The study of solitude cuts across virtually all psychology subdisciplines and has been explored from multiple and diverse theoretical perspectives across the lifespan. Accordingly, it is not surprising that there remains competing hypotheses regarding the nature of solitude and its implications for well-being. Indeed, from our view, these fundamentally opposed differential characterizations of solitude represent the most pervasive theme in the historical study of solitude as a psychological construct. In essence, this ongoing debate about the nature of solitude can be distilled down to an analysis of its *costs versus benefits*.

Solitude is bad

Social affiliations are relationships that have long been considered to be adaptive to the survival of the human species (Barash, 1977). Indeed, social groups offer several well-documented evolutionary advantages (e.g., protection against predators, cooperative hunting, and food sharing) (Hamilton, 1964; Trivers, 1971). The notion that solitude may have *negative consequences* has a long history and can literally be traced back to biblical times (Genesis 2:18, And the LORD God said “It is not good for the man to be alone”).

Within the field of psychology, Triplett (1898) demonstrated in one of the earliest psychology experiments that children performed a simple task (pulling back a fishing reel) more slowly when alone than when paired with other children performing the same task. Thus, at the turn of the century, it was clear that certain types of performance were hindered by solitude. Developmental psychologists have also long suggested that excessive solitude during childhood can cause psychological pain and suffering (e.g., Freud, 1930), damage critically important

family relationships (e.g., Bowlby, 1973; Harlow, 1958), impede the development of the self-system (Mead, 1934; Sullivan, 1953), and prevent children from learning from their peers (e.g., Cooley, 1902; Piaget, 1926). The profound psychological impairments caused by extreme cases of social isolation in childhood, in cases such as Victor (Lane, 1976) or Genie (Curtiss, 1977), have emphasized that human contact is a basic necessity of development.

Social psychologists have also long considered the need for affiliation to be a basic human need (Horney, 1945; Shipley & Veroff, 1952). Early social psychology studies on small group dynamics, such as the Robbers Cave experiments (Sherif, Harvey, White, Hood, & Sherif, 1961), further highlighted the ways in which intergroup conflict can emerge and how out-group members can become quickly perceived negatively and in a stereotypical fashion and become mistreated. More recently, the need to belong theory (Baumeister & Leary, 1995) has suggested that we all have a fundamental *need to belong* or be accepted and to maintain positive relationships with others and that the failure to fulfill such needs can lead to significant physical and psychological distress. Relatedly, social neuroscientists now suggest that loneliness and social isolation can be bad not only for our psychological functioning and well-being but also for our physical health (Cacioppo & Patrick, 2008; House, Landis, & Umberson, 1988).

Finally, from the perspective of clinical psychology, social isolation has been traditionally viewed as a target criterion for intervention (Lowenstein & Svendsen, 1938). In the first edition of the *Diagnostic statistical manual of mental disorders* (DSM-I; American Psychiatric Association [APA], 1952), people who failed to relate effectively to others could be classified as suffering from either a *psychotic disorder*, such as schizophrenia; a *psychoneurotic disorder*, such as anxiety; or a *personality disorder*, such as an inadequate personality (characterized by “inadaptability, ineptness, poor judgment, lack of physical and emotional stamina, and social incompatibility”; p. 35). In the DSM-I, schizoid personality disorder is described as another personality disorder characterized by social difficulties, specifically social avoidance. Interestingly, children with schizoid personalities were described in the manual as quiet, shy, and sensitive; adolescents were described as withdrawn, introverted, unsociable, and as *shut-ins*.

Solitude can be good

In stark contrast, and from a very different historical tradition, many theorists and researchers have long called attention to the *benefits* of being alone (Montaigne, 1965; Merton, 1958; Zimmerman, 1805). For example, a central question for ancient Greek and Roman philosophers was the role of the group in society and the extent to which the individual should be a part of and separate from the group in order to achieve wisdom, excellence, and happiness. Later, Montaigne acknowledged the difficulties of attaining solitude but argued that individuals should strive for experiences of solitude to escape pressures, dogma, conventional

ways of thinking and being, vices, and the power of the group. For Montaigne, the fullest experiences of solitude could not be guaranteed by physical separation from others; instead, solitude involved a state of natural personal experience that could be accomplished both alone and in the company of others. Related ideas can be found in religious writings and theology (Hay & Morisey, 1978). For example, Thomas Merton, a Trappist monk who spent many years in solitude, passionately argued in several books and essays that solitude offered unique experiences for contemplation and prayer and that solitary retreats are necessary to achieve authentic connections with others.

Ideas about the benefits of solitude can also be found in the writings of Winnicott (1958). For Winnicott, solitude was an experience of aloneness afforded by a *good-enough* facilitating environment and was a necessary precondition during infancy and childhood for later psychological maturity and self-discovery and self-realization. In adulthood, spending time alone and away from others has also long been argued by philosophers, authors, and poets to be necessary for imaginative, creative, and artistic enterprises (e.g., Thoreau, 1854). In these perspectives, solitary experiences provide benefits when the individual *chooses* to be alone. However, personal stories of several accomplished authors, such as Beatrix Potter and Emily Dickinson, suggest that creativity and artistic talents may also develop in response to long periods of painful social isolation and rejection (Middleton, 1935; Storr, 1988).

Underlying mechanisms of solitude

Although the *costs versus benefits* debate regarding solitude is somewhat all-encompassing, nested within this broader distinction is a theme pertaining to the different mechanisms that may underlie our experiences of solitude. To begin with, it is important to distinguish between instances when solitude is other-imposed versus sought after. Rubin (1982) was one of the first psychologists to describe these different processes as distinguishing between *social isolation*, where the individual is excluded, rejected, or ostracized by their peer group, and *social withdrawal*, where the individual removes themselves from opportunities for social interaction. As we have previously discussed, there are long-studied negative consequences that accompany being socially isolated from one's group of peers. Thus, we turn now to a consideration of varying views regarding *why* individuals might *choose* to withdraw into solitude.

Within the psychological literature, researchers have highlighted several different reasons why individuals may seek out solitude, including a desire for privacy (Pedersen, 1979), the pursuance of religious experiences (Hay & Morisey, 1978), the simple enjoyment of leisure activities (Purcell & Keller, 1989), and seeking solace from or avoiding upsetting situations (Larson, 1990). Biological and neurophysiological processes have also been considered as putative sources of solitary behaviors. For example, the ancient Greeks and Romans argued that biologically based individual differences in character help to determine mood

(such as fear and anxiety) and social behavioral patterns (such as the tendency to be sociable or not), ideas which were precursors to the contemporary study of child temperament (Kagan & Fox, 2006). As well, recent interest in the specific neural systems that may be involved in social behaviors can be traced to the late 1800s with the case of Phineas Gage, who injured his orbitofrontal cortex in a railroad construction accident and afterwards was reported to no longer adhere to social norms or to be able to sustain positive relationships (Macmillan, 2000).

Finally, there is also a notable history of research pertaining to *motivations* for social contact (e.g., Murphy, 1954; Murray, 1938), which has been construed as a primary substrate of human personality (Eysenck, 1947). An important distinction was made between social approach and social avoidance motivations (Lewinsky, 1941; Mehrabian & Ksionzky, 1970). It has since been argued that individual differences in these social motivations further discriminate different reasons why individuals might withdraw from social interactions. For example, a low social approach motivation, or solitropic orientation, is construed as a non-fearful preference for solitude in adults (Burger, 1995; Cheek & Buss, 1981; Leary, Herbst, & McCrary, 2001) and children (Asendorpf, 1990; Coplan, Rubin, Fox, Calkins, & Stewart, 1994). In contrast, the conflict between competing social approach and social avoidance motivations (i.e., approach–avoidance conflict) is thought to lead to shyness and social anxiety (Cheek & Melchior, 1990; Jones, Briggs, & Smith, 1986).

Developmental timing effects of solitude

Our final theme has to do with *developmental timing* or when (or at what age / developmental period) experiences of solitude occur. The *costs* of solitude are often assumed to be greater during childhood than in adolescence or adulthood – given the now widely held notion that the young developing child requires a significant amount of positive peer interaction for healthy social, emotional, and social-cognitive development and well-being (Rubin, Bukowski, & Parker, 2006). This pervasive belief may explain, in part, why considerably more developmental research on the concomitants of social withdrawal has focused on children as compared to adolescents. In addition, it is during adolescence that increasing needs for and enjoyment of privacy and solitude are thought to emerge (Larson, 1990). For this reason, it has been posited that some of the negative peer consequences often associated with social withdrawal during childhood, such as peer rejection and peer victimization, may diminish during the adolescent developmental period (Bowker, Rubin, & Coplan, 2012).

However, it has also long been argued that solitude at any age can foster loneliness and psychological angst, particularly if it is *other-imposed*. As mentioned previously, social needs are thought to exist in individuals of all ages, with several social and developmental theories suggesting that psychological well-being is determined by whether social needs are satisfied. For example, Sullivan (1953) posited that all individuals have social needs but that with development, the nature

of the social needs change (e.g., with puberty, needs for sexual relations emerge), as well as the type of relationship required to fulfill the needs (e.g., relationships with parents might satisfy early needs for tenderness; same-sex chumships or best friendships might satisfy needs for intimacy that emerge in early adolescence). Regardless of the developmental changes, however, Sullivan argued that if social needs were not fulfilled, significant negative self-system and psychological consequences would ensue. Consistent with these latter ideas are research findings that have identified loneliness, at any age, as one of the strongest risk factors for psychological ill-being (Heinrich & Gullone, 2006).

The debate as to *when* in development solitude might carry the greatest costs is yet to be resolved. However, it must also be acknowledged that the very nature of solitary experiences likely changes with age. For example, young children may retreat to their rooms, engage in solitary play in the company of peers, or find themselves forced to the periphery of social groups. Although *other-imposed solitude* might be manifested similarly at older ages (e.g., adolescents being forced to eat alone at lunchtime, adults being left out of after-work gatherings), adolescents and adults have greater control over and increased opportunities for self-selected solitary experiences relative to children. For example, adolescents are sometimes left alone without parental supervision in their homes or able to take themselves to places of their choosing. Adults can also choose to travel alone, can engage in meditative and religious retreats, and can select relatively solitary occupations and ways to spend their free time. In contrast, there may come a time in the life of an older adult where they are significantly impeded in their ability to actively seek out social contacts. It remains to be seen how these potential differences in *agency* pertaining to solitude across the lifespan speak to the relation between solitude and well-being.

Overview of This Handbook

The chapters in this Handbook provide the reader with the first comprehensive compilation of psychological research related to the construct of solitude. The construct of solitude is examined from multiple psychological perspectives, during different developmental periods across the lifespan and across a broad range of contexts. Moreover, in an effort to further broaden the scope of our explorations, the final set of chapters incorporate disciplinary perspectives from *outside* of psychology.

The first section of this volume includes chapters pertaining to historical, theoretical, and methodological approaches to the study of solitude. Bukowski and Verroneau (Chapter 2) provide a rich historical overview of the conceptualization and measurement of social withdrawal and social isolation in childhood, with a particular focus on the role of peers. From a very different perspective, Mikulincer and Shaver (Chapter 3) describe the contribution of attachment theory to our understanding of loneliness in the face of solitude. These two chapters explicitly

acknowledge the unique and critical role of both *family* and *peers* in how individuals come to experience and respond to solitude. In their chapter, Schmidt and Miskovic (Chapter 4) consider the contributions of *biology*, delineating brain-based neurophysiological factors that appear to underlie the manifestation of shyness in children and adults.

There is no denying the substantive and long-term influence of Freud's psychoanalytic theory in the emergence of psychology as a science. In her chapter, Galanaki (Chapter 5) provides a comprehensive historical analysis of the phenomenon of solitude from a psychoanalytic perspective. Finally, in a notable counterpoint to several of the chapters in this section, Averill and Sundararajan (Chapter 6) espouse the more positive aspects of the experience of solitude while also embedding their consideration of solitude within a broader cultural perspective.

The second section of the book is organized to present the study of solitude in different developmental stages across the lifespan. However, equally represented here is heterogeneous nature of solitude, with various different conceptualizations, types, and psychological processes related to solitude represented. The first four chapters span the years from early childhood to young adulthood. Coplan and Ooi (Chapter 7) characterize different types of solitary play behaviors in early childhood, discussing their differential meanings and implications. Nesdale and Zimmer-Gembeck (Chapter 8) review the substantive and pervasive negative consequences of being rejected by peers (i.e., imposed solitude) in children's development. In his chapter, Goosens (Chapter 9) provides detailed exploration of the notion that some children do not *mind* being by themselves, linking the constructs of preference for solitude in childhood with an affinity for aloneness in adolescence. Bowker, Nelson, Markovic, and Luster (Chapter 10) extend this discussion from adolescence into emerging adulthood, conceptualizing different types of social withdrawal and their differential implications among adolescents and young adults.

The next three chapters explore personal and interpersonal processes in the experience of solitude in adults. Zelenski, Sobocko, and Whelan (Chapter 11) focus specifically on the Big Five personality dimension of introversion and discuss its (potentially complex) association with the experience of solitude and our subjective well-being. In their chapter, Nikitin and Schoch (Chapter 12) provide a rich synthesis of how social approach and social avoidance motivations underlie our interpretation of and reaction to social situations. As well, as a parallel to the earlier chapter on social exclusion in childhood, Wesselmann, Ren, and Hales (Chapter 13) discuss the profound negative implications of social ostracism for our species. In the final chapter in this section, Wethington and Pillemer (Chapter 14) outline the difficulties associated with social isolation among the elderly.

The third section explores how solitude can be differentially expressed and experienced across different contexts. In the first chapter in this section, Gazelle and Druhen Shell (Chapter 15) describe the experiences that anxious–solitary children and adolescents have at school with their peers and teachers, and across

school transitions, and how such experiences impact their behavior and psychosocial adjustment. With a focus on the college years, Asher and Stroud Weeks (Chapter 16) review the history of research on loneliness and belongingness and suggest that the two constructs are related but distinct dimensions of psychological experience. In the next chapter, DePaulo (Chapter 17) presents research debunking the myth that single people are lonely and unhappy and discusses recent changes in attitudes toward singles in the United States.

In their chapter, Amichai-Hamburger and Schneider (Chapter 18) consider solitude in the virtual world, with a focus on when and for whom Internet usage can lead to loneliness. This section concludes with two chapters that describe contexts in which solitary experiences can be restorative. Salmon and Matarese (Chapter 19) argue that solitude can have the greatest benefits when it occurs in the company of supportive others, as exemplified by mindfulness-based stress reduction programs. Finally, Korpela and Staats (Chapter 20) detail the ways in which being alone in nature can offer important opportunities for privacy, relaxation, and restoration.

The fourth section considers solitude from the perspective of clinical psychology. Here the focus is on solitude as it pertains to mental health. For example, Kwapil, Silvia, and Barrantes-Vidal (Chapter 21) examine the construct of social anhedonia (a trait-like disinterest in – and diminished pleasure derived from – social contact) and its link to the schizophrenia spectrum. In their chapter, Alder and Auyeung (Chapter 22) describe the *emotional solitude* that often accompanies social anxiety disorder. Kasari and Sterling (Chapter 23) focus on the social isolation and loneliness that may (or may not) be experienced by children with autism spectrum disorder. Meehan, Levy, Temes, and Detrixhe (Chapter 24) provide an in-depth discussion of how solitude is experienced and expressed by individuals suffering from personality disorders. In the final chapter of this section, Teo, Stufflebam, and Kato (Chapter 25) describe the phenomenon of hikikomori in Japan, a relatively recently studied extreme form of social withdrawal where individuals retreat into solitude in their residence for extended periods of time.

The final section of the book includes chapters pertaining to the study of solitude from disciplines *outside* of psychology. From a *biological* perspective, Palagi (Chapter 26) discusses the importance of solitary play for the individual development of nonhuman animals, citing examples from geladas, a species of Old World monkeys, and bonobos, our closest living nonhuman primate relative. From an *anthropological* perspective, Coleman (Chapter 27) describes historical views of solitude in urban environments and anomie (chaotic and poorly organized social relations often attributed to modernity and globalization) as well as contemporary experiences of solitude and personal isolation. In his chapter written from an existential *sociological* perspective, Fong (Chapter 28) examines how individuals employ solitude to confront social conditions that compel them to make sense of their place in society (such as experiences of imprisonments).

From the perspective of *computer science*, Ducheneaut and Yee (Chapter 29) explore recent theory and research on multiplayer online games, distinguishing

solitude from ambient sociability, a form of social interaction that may not create direct bonds but can still satisfy needs to feel connected to others. In his chapter from the perspective of *political science*, Bowker (Chapter 30) uses texts from a variety of fields to elucidate a psycho-political dilemma in which the ambivalences and perceived dangers of solitude encourage the self and the community to collude in thwarting genuinely solitary experience. In the final chapter from the perspective of religious studies, Barbour (Chapter 31) traces the history of attitudes toward solitude from different religious traditions, concluding with a discussion of the spiritual meanings of solitude for individuals who do not consider themselves as members of any organized religious community.

Final Comments: Solitude...Together?

It is somewhat ironic that the future study of solitude will likely be pursued within the context of an ever-expanding and increasingly connected global social community. The chapter authors in this *Handbook* span 13 countries and represent only the very *tip of the iceberg* in terms of cross-cultural research in this area. There is growing evidence to suggest that both the meaning and impact of (different types of) solitude differ substantively across cultures (e.g., Chen & French, 2008). Accordingly, it is critically important to embed this psychological research within a larger cultural context.

Moreover, as evidenced by the chapters in the final section of this volume, psychologists have much to learn about the study of solitude from our colleagues in other disciplines. Indeed, we should expect interdisciplinary collaboration to eventually become the norm in these (and other) research areas. Such collaborations will allow us to further explore both the depth and breadth of our experiences of solitude and perhaps help to resolve some of the great *debates* in theory and research on solitude, such as when and why solitude causes harm or brings benefits.

Finally, rapidly evolving technological advances intend to connect all of us – all of the time – to social and informational networks. This inevitably leads to the question as to whether any of us will ever truly be *alone* in the future. It is certain that our relationship with solitude will necessarily evolve in the digital age. In this regard, it remains to be seen if the experience of solitude is itself doomed to become an archaic remnant of a past era.

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Studying Withdrawal and Isolation in the Peer Group

Historical Advances in Concepts and Measures

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It is a truism that researchers who study social behavior need to deal with multiple conceptual and practical challenges. Interrelated questions about what a particular behavior consists of, what it is related to, how it functions, how it should be measured, and what it means need to be considered so that fully reasoned hypotheses about the behavior can be formed and examined. Added to these considerations are the additional challenges raised by contextual variations related to cultural and historical circumstances. A basic question about any social behavior concerns the extent to which it is natural and universal and how much it is a product of the social circumstances where it developed and/or occurs. For example, some broadband forms of social behavior (e.g., aggression) are likely to have a more consistent meaning and significance across contexts due to their rootedness in processes and motivation linked to our ethological heritage. In contrast, the meaning and significance of other social behaviors are likely to vary as a function of prevailing cultural ideologies about the intersection between the individual and the social context. One broad form of social behavior that has been studied in different ways during the past 60 years is withdrawal or isolation. Social withdrawal can be broadly defined as the process whereby a child removes himself/herself from opportunities for social interaction, whereas social isolation describes the child being actively excluded by peers from participating in social activities (Rubin, Coplan, & Bowker, 2009).

In this chapter, we use a short-term historical perspective to examine the routes by which social withdrawal became part of the study of peer relations. The concepts used to study development have their own developmental histories. It is not just that children develop in particular places at particular times; it is also that the concepts

and ideas we use are themselves embedded within historical, intellectual, or cultural moments that define what particular phenomena are, what they do, and how and why they function in particular ways (Appadurai, 1988; Bronfenbrenner, 1979; Bukowski & Lisboa, 2007; Cairns, 1983a). Social withdrawal or isolation is one of these concepts studied by developmental psychologists that has evolved within and as a function of many contextual factors. In this chapter we will discuss how context has mattered for our understanding of what withdrawal (i.e., isolation from the peer group) consists of and how it affects healthy social development.

The basic premise of the chapter can be stated succinctly. Insofar as the construct of social withdrawal lies at the intersection between the person and the group, it needs to be understood according to a broad set of factors related to both of these social constructs. As social constructs, ideas about what it means to be an individual and ideas about the significance and meaning of the group are likely to vary as a function of multiple contextual factors, especially culture and history. A secondary premise of this chapter is a bit more complicated. It is concerned with two assertions. The first is that theories about what human development is, how it happens, and what it consists of cannot be separated from prevailing intellectual zeitgeists about what individuals are and how they should be studied. Ideas and concepts arise and evolve in conjunction with other concepts implicated in overriding theories about the features and processes that comprise human nature. Accordingly an understanding of how a concept has evolved in a particular literature needs to recognize the broader intellectual or historical climate in which it developed.

The second idea is that research on any topic is constrained by the capabilities of available research tools. How something can be studied and the questions one can ask about it depend on the existing research methods and statistical techniques. The creation of better techniques allows researchers to address questions of increasing complexity and with greater specificity and to produce more nuanced and precise findings. Together these premises support the claim that because withdrawal is a social construct and because research on withdrawal happens within a particular historical or technical context, research on withdrawal cannot be separated from the circumstances in which it occurs. It is important to recognize that this historical variability is neither a strength nor a weakness of this construct. It does not mean that withdrawal is an amorphous or capricious construct that lacks a true form or significance for development. Instead it shows that contextual variability is a basic feature of a complex textured reality that affects how children develop and how researchers study development. Understanding variability makes our task more difficult and also makes it more interesting.

Accordingly, we will discuss how social developmentalists (particularly peer researchers) have studied social withdrawal especially with respect to changes during the second half of the twentieth century. Emphasis in this discussion will be placed on the evolution of measurement techniques and conceptualization. Within this discussion we will place withdrawal within a larger intellectual/historical context. Throughout this discussion we hope to raise some questions about how social withdrawal should be studied in the future.

Social Withdrawal and Isolation Have Always Been with Us

The 1940s and 1950s

A key question regarding research on a social construct such as withdrawal concerns when it became a topic for empirical study. Identifying how and when a construct entered a research literature is not an easy task. They are especially challenging when the construct and the research domain are themselves labile. At best one can try to discover when references to withdrawal or to related concepts began to appear in major review chapters of peer relations research and in the methods used to study peer experiences. The strategy of going on a *walkabout* through archival chapters is not without its limitations as one can never fully grasp what it was like to be *in the moment* when they were written and one cannot fully comprehend whom the authors presumed to be their audience. Nevertheless a close reading of these chapters can provide at least one bird's-eye view of what was being studied and thought about during an earlier time.

Two of the earliest large review chapters on peer relations can be found in the first two editions of *Carmichael's manual* (Carmichael, 1946, 1954). These chapters were written by Kurt Lewin (1946, 1954) and by Anderson and Anderson (1954). Lewin's chapter, titled "Behavior and development as a function of the total situation," appeared in exact copy in both editions (Lewin died in 1947). The Andersons' chapter, titled "Social development," appeared in the second edition (1954). Each of these chapters covers a very broad range of topics related to social behavior and functioning in groups including the peer group.

Neither chapter includes anything that could be construed as a direct reference to isolation or social withdrawal. Nevertheless, each includes discussions of related concepts that provide a glimpse of how withdrawal was regarded at this time and the social dynamics to which it was associated. The closest that Lewin gets to withdrawal in his chapter can be seen in his discussion of the concept of group belonging and its relations to the life space. For Lewin the life space consisted of all the social domains or fields where a person functioned. They could be the family home, the classroom, or the neighborhood playground. An essential component to Lewin's model of social development was the idea that the particular fields that make up the life space increase in number and become more differentiated with age. He proposed that during early adolescence most girls and boys would find themselves in more places than they had been in during childhood (e.g., friends' homes, local community center) and that these new contexts might be very different from the environment of the family home. Lewin was careful to point out, however, that there were individual differences in how quickly children would become engaged in this age-related process. He noted that there can be large variability in "the speed with which the life space increased in scope and ... differentiation during development." In other words, he realized that some children and adolescents became more broadly *situated* in a range of fields more quickly than others.

Inherent in this view is the claim that some children and adolescents became involved in multiple different life spaces, while others remained *outsiders* to them, isolated (our word, not his) in a smaller set of fields. Lewin saw this as a question of social belonging. He argued that social goals consisted of wishes to belong or not to belong to particular social groups. Some children simply lacked the goal to be part of new and different fields. Lewin did not see this reticence positively. He noted that there were negative consequences of having an outsider status. He claimed that being outside a group would affect one's rights and duties vis-à-vis the group and would limit the, presumably positive, effects of the group on the person.

It is important to recognize that Lewin saw outsider status as a by-product of group process or of the person/group interface. He believed that it could be understood largely, if not wholly, as a function of group dynamics. He did not see it as a property of the person or as the result of how an individual child behaved. For Lewin, being an outsider was merely the result of how a particular group functioned.

Lewin's approach to concepts such as belonging and outsider status was highly abstracted and theoretical. He devoted little, if any, attention to practical or methodological questions about the processes by which these phenomena would be measured. His chapter did present some sociograms that illustrated variations in group structures. Lewin included these diagrams of group structure alongside his very restrained and tepid description of the advantages of the sociometric methods developed by Bogardus (1933), Moreno (1934), and Lippitt (1940). These sociograms showed that some children had few connections to the other children in the group. Lewin stated that only "under some circumstances" (1946, p. 802) could they index group belongingness.

Lewin may have been wrong to be so hesitant in his enthusiasm for the sociometric approach. The ideas, constructs, and techniques proposed by Moreno and his followers provided a means of clarifying and articulating the broad constructs which interested him such as social belongingness. Lewin's lack of enthusiasm could have been due to an apparent difference in emphasis between him and that of Moreno and others interested in sociometry. Whereas Lewin was relatively more interested in the group per se and in group dynamics, the sociometric approach was relatively more interested in individuals and their places within group. Moreover, Moreno's techniques had not been fully developed, and they were not specifically intended to directly assess the group as a whole. At least to some extent, sociometric methods were intended to measure the degree to which a person was connected to other group members on the basis of attraction. The sociometric approach could identify an outsider but they were not especially interested in the group dynamics that led to outsider status. Although one can understand Lewin's somewhat dismissive stance, if he had been more generously open minded, he would have seen the value of the sociometric approach as a means of measuring basic indices of belongingness and outsider status.

As with the work of other theorists, it is useful to consider the context in which Lewin developed his ideas about the role of the group in social development and

in which the earliest ideas about sociometry emerged. The prewar period of the late 1930s and the period during and just after World War II were moments of deep reflection about the power of groups and of the apparent frailty of individuals. Overlooking the destructive forces of fascist social movements was not an option. Beyond recognizing the tyrannical effects of strong social movements, there was at this same time an increased awareness of the apparent malleability of social development that can result from cultural (Mead, 1937) or socioeconomic circumstances (Dollard, 1937). Another vantage point provides another perspective on why the group received attention at this time. It is not hard to imagine that this heavy emphasis on the group is at least in part intended as counterweight to the excessive emphasis on the individual in other major theories of development (e.g., psychoanalysis – see Galanaki, Chapter 5, this volume) that were popular at the time.

The chapter on *Social development* by Anderson and Anderson that appeared in the second edition of the *Manual* (1954) was more explicit in its emphasis on the individual and in its concern with individual differences in patterns of social development. They argued that social development is motivated by two goals, specifically integration (i.e., being engaged with others) and differentiation (i.e., autonomy or individuation). Central to their thinking is the distinction between *moving toward others* and *moving against others*. Whereas the former promotes integration at the level of the person and organization at the level of the group, the latter impedes both of these conditions. Although the Andersons saw aggression and conflict as the opposites of socially integrative behavior, they recognized that avoidant behavior was also antithetical to the tendency to move toward others. They did not go so far as to refer to moving away from others as a separate dimension of behavior. Instead they saw it as a submissive or non-integrative response to power imbalances that was associated with the low end of the features that would define socially successful children (i.e., “lower spontaneity, lower social communication, lower understanding, lower productivity, lower interacting” p. 1203). In spite of their reluctance to treat withdrawal and isolation as a broadband dimension of individual difference in social behavior, an implicit point of their chapter is that some children are more likely than others to withdraw from or to avoid their peers. This view was not yet an explicit concept in research on social development, but it would soon appear in at least two other research paradigms.

So, by the beginning of the 1950s, there was at best an implicit view that withdrawal and isolation were less than ideal modes of social behavior during childhood. Although explicit references to withdrawn or isolated children appear to be rare in major summaries of research on social development, there was the implied point that being apart from others, that is, lacking in social belonging or being restricted to a narrow range of social contexts, was not a sign of healthy development. However, attention to person-focused empirical techniques to identify socially withdrawn or isolated children was not apparent in mainstream chapters.

The 1950s and 1960s

These conditions changed during the 1950s. Three advances that occurred just before 1960 ascribed increased status to the concepts of withdrawal and isolation as important for social development. One advance appears to be primarily methodological but it made an important conceptual point that has become an enduring cornerstone of peer research that is still with us today. This advance was in the area of peer assessment procedures (see Bukowski, Cillessen, & Velasquez, 2012). Techniques which collected information from peers about individual children had been in use since the 1920s. Initially they had been used to study specific outcomes such as self-control or moral behavior (e.g., Hartshorne & May, 1928; Hartshorne, May, & Maller, 1929). Mitchell (1956) recognized that peer assessment techniques could be used to measure the functioning of individual children across basic dimensions of social behavior. In contrast to prior peer assessment approaches that were focused on particular narrowband constructs, Mitchell used a heterogeneous set of 19 items representing multiple forms of social behavior. He used a paper-and-pencil questionnaire in which children were asked to indicate which of their peers fit the particular items in his list. Using their selections Mitchell assigned a score on each item to each child according to how many times the child had been nominated for it. A factor analysis revealed three large factors representing the basic dimensions of *moving toward others*, *moving against others*, and *moving away from others*. Mitchell called these factors as *social acceptability* (example item: "Who are the boys and girls who make good plans?"), *aggressive maladjustment* ("Who are the ones who break rules, rules of the school, and rules of games?"), and *social isolation* ("Who are the boys and girls who stay out of a game? They don't like to play hard."). Mitchell's findings are important as the first empirical demonstration of withdrawal as a basic dimension of social functioning with peers that was not the mere opposite of sociability. This three-factor structure serves as the basic organization scheme for the better-known peer assessment techniques that came after it (e.g., Bower's (1957) *Class play*, the *Peer nomination inventory* (Wiggins & Winder, 1961; Winder & Wiggins, 1964), the *Pupil evaluation inventory* (Pekarik, Prinz, Liebert, Weintraub, & Neale, 1976), and the *Revised class play* (Masten, Morrison, & Pellegrini, 1985)). To our knowledge, Mitchell's technique was the first procedure that identified and assessed withdrawal as a basic aspect of functioning among peers.

Mitchell's discovery of withdrawal as a basic characteristic of peer-related social behavior was facilitated by two other advances. One was an explicit theme of the chapters by Lewin and the Andersons, specifically that research on social development needed to recognize the *whole child*. Mitchell was especially influenced by Eysenck's (1953) quest to identify the basic dimensions that comprised the human personality. Mitchell chose to pursue this goal through an analysis of children's functioning with peers. This pursuit was possible due to a second advance, specifically the development of factor analytic techniques

(e.g., Thurstone, 1947) to empirically assess the structure of a data set. The technical/statistical advances in factor analysis allowed Mitchell to show that withdrawal was a basic dimension of social behavior within the peer group that varied across individuals in a trait-like manner.

Both of these conditions can be seen as manifestations of the modernist concerns that followed World War II, specifically that there is rich multidimensional complexity to human functioning that cannot be observed directly but whose existence needs to be recognized (Howe, 1967). They are also consistent with the modernist view that overriding utopian models about human nature (e.g., fascism and communism) are to be gravely distrusted and should be replaced by observational approaches to understanding human functioning. Mitchell was not interested in assessing narrow aspects of children's social behavior even if these features were key components of a particular theory. Instead he wanted to take a comprehensive view of the latent factors that define children's social behavior. When he took this view, he saw evidence of withdrawal as a basic dimension of social behavior during childhood.

A second advance occurred at nearly the same time but in a very different research domain, specifically in nascent research on temperament. In their earliest papers on temperament, Chess, Thomas, and Birch (1959) referred to two dimensions of responsiveness to novelty that resemble the concepts of withdrawal and isolation. They were *activity/passivity* and *approach/withdrawal*. The underlying narrative of the rationale for their project consisted largely of a reaction to the prevailing environmental emphasis in theory about child development and in the advice provided in guides for young parents. Their goals were to show that infants were not blank slates and to provide a full assessment of the range of infant behavior. Their findings were largely descriptive in the sense that they wanted to describe the basic normative dimensions by which infants respond to the environment. Their observations showed that withdrawal and passivity were among the ways that some infants responded to the environment. Like the findings provided by Mitchell (1956), their evidence indicated that withdrawal was a normative form of trait-like behavior that needed to be included in descriptions of social development.

There is another important similarity between the ideas of Mitchell (1956) and Chess et al. (1959). Beyond their agreement that withdrawal is a basic form of social behavior, they appear to agree that it is at least a risk factor if not a direct indicator of problem behavior. Implicit in their writing is the view that withdrawal is problematic as it precludes engagement in opportunities for positive development. Chess et al. depict withdrawal as the opposite of approach in the same way that negative mood is the opposite of positive mood. Mitchell is more explicit as he states that withdrawal will eventually lead to maladjustment.

A third development of the late 1950s and 1960s was in an area that has been mentioned already, specifically sociometry. Sociometry refers to the collection of ideas, constructs, and methods related to understanding the attractions and

repulsions between the members of a group (Cillessen & Bukowski, 2000). One tradition within sociometry has been concerned with identifying children who show elevated levels on the sociometric dimensions of liking and disliking. During the 1950s substantial progress was made in developing techniques to identify children who are *neglected* by their peers. Whereas previous techniques were able to distinguish children who were *stars* or *populars* in their groups (i.e., those who were much above average in how much they were liked by peers and much below average in how much they were disliked) from children who were *rejected* (i.e., low on liking and high on disliking) and those who were average on both dimensions, new techniques developed by Lemann and Solomon (1952) and others (Justman & Wrightstone, 1951; Thompson & Powell, 1951) were also able to distinguish between rejected and neglected children (i.e., children who were neither liked nor disliked). Dunnington (1957) made the strongest contribution through the creation of two new constructs that she called *status* and *notice*. Status was computed by subtracting a measure of disliking from a measure of liking to create an index of relative likeableness; notice was computed by adding liking and disliking scores together to create an index of the extent to which a child was visible within the peer group. More recently the measures of status and notice have been referred to by other terms such as *social preference* and *social impact* (Coie, Dodge, & Coppotelli, 1982; Newcomb & Bukowski, 1983; Peery, 1979). Children who had very low scores on notice (i.e., those with very low scores on both liking and disliking) were presumed to be neglected by their peers.

Taken together these three advances show that, by the beginning of the 1960s, social withdrawal had been identified as a basic form of social behavior and that empirical techniques were now available to measure individual differences in withdrawal and neglect in the peer group. Although these advances provide converging evidence that withdrawal is a basic and measurable dimension of social behavior, it is important to recognize the differences between them. The measure developed by Mitchell is a form of peer perception that focuses on a broad set of indicators, in particular indices of anxiety and reticence in social or interpersonal contexts. His items were "the boys and girls who stay out of game ... they don't like to play hard"; "... too shy to make friends easily, it is hard to get to know them"; "the ones that get bothered and upset when they are called on to talk or recite"; "the boys and girls that you do not notice You just don't think about whether they are with you or not"; and "the ones that are timid and afraid to take chances." In contrast, the withdrawal-related dimension described by Chess, Thomas, and Birch emphasized motor behavior *activity/passivity* and initial reactivity to new stimuli *approach/withdrawal*. Their constructs and methods emphasized behaviors in response to both social and nonsocial stimuli. In a further contrast to this emphasis on behavior, the sociometric approach as practiced by researchers such as Dunnington (1957) emphasized measures of affect such as the extent to which a child was the recipient of positive and negative affect (i.e., liking and disliking) from peers. This diversity is a strength, as it points to the richness

and complexity of withdrawal as a construct, but it poses a challenge as it reveals the construct's multifaceted and amorphous nature whose breadth may be so vast that it needs to be studied as a collection of interrelated phenomena rather than as a single coherent entity. One final aspect of these three advances should not be overlooked. Each of them, either explicitly or implicitly, sees withdrawal as a negative factor that puts children at risk for maladaptive outcomes.

Withdrawal and Isolation Go Underground and Then Come Back from a Different Direction

Although research on peer relations became more frequent during the 1960s and early 1970s than it had been in prior decades, it did not include much research on social withdrawal and isolation. Although the apparent advances of the 1950s might have led to an increased interest in these constructs, research on withdrawal and isolation during these years was rare. Three reasons may have contributed to this relative lack of activity in these constructs. One is that the application of the advances in peer assessment and sociometry posed practical challenges, especially when large samples are used. At this time, computing power was still weak and access to computing machinery and useful software was very limited. A second reason was the emergence of a theory that was more heavily focused on process than on characteristics of the person. The prevailing theoretical models during the 1960s and early 1970s were the mechanistic model of social learning theory and the organismic model of Piagetian theory regarding cognitive and social-cognitive development. In spite of the large differences between these approaches, they shared a strong emphasis on processes that would account for developmental change (especially the Piagetian approach) and the emergence of individual differences (especially the social learning approach). This process orientation left little room for a concern with types of children such as those who were withdrawn or isolated. A third reason may be the cultural zeitgeist in the Western world that emphasized the promotion of competent functioning in children and adolescents. In the Cold War era, prior to America's entry into space race, the USSR's launch of Sputnik led to concerted efforts to foster high levels of performance among the youth in the West. This frenzied zeitgeist aimed at creating super achievers is not likely to have had time to devote to withdrawn children.

This is not to imply that concepts related to social withdrawal and isolation completely disappeared during this period or that there was no interest in the factors that accounted for success in the peer group. Hartup's 1970 and 1983 *Handbook* chapters (Hartup, 1970, 1983) largely consisted of a rich review of findings regarding the development of peer interaction and of evidence that experiences with peers can affect changes in behavior. Consistent with the preference among Piagetians and among the followers of social learning theory for laboratory-based observations, most of the research covered by Hartup used experimental

procedures or well-crafted interviews and tasks. Nevertheless, Hartup devoted attention to two issues related to the topics of withdrawal and isolation. In his discussion of theory about the effects of peer relations on development, Hartup was careful to point to an issue previously covered by Lewin (1946, 1954) and by the Andersons (Anderson & Anderson, 1954), specifically that the desire to belong and to be integrated into the group is a powerful motivational force underlying the effects of peer experiences on behavioral change. In his 1970 chapter, Hartup, a very literate and cultured person, quoted a long passage from Carson McCuller's novel *A member of the wedding* to demonstrate how being part of a larger social unit can be a strong desire for a child. Implied in this view is that withdrawn and isolated children are either atypical or lacking in the skills needed to be part of the group. Hartup also referred in both chapters to research on the factors that affect acceptance in the peer group. He points out that very little attention had been devoted to withdrawal.

Although the mainstream literature on peer relations appeared to be uninterested in social withdrawal and isolation, a developing literature in another research domain was showing increased concern with these topics. In the 1960s and 1970s, large population-based epidemiological studies conducted by clinically oriented psychologists interested in the roots of adult mental health began to study the association between indicators of functioning during childhood and measures of functioning in adulthood. Individually and as a group, these studies showed that measures of problematic peer relations in childhood could be used to predict maladjustment in adulthood (e.g., Cowen, Pederson, Babigian, Izzo, & Trost, 1973; Kohn & Clausen, 1955; Roff, 1961; Roff, Sells, & Golden, 1972). Among the childhood indicators that were associated with problems in adulthood were measures of withdrawal and isolation. In a well-known comprehensive review of this literature, Parker and Asher (1987) identified aspects of withdrawal (e.g., shyness, being an outsider) as potent risk factors for psychosocial problems in adulthood. This evidence supported claims by Hartup (1979) that peer relations were not a mere luxury but were a fundamental domain for development.

This recognition of the significance of experiences with peers for subsequent well-being led to a strong and enduring alliance between developmental social psychologists interested in the features and effects of peer relations and child clinical psychologists interested in the origins of maladjustment. This rapprochement between basic and applied researchers added hybrid vigor to the research literature on peer relations. In contrast to the lab-based process-oriented studies of the 1960s and early 1970s, empirical attention in the late 1970s and early 1980s was redirected toward identifying the person-related factors that were antecedent to success within the peer group. To test their hypotheses about which aspects of peer relations were linked to competent and incompetent functioning with peers, researchers needed techniques to assess multiple forms of behavior and other individual-level variables and to index competent functioning with peers. They also needed to develop nonexperimental procedures to observe the association between these variables.

Two types of naturalistic observation were favored. The first consisted of observing the interactions of previously unacquainted children who had been brought together to take part in playgroups or newly acquainted children in kindergarten classrooms. The purpose of these studies was to assess the extent to which particular types of behavior would affect how much a child would be liked and disliked by her/his new peers. Examples of this approach are studies conducted by Dodge, Schlundt, Schocken, and Delugach (1983) and by Rubin and Daniels-Beirness (1983). The other type consisted of short-term or long-term longitudinal studies to assess how aspects of social functioning among peers, including withdrawal, were associated with subsequent well-being and with subsequent experiences with peers. Examples of this approach include studies by Coie and Dodge (1983) and by Schwartzman and Ledingham (Ledingham & Schwartzman, 1984; Schwartzman, Ledingham, & Serbin, 1985).

Both of these approaches were facilitated by the use of newly developed measures to assess forms of withdrawal-related behaviors or characteristics and/or to assess children's position within the peer group. This critical advance in the measurement of children's position within the peer group was the development of formal systems for identifying children who were neglected by peers. Methods developed by Peery (1979), Coie et al. (1982), and Newcomb and Bukowski (1983) extended previous systems that used measures of acceptance (i.e., liking) and rejection (i.e., disliking) to distinguish between popular, average, and rejected children to identify a group of children who were neglected by their peers (i.e., those who were neither liked nor disliked). These methods gave researchers a powerful new classification system that could create groups of children that could be compared with the analysis of variance which was the most sophisticated statistical procedure in wide use at the time.

These sociometric classification techniques were used by Dodge et al. (1983) in their two observational studies. In these studies they assessed the degree to which the previously unacquainted children in their groups used different strategies as a means of becoming engaged in interactions with their new peers. These strategies included the use of questioning techniques, disruption, self-references, group-oriented remarks, and waiting/hovering. In both of their studies, the children in the neglected group, compared with those in the popular and rejected groups, were far more likely to adopt the highly unassertive *wait and hover* approach as a means of becoming involved in interactions with others. These findings provide evidence of the association between withdrawal-related behavior and an index of children's position within the peer group context.

Similar evidence was observed from the very different vantage point of Coie and Dodge's (1983) five-wave, 4-year longitudinal study of the concurrent and predictive associations between sociometric status and social behavior. The participants in their study were 218 boys and girls who in the first year of the study were in either third or fifth grade. Using a peer assessment technique like the one developed by Mitchell but with a much smaller set of items, they measured the extent to

which each child was cooperative, shy, disruptive, a leader, and a fighter. Their findings showed that children who were consistently assigned to the neglected group or who moved into this classification over time showed mildly elevated levels on the *shy* item. They noted that the role of shyness as a determinant of neglected status within the group appeared to be stronger among the fifth graders.

Although Rubin and Daniels-Beirness (1983) did not use a sociometric classification procedure in their two-wave, 1-year longitudinal studies of social behavior and liking among young school-aged children, they did use richer and more sophisticated measures of withdrawal. Using observations of social behavior in free-play contexts, they coded several forms of solitary activity including solitary-dramatic play, solitary-functional play, and solitary-exploratory play. They reported that each of these types of social behavior was negatively associated with being liked by their peers. These associations were concurrent and predictive across the 1-year interval of the study. Although these findings cannot point directly to an association between withdrawn behavior and neglect, they come close to doing so. Another critical finding from their study is the observation that solitary forms of play in kindergarten predicted the low levels of liking a year later.

The longitudinal project initiated by Schwartzman and Ledingham provides another view of how withdrawal was used in the early studies in this area. Their project differed from other studies in its purposes and its assessment methods. Its goal was to predict adult psychiatric disorders using indices of social functioning with peers during primary school including a measure of withdrawal. Along with measures of aggression and likeability, their measure of withdrawal was taken from the *Pupil evaluation inventory* (Pekarik et al., 1976). From the outset they envisioned a long-term longitudinal study that would identify the long-term consequences of childhood withdrawal. Aside from its long-term scope and its focus on mental illness, their study had two unique characteristics. One was its creation of *extreme* groups on each of their three dimensions. The children assigned to these groups were those whose score on a particular dimension was at or above the 95th percentile. A second innovative feature was their identification of a group of children who had high scores on both withdrawal and aggression.

Taken together these studies initiated in the late 1970s and early 1980s provide ample evidence that withdrawal was seen as a feature of social behavior and social experience that had to be considered in any comprehensive model of healthy functioning and development. As a group they represent the research designs and paradigms that have become the standard approaches to the study of withdrawal. Writing at this time, Cairns (1983b) argued that this renewed interest in social networks was perhaps that era's most significant advance in the study of social development. It is hard to argue with this prescient assessment. Nevertheless, the advances of the next era were to be of equal importance. These advances consisted of a more careful articulation of what withdrawal is and of the complex ways by which it is articulated.

The Entry into the Current Era: The Late 1980s and 1990s

In Cairns's assessment of the current state of the study of peer relations in general and the study of withdrawal in particular, he pointed to several basic problems that he perceived in the conceptual and empirical literature of that time. He referred to the multiple approaches that could be used to assess functioning within the peer group, and he recognized the differences, or *tension*, between them. Cairns, who was at heart an ethologist, pointed out the need to recognize these variations and to understand what each could reveal about a child and the groups where they function. Whereas peer assessments provided information about the behaviors and characteristics of individual children, sociometric measures were indices of affect that indicated the extent to which a child was liked and disliked and, by extension, neglected by peers. Cairns was adamant in his recognition that these measures conveyed different forms of information and that the associations between measures of withdrawal and sociometric measures were, at best, very modest. He was adamant also in his belief that the exact information conveyed by measures of broadband constructs such as withdrawal were not always clear. Finally he was deeply concerned that the original ideas and concepts developed by writers such as Moreno and Lewin had been lost in the preceding decades. The activity during the late 1980s and 1990s put to rest some of Cairns's concerns.

The articulation of social withdrawal

During this period much needed attention was devoted to identifying the more specific dimensions that existed within the broader construct of social withdrawal. The landmark publication of this period was Rubin and Mills's (1988) study showing that withdrawal is not a single-factor construct but is instead a heterogeneous phenomenon that consists of at least two more basic dimensions. Using observational data, they created measures of *solitary-passive activity* that indexed the extent to which a child spent their free-play time alone, quietly exploring or constructing in their social environment, and *solitary-active play* that assessed how much a child played alone in a cognitively immature fashion (see also Coplan & Ooi, Chapter 7, this volume). Using items from Masten et al.'s (1985) *Revised class play* (a peer nomination assessment of social withdrawal), they created a measure of passive solitude that was presumed to index the same phenomenon measured by the behavioral measure of solitary-passive activity and a measure of isolation that was akin to rejection. The peer assessment measure of passive solitude included four items (someone who would rather play alone than with others, someone whose feelings get hurt easily, someone who is very shy, and someone who is usually sad), whereas the measure akin to rejection included three items (a person who can't get others to listen, someone who has trouble making friends, and someone who is often left out). Rubin and Mills showed that these four scores

have different developmental patterns and different correlates. They reported that although the behavioral measure of solitary-passive activity was stable across the period between grade 2 and grade 4, the behavioral measure of solitary-active play was not. Both of the peer assessment measures were also observed to be stable. In regard to their correlates, the behavioral and peer assessment measures of passive solitude were associated with internalizing problems concurrently and over time, whereas the peer-assessed measure of active isolation was, as expected, more strongly related with rejection (i.e., being disliked by peer). The essential point of these findings is that at the least research on the broad construct of social withdrawal needs to distinguish between (i) withdrawal that comes from a person's preference, perhaps due to shyness, and (ii) isolation that results from being pushed or from being unable to gain entry into the group.

A few years after the publication of the paper by Rubin and Mills (1988), Younger and Daniels (1992) provided further empirical evidence of the importance of distinguishing between passive withdrawal (i.e., the preference to be alone rather than to be with others) and active isolation (i.e., being excluded). In their interview study they showed that school-aged children recognized the differences between items intended to index passive withdrawal and the items intended to assess active isolation and that these children believed that these conditions derived from different processes. Further support for their conclusion that social withdrawal in childhood needed to be refined so as to account for its active and passive forms was provided by the results of a confirmatory factor analysis conducted by Bowker, Bukowski, Zargarpour, and Hoza (1998).

A return to measuring the group

During the same period when these refinements in measures were dealing with Cairns's concern with the lack of clarity and meaning in measures of withdrawal, a parallel set of advances were made in sociometric techniques. Cairns had complained that the study of the group remained stuck in the 1930s and the sociograms produced by theorists such as Moreno were little more than premonitions of the abstract art of the 1950s. Borrowing from sociological perspectives, researchers began to use social network analysis to study how social roles and social behavior are inherent to specific positions within a particular network (e.g., peripheral, central, or intermediate). Network analyses use indices of the connections between individuals to create indices of the structure or organization of the group and to identify the position of each individual in it. Most of these techniques were not possible until technical advances in computing power gave researchers the resources to make the complex calculations needed to assess network connections.

By thinking in terms of network positions, it was possible for researchers to go beyond the prevailing view that human behavior is essentially determined by temperament and socialization experiences and to acknowledge that some actions

can only be taken if one's social situation makes them possible or even necessary. The value of social network analysis comes from its capacity to measure a person's network position (e.g., central or peripheral to the network) and his or her potential for facilitating the flow of information or decision-making within the network. For example, it is possible to measure, for each actor in the model, his or her closeness to any other member and his or her *betweenness* (i.e., one's capacity to be in contact with anybody else within the network.)

Beyond their advantage of assessing the position of a particular person within a group, the social network analyses can be used to produce information about the network itself. This function allows for a renewed conceptualization of some issues especially when network analysis is combined with other forms of assessment. For example, one can assess the characteristics of groups that are most likely to lead to elevated scores at the level of the individual on measures of exclusion or rejection. Assuming that social withdrawal is problematic, this issue is no longer conceptualized as a problem of the individual only, but also as a problem that results from processes or conditions that are inherent to the whole network. As a result, negative consequences of social withdrawal impact not only isolated network members but peripheral, intermediate, and central network members as well, either directly or indirectly. The patterns of these associations are also an important feature to consider. For example, as soon as a group reaches a particular size, having a more centralized and hierarchical structure with several peripheral and relatively isolated contributors may be more efficient than having a dense and interconnected network with no clear leader that can channel the team effort in a certain direction. Also, some actors may have few ties within the network but nevertheless play a crucial role by bridging two or more groups that would otherwise be unrelated, thus allowing important information to flow through the whole network.

Initially, thinking about withdrawal not only as an individual issue but also as a social issue may not have been immediately intuitive to many peer researchers. However, statistical techniques that are already common in this field can help to incorporate these considerations within existing research programs with little added effort. Specifically, multilevel analyses that are often used by peer researchers when participants are nested within groups (e.g., students nested within classrooms that are nested within schools) are used to study the effects of group-level characteristics on outcomes of interest.

An interesting feature of social network analytic techniques is their flexibility: the links among individuals can be hypothesized in many ways. This means that individuals who are isolated or very loosely connected to others within a network defined by a certain type of relationships are not necessarily isolated from other network members when considering interconnections of a different nature. An individual who qualifies as withdrawn from a network of friendship ties can be very well connected to others through other types of relationships. A particular talent in sports or academics or the access to rare resources (e.g., having a pool at

home) could make one highly connected to his or her peers when looking at ties based on sports team belonging, study groups, or interactions outside of school during the summer vacations.

Similarly, researchers need to take into account the directionality of the relationships among individuals to determine whether certain actors are isolated or not. Using the example of friendship ties within a student network, very few individuals would appear to be completely isolated from the network when considering unidirectional ties (e.g., George & Hartmann, 1996; Hayes, Gershman, & Bolin, 1980). In fact, most students are able to nominate at least one peer whom they consider to be a friend at school. Those who nominate few friends are peripheral but not completely withdrawn from the network. When considering bidirectional friendship nominations instead, many more students may be identified as completely withdrawn from the network because even if they are able to identify at least one person whom they consider to be a friend, this person may not reciprocate this nomination. It is also important to keep in mind that depending on the type of social ties, isolation may be protective (e.g., when these ties are related to risk behaviors such as drug use). This type of analysis provides an avenue for a more nuanced understanding of temperamental predispositions of passivity and withdrawal that were discussed earlier (Chess et al., 1959).

An embarrassment of riches

By the end of the 1990s, the methods and measures that could be used to study withdrawal and isolation had become more numerous, more refined, and more complex. Cairns's yearning for greater richness, clearer meanings, and renewed solutions to older ideas about how to study constructs such as social withdrawal had been largely satisfied. Many years ago the famous developmental theorist Heinz Werner claimed that the two basic hallmarks of genuine development were differentiation and articulation. By the turn of the millennium, peer researchers had at their disposal a differentiated and articulated set of concepts and measures to study withdrawal. Constructs and measures for studying withdrawal had truly developed.

Summary/What's Past Is Prologue

The purpose of this chapter was to consider how withdrawal has been studied during the last half of the twentieth century and until now. Our emphasis has been on the development of concepts, methods, and measures. We have tried to show that the progress from the earliest days of the study of peer relations has not been direct and steady but instead has varied from one time to another as a function of social/political circumstances, the prevailing theories of particular moments, and available research tools. One has to wonder how much progress has been made. Certainly, as we have tried to show, current measures of withdrawal are more

refined, informative, and powerful. They are also more convenient and useful. There have been advances in peer assessment measures, sociometric measures, and social network analysis. For at least two decades, social network analysis has produced more than just a set of interesting images.

Two aspects that are central to the study of withdrawal during the past 50 years should not be overlooked. One is very positive. Consistent with the modernist sensibilities that are still part of the current intellectual zeitgeist (Howe, 1967), there has been a realization that withdrawal is not a unidimensional phenomenon that has a single manifestation but is instead a complex multifaceted construct that has multiple manifestations that need to be measured with different techniques. Each aspect has its advantages and provides unique forms of information. Peer assessment measures of withdrawal are capable of distinguishing between the source of a child's isolation from the group (i.e., whether it is due to the child's tendency to avoid engagement or whether it comes from exclusion). Traditional sociometric methods have the capacity to integrate experiences of liking and disliking into conceptually meaningful constructs such as social impact. Social network analysis typically relies on a single form of information (e.g., patterns of liking) but has the advantage of providing a rich set of indices about the structure of groups and the positions that individual children have within them. The diversity among these measures and the variables they assess is a form of richness rather than a source of confusion.

Another central feature of the study of withdrawal in the past 50 years is less positive. Throughout this period there has been an implicit claim that withdrawal is bad. To be sure, there is plenty of evidence the measures of withdrawal are associated with negative outcomes (Parker & Asher, 1987; Rubin, Bukowski, & Parker, 2006). Nevertheless, almost no attention, except perhaps in studies that have compared findings from different political units (e.g., Chen's comparisons of children from China and southwestern Ontario in Canada), has been devoted to identifying when withdrawal is a form of risk and when it could have positive effects and when it could contribute to resilience. Already there have been calls to reassess whether being quiet in a loquacious world might not be so bad (Cain, 2012). At the very least researchers may wish to use more complex forms of modeling that would include nonlinear effects or contextual effects to reveal a fuller image of how the many manifestations of withdrawal are associated with development. Studies of this sort are likely to become a large part of the literature on withdrawal in the next decade.

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An Attachment Perspective on Loneliness

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Attachment theory (Bowlby, 1969 / 1982, 1973, 1980) has become one of the leading approaches to conceptualizing and studying interpersonal behavior and the quality of close relationships. In this chapter we explore the relevance of attachment theory for understanding individual differences in loneliness, and we propose specific attachment-relevant cognitive and behavioral mechanisms that can explain these differences. We begin with a brief summary of attachment theory and an account of the two major dimensions of adult attachment orientations, attachment anxiety and avoidance. We then review evidence concerning the associations between these dimensions and loneliness, proposing that the associations are mediated by attachment-related cognitive–motivational mechanisms. Next we review studies of the ways in which attachment orientations contribute to a person’s goal structures, mental representations of self and others, and mental scripts concerning interpersonal transactions.

Basic Concepts of Attachment Theory and Research

One of the core tenets of attachment theory (Bowlby, 1969 / 1982, 1973, 1980) is that human beings are born with a psychobiological system (the *attachment behavioral system*) that motivates them to seek proximity to significant others (*attachment figures*) in times of need. According to Bowlby (1969 / 1982), the goal of this system is to maintain adequate protection and support, which is accompanied by a subjective sense of safety and security. This goal is made salient when people encounter actual or symbolic threats and notice that an attachment figure is not sufficiently near, interested, or responsive (Bowlby). In such cases, a person’s attachment system is

upregulated, and the person is motivated to increase or re-establish proximity to an attachment figure so that *felt security* (Sroufe & Waters, 1977) is attained.

Bowlby (1988) assumed that although age and development increase a person's ability to gain comfort from internal, symbolic representations of attachment figures, no one at any age is completely free from reliance on actual others (see also Galanaki, Chapter 5, this volume). The attachment system therefore remains active over the entire lifespan, as indicated by adults' tendency to seek proximity and support when threatened or distressed (Hazan & Zeifman, 1999). Moreover, people of all ages are capable of becoming emotionally attached to a variety of relationship partners (e.g., siblings, friends, romantic partners, coaches, and leaders), using such people as *stronger and wiser* attachment figures (Bowlby, 1969/1982) – that is, as safe havens in times of need and secure bases from which to explore and develop skills – and suffering distress upon prolonged or permanent separation from these people (Bowlby, 1980; Shaver & Fraley, 2008).

Bowlby (1973) devoted a great deal of attention to individual differences in attachment-system functioning that arise as a result of the availability, responsiveness, and supportiveness of a person's key attachment figures, especially in times of need. Interactions with attachment figures who are available, sensitive, and supportive in times of need (i) facilitate the smooth functioning of the attachment system, (ii) promote a sense of connectedness and security, and (iii) strengthen positive mental representations (*working models*) of self and others. In contrast, when attachment figures are not reliably available and supportive, (i) a sense of security is not attained; (ii) worries about one's social value and others' intentions become ingrained; and (iii) strategies of affect regulation other than proximity-seeking are developed (*secondary attachment strategies*, characterized by *anxiety* and *avoidance*).

When studying individual differences in attachment-system functioning in adults, attachment research has focused primarily on *attachment orientations* (or *styles*) – patterns of relational expectations, emotions, and behaviors that result from internalizing a particular history of attachment experiences (Shaver & Mikulincer, 2002). Research, beginning with Ainsworth, Blehar, Waters, and Wall (1978) and continuing through scores of recent studies by social and personality psychologists (reviewed by Mikulincer & Shaver, 2007, and updated in the present chapter), indicates that attachment styles are conceptually located in a two-dimensional space defined by two roughly orthogonal dimensions, attachment anxiety and attachment-related avoidance (Brennan, Clark, & Shaver, 1998). The avoidance dimension reflects the extent to which a person distrusts relationship partners' goodwill and defensively strives to maintain behavioral independence and emotional distance. The anxiety dimension reflects the extent to which a person worries that a partner will not be available in times of need, partly because of the person's self-doubts about his or her own love-worthiness. People who score low on both dimensions are said to be secure with respect to attachment. A person's location in the two-dimensional space can be measured with reliable and valid

self-report scales (e.g., the Experiences in Close Relationships (ECR) scale, Brennan et al., 1998), and this location is associated in theoretically predictable ways with a wide variety of measures of relationship quality and psychological adjustment.

We (Mikulincer & Shaver, 2007) proposed that a person's location in the two-dimensional anxiety-by-avoidance space reflects both his or her sense of attachment security and the ways in which he or she deals with threats and stressors. People who score low on these dimensions are generally secure, hold positive working models of self and others, and tend to employ constructive and effective affect-regulation strategies. Those who score high on either attachment anxiety or avoidance, or both (a condition called fearful avoidance), suffer from attachment insecurities, self-related worries, and distrust of others' goodwill and responsiveness in times of need. Moreover, such insecure people tend to use secondary attachment strategies that we, following Cassidy and Kobak (1988), conceptualize as attachment-system *hyperactivating* or *deactivating* to cope with threats, frustrations, rejections, and losses.

People who score high on attachment anxiety rely on hyperactivating strategies – energetic attempts to achieve support and love combined with a lack of confidence that these resources will be provided and with feelings of anger and despair when they are not provided (Cassidy & Kobak, 1988). These reactions occur in relationships in which an attachment figure is sometimes responsive but unreliably so, placing the needy person on a partial reinforcement schedule that rewards exaggeration and persistence in proximity-seeking attempts because these efforts sometimes succeed. In contrast, people who score high on attachment-related avoidance tend to use deactivating strategies: trying not to seek proximity to others when threatened, denying vulnerability and needs for other people, and avoiding closeness and interdependence in relationships. These strategies develop in relationships with attachment figures who disapprove of and punish frequent expressions of need and bids for closeness (Ainsworth et al., 1978).

Both anxious hyperactivation and avoidant deactivation are defenses against the psychological pain induced by the unresponsiveness of attachment figures (Mikulincer & Shaver, 2007). Although these strategies are initially adaptive, in the sense that they adjust a child's behavior to the requirements of an inconsistently available, or consistently distant, attachment figure, they prove maladaptive when used in later relationships where proximity-seeking and collaborative interdependence could be productive and rewarding. They also foster the continued use of nonoptimal affect-regulation strategies that interfere with psychological adjustment and mental health. Hundreds of studies, summarized in our 2007 book (Mikulincer & Shaver), confirm that attachment insecurities place a person at risk for emotional difficulties and psychopathology. In the following section, we review evidence concerning the detrimental effects that attachment insecurities have on the quality of a person's social interactions and close relationships.

Attachment-Related Differences in Interpersonal Interactions and Close Relationships

Attachment insecurities, expressed as either anxiety or avoidance, tend to have detrimental consequences for the quality and stability of social and personal relationships. Hundreds of studies have consistently shown that less secure people report lower levels of satisfaction in couple relationships and tend to have less stable romantic relationships (see Mikulincer & Shaver, 2007, for a review). This pattern has been consistently observed in cross-sectional and prospective studies of both dating and married couples, and it has not been explained by other measured personality factors, such as self-esteem or the *Big Five* personality traits (e.g., Noffle & Shaver, 2006). Moreover, the link between attachment insecurities and relationship dissatisfaction has been found in two overlapping longitudinal samples of US couples with children, covering a period of 15 years after the first child's birth (Hirschberger, Srivastava, Marsh, Cowan, & Cowan, 2009).

Insecure people's problems in close relationships have also been revealed in studies assessing the quality of peer relationships and friendships. For example, self-reports of attachment insecurities have been associated with friendships characterized by relatively low levels of trust, self-disclosure, closeness, mutuality, and relationship satisfaction (e.g., Bippus & Rollin, 2003; Furman, Simon, Shaffer, & Bouchey, 2002; Grabill & Kerns, 2000). Moreover, studies that have assessed the quality of actual interactions between friends in the laboratory have found that attachment insecurities contribute to lower levels of synchronous, intimate, and warm interactions (e.g., Black & McCartney, 1997; Weimer, Kerns, & Oldenburg, 2004).

Adult attachment research has also revealed that attachment insecurities tend to negatively bias cognitions, emotions, and behavior during interpersonal interactions. For example, attachment insecurities encourage negative, dysfunctional construals of daily interactions with friends, relatives, and romantic partners. Whereas avoidant attachment is consistently associated with lower reports of satisfaction, intimacy, self-disclosure, supportive behavior, and positive emotions during daily social interactions, attachment anxiety is associated with more negative emotional experiences and more frequent feelings of rejection during these interactions (e.g., Kafetsios & Nezlek, 2002; Pietromonaco & Barrett, 1997; Tidwell, Reis, & Shaver, 1996).

Attachment insecurities also tend to negatively impact the likelihood of success of flirtation and dating interactions. Anxious attachment has been associated with an unselective, indiscriminate approach to dating that tends to increase the likelihood of rejection and dissatisfaction (McClure, Lydon, Baccus, & Baldwin, 2010). Attachment-related avoidance has been associated with both expectations of failure in dating interactions and aversion to commitment (Birnie, McClure, Lydon, & Holmberg, 2009). That is, avoidant people enter new relationships with detailed scripts for commitment aversion and expectations for relationship failure, which in turn reduce the likelihood of moving toward a long-term relationship.

There is also evidence that attachment insecurities (of both the anxious and avoidant varieties) can undermine the quality of interpersonal communication. Avoidant attachment may reduce interest in engaging in warm and affectionate interactions and pose difficulties for expressing concerns and feelings and for responding sensitively to a partner's needs and comments. Attachment anxiety may pose difficulties for attending accurately to a partner's thoughts and feelings because of self-focus and worries about being criticized or rejected. Indeed, self-reports of attachment insecurities have been found to be positively associated with the demand-withdrawal pattern of interaction known to be destructive to relationship stability (e.g., Feeney, 1994; Fitzpatrick, Fey, Segrin, & Schiff, 1993). In addition, less secure partners have been found to maintain less positive patterns of nonverbal communication (expressiveness, pleasantness, attentiveness; e.g., Guerrero, 1996; Tucker & Anders, 1998) and to be less accurate in expressing their feelings and coding their partner's nonverbal messages (e.g., Feeney, 1994).

Findings also indicate that attachment insecurities can increase the amount and severity of interpersonal conflicts and lead partners to adopt less adaptive ways of managing conflicts. For example, Brassard, Lussier, and Shaver (2009) found that higher scores on attachment anxiety or avoidance predicted higher levels of perceived conflict within couple relationships. There is also evidence that attachment insecurities foster more conflictual interactions between relationship partners and generate more interpersonal stress (e.g., Bottonari, Roberts, Kelly, Kashdan, & Ciesla, 2007; Hankin, Kassel, & Abela, 2005). Other researchers have reported that higher scores on attachment anxiety and avoidance scales are associated with greater reliance on strategies that lead to conflict escalation (e.g., withdrawal, coercion) and a tendency to engage in verbal or physical aggression during conflicts (e.g., Cann, Norman, Welbourne, & Calhoun, 2008; Dominique & Mollen, 2009; Mehta, Cowan, & Cowan, 2009). In the same context, Powers, Pietromonaco, Gunlicks, and Sayer (2006) found that higher scores on attachment anxiety or avoidance scales were associated with higher levels of salivary cortisol (an index of physiological stress) after a 15-min discussion of an unresolved conflict with a dating partner.

Overall, the reviewed findings indicate that attachment insecurities put people at risk for troubled, unstable relationships. This conclusion is further supported by studies assessing people's profiles of interpersonal problems (e.g., Bartholomew & Horowitz, 1991; Chen & Mallinckrodt, 2002; Gillath et al., 2005). Attachment anxiety is consistently associated with a higher overall level of interpersonal problems and with notable elevations in problems related to being *subassertive* (e.g., "It is hard for me to be assertive with another person"), *exploitable* (e.g., "I let other people take advantage of me too much"), and *overly expressive/demanding* (e.g., "I want to be noticed too much"). Avoidant attachment is usually associated with problems related to being *overly competitive* (e.g., "I fight with other people too much"), *cold* (e.g., "I keep other people at a distance too much"), and *introverted* (e.g., "I feel embarrassed in front of other people too much"). In the next section, we review evidence showing that the interpersonal problems and low-quality,

unstable relationships of insecurely attached people are directly manifested in subjective feelings of loneliness.

Attachment Insecurities and Feelings of Loneliness

The interpersonal problems and low-quality, unstable relationships of insecurely attached people can easily result in subjective feelings of loneliness. The term loneliness refers to a negative psychological experience that emanates from actual or perceived deficiencies in a person's relationships and from feelings of deprivation in relation to others (Peplau & Perlman, 1982 – see also Asher & Weeks, Chapter 16, this volume). Larose, Guay, and Boivin (2002), for example, defined loneliness as a “subjective distressing and unpleasant state in which individuals perceive deficiencies in their social world” (p. 684). These deficiencies are not only quantitative, such as few friends or infrequent social activities, but are also indicative of poor-quality relationships in which people feel a lack of intimacy and emotional closeness as well as feel unloved, unaccepted, not sufficiently cared for, misunderstood, or unvalidated by a relationship partner. In fact, a person can feel lonely while being in a close relationship with a cool, rejecting, inconsistent, or unavailable partner (e.g., Rubenstein & Shaver, 1982; Weiss, 1973).

Working explicitly from an attachment perspective, Weiss (1973) defined loneliness as a subjective state that indicates unsatisfied needs for proximity, love, and care due to the unavailability and nonresponsiveness of attachment figures. In other words, loneliness is a form of separation distress that results from failure to meet basic attachment needs. As such, loneliness should be mitigated or precluded by partners and relationships that promote a sense of security and satisfy one's needs for love, acceptance, understanding, and care. In contrast, a history of relationships with unavailable and nonresponsive relationship partners and the resulting attachment insecurities should render a person chronically vulnerable to loneliness (Berlin, Cassidy, & Belsky, 1995; Hazan & Shaver, 1987).

Attachment researchers have also claimed that anxious attachment is more conducive to loneliness than is avoidant attachment (e.g., Berlin et al., 1995). Attachment-anxious people exaggerate their unsatisfied needs for love and security, which intensifies the psychological pain associated with insufficient or missing intimacy, emotional closeness, and a partner's signs of acceptance, understanding, and care. Avoidant people try to deny or inhibit attachment needs and may therefore feel less directly or less consciously frustrated by poor-quality relationships or nonresponsive partners. Avoidant individuals tend to be disengaged in social interactions, which leads them to feel bored, distant, tense, or irritated, but they can acknowledge those feelings without admitting a need for affection or connectedness. In fact, construing the problem as one of boredom or irritation puts the blame on something outside or external to the avoidant person. One can be bored and critical or dismissing of others without admitting personal needs, insufficiencies,

or dependence on others. According to Hazan and Shaver (1987), this stance often allows avoidant people to admit that they are distant from others without labeling themselves lonely.

These hypotheses have been supported by dozens of studies that have examined the associations between self-reports of attachment orientations and feelings of loneliness. For example, lower ratings of attachment security in relationships with parents or peers during adolescence were associated with higher scores on the UCLA Loneliness Scale (e.g., Larose & Boivin, 1997, 1998; Larose et al., 2002). In addition, the vast majority of studies that have assessed self-reports of attachment anxiety and avoidance among young adults have found that both anxious and avoidant attachment are strongly associated with higher scores on the UCLA Loneliness Scale (e.g., Larose & Bernier, 2001; Wei, Russell, & Zakalik, 2005; Wiseman, Mayseless, & Sharabany, 2006). Findings are less consistent with respect to comparisons between anxious and avoidant attachment orientations (when attachment was assessed categorically): some have found no significant difference between the two insecure groups (e.g., Goosens, Marcoen, van-Hees, & van-de-Woestijne, 1998), but others have found greater self-reported loneliness among anxious than among avoidant people (e.g., Man & Hamid, 1998; Marsa et al., 2004). The finding that avoidance, like attachment anxiety, is related to loneliness implies that avoidant people may not deactivate their attachment systems to the point of not caring at all about the absence of supportive relationships.

However, even if both anxious and avoidant people tend to feel lonely, only avoidant people seem to choose to withdraw socially and remain isolated. For example, Shaver and Hazan (1987) reported that whereas attachment-anxious people were less likely to expect to be lonely forever and described themselves as hopeful and active in their search for relationship partners, avoidant people were more likely to believe they would always be lonely. Interestingly and sadly, longitudinal and cross-sectional studies of adults have indicated that these expectations tend to be fulfilled across the lifespan. In a nationally representative survey study of American adults, Mickelson, Kessler, and Shaver (1997) found that scores on anxious attachment declined with age, whereas scores on avoidant attachment remained about the same over the years. Klohnen and Bera (1998) studied a group of women across a 30-year expanse of adulthood and obtained similar results.

Avoidant people are more likely than their secure and anxious age-mates to say that during the preceding few years, they have not felt in tune with other people, have not been part of a group of friends, and have not felt close to anyone (Shaver & Hazan, 1987). Similarly, Larose, and Bernier (2001) found that avoidance but not anxiety was associated with social withdrawal, and Bookwala (2003); Davila, Steinberg, Kachadourian, Cobb, and Fincham (2004); and Kirkpatrick and Hazan (1994) found that avoidance increased the odds of being single or not being involved in serious dating (see also DePaulo, Chapter 17, this volume). However, at odds with these findings, Schachner, Shaver, and Gillath (2008) found no sign of heightened avoidant attachment in a community sample of long-term single adults

(not being in a committed relationship for the past 3 or more years and not likely to become committed in the near future) compared to coupled participants.

In a recent study examining the function of the subjective state of nostalgia as a repository of the sense of social connectedness, Wildschut, Sedikides, Routledge, and Arndt (2010) found that avoidant attachment seems to inhibit this restorative process. In three studies, they showed that loneliness arousal seems to mobilize a state of nostalgia among people scoring low on avoidant attachment but not among highly avoidant people. For example, less avoidant participants (as compared to those high in avoidance) were more likely to report that they become nostalgic in response to loneliness. Moreover, an experimental induction of deficiencies in relational connectedness increased reports of nostalgia among participants scoring low on avoidant attachment but not among those scoring high on this dimension. In two additional studies, they found that an experimental induction of nostalgia increased a sense of social connectedness only among people scoring low on avoidant attachment but not among those scoring high on this dimension. Overall, it appears that attachment-related avoidance inhibited or interfered with a psychological mechanism (nostalgia) that seems intended to restore feelings of connectedness following episodes of loneliness. In this way, avoidant people may fail to overcome episodes of loneliness and continue to accumulate feelings of social disconnection, which can, in turn, fuel social withdrawal responses and detachment from close relationships.

Overall, the reviewed findings clearly indicate that attachment insecurities are associated with loneliness. In the next section, we consider some cognitive mechanisms that may mediate the link between attachment insecurities and loneliness. Specifically, we focus on the ways in which insecure people construe their interpersonal goals, beliefs about self and others, and mental scripts of interpersonal interactions. These cognitive construals can explain their problematic interpersonal behavior and their resulting feelings of loneliness.

Cognitive Mechanisms Mediating the Attachment–Loneliness Link

People enter social interactions with knowledge and attitudes that they acquired during past interactions with the same relationship partner, or they transfer and apply knowledge and attitudes based on previous relationships (Brumbaugh & Fraley, 2006). These cognitive construals include a person's goal structure (the goals he or she frequently seeks during social interactions), declarative knowledge about self and others (beliefs about one's worth, skills, and efficacy; beliefs about a partner's likely motives and actions), and procedural knowledge about interpersonal interactions (mental scripts representing the ways in which interpersonal interactions typically unfold). These construals can bias feelings and behavior during an interpersonal interaction via top-down, schematic processes that favor attention to and encoding of information that reinforces expectations and

encourages the ignoring or dismissal of information that invalidates expectations. More important, these construals are parts or offshoots of a person's attachment orientation, and they are among the main vehicles by which attachment insecurities are transferred to feelings of loneliness.

Interpersonal goals

According to attachment theory, each of the two main kinds of attachment insecurity (anxiety and avoidance) involves particular wishes and fears concerning security, closeness, dependency, and autonomy (e.g., Mikulincer & Shaver, 2007), which can influence the pursuit of particular goals during interpersonal interactions. Attachment anxiety is associated with interpersonal goals that are compatible with intense needs for love and closeness and fears of rejection and separation. In contrast, avoidant attachment seems to favor goals that are compatible with emotional distance and self-reliance and that lead people to withdraw from interdependence and intimacy. Indeed, Collins, Guichard, Ford, and Feeney (2004) found that attachment anxiety was associated with overemphasizing the importance of receiving a romantic partner's love and support and avoidant attachment was associated with downplaying goals of emotional closeness and interdependence. Moreover, avoidant attachment is associated with intimacy aversion (e.g., Doi & Thelen, 1993), conceiving of relationship partners as relatively distant from one's *core self* (Rowe & Carnelley, 2005), and expressing discomfort when another person moves into one's personal space (e.g., Kaitz, Bar-Haim, Lehrer, & Grossman, 2004). In addition, attachment anxiety is associated with rejection sensitivity (e.g., Downey & Feldman, 1996) and with quick recognition of rejection words in a lexical decision task (e.g., Baldwin & Kay, 2003).

These various interpersonal goals can contribute to feelings of loneliness. A hungry search for love and closeness and a heightened sensitivity to rejection can lead anxiously attached people to react with frustration, pain, and feelings of disconnection to minimal or ambiguous signs of a partner's disapproval, criticism, unavailability, or misunderstanding, thereby prompting the experience of more frequent and longer bouts of loneliness. In contrast, a compulsive search for self-reliance and intimacy aversion are likely to make avoidant people feel socially disconnected, alone, and lonely.

Mental representations of the self

Bowlby (1973) argued that children construct mental representations of themselves while interacting with attachment figures in times of need. Whereas episodes of attachment-figure availability can promote perceptions of oneself as valuable, lovable, and special, because one is actually valued, loved, and regarded as special by a caring attachment figure, frustrating interactions with unsupportive attachment figure can shatter these positive self-representations. Indeed, adult attachment research shows that attachment insecurities are associated with negative self-representations (see Mikulincer & Shaver, 2007, for a review). For example, more attachment-anxious individuals tend to report lower self-esteem (e.g., Mickelson et al., 1997), to view

themselves as less competent and efficacious (e.g., Cooper, Shaver, & Collins, 1998), and to possess less optimistic expectations about their ability to cope with stress (e.g., Berant, Mikulincer, & Florian, 2001). Moreover, both attachment anxiety and avoidance are associated with having a less coherent model of self (Mikulincer, 1995).

In a series of laboratory experiments, Mikulincer (1998) showed that both of the secondary attachment strategies (anxious hyperactivation and avoidant deactivation) distort self-representations but in different ways. Whereas hyperactivation negatively biases anxious people's self-representations, deactivating strategies favor defensive processes of self-enhancement and self-inflation. On the one hand, anxious strategies cause attention to be directed to self-relevant sources of distress (e.g., expectations of interpersonal rejection) and exacerbate self-defeating self-presentational tendencies, which involve an emphasis on helplessness and vulnerability as a way of eliciting other people's compassion and support. In contrast, avoidant strategies divert attention away from self-relevant sources of distress and encourage the adoption of a self-reliant attitude, which requires exaggeration of strengths and competences.

These biases in self-representations may also contribute to feelings of loneliness. The negative model of self that characterizes anxiously attached people tends to be generalized to global feelings of unlovability and pessimistic expectations about being accepted, understood, and cared by others, which in turn may negatively bias cognitions and feelings during interpersonal interactions and result in self-exacerbating cycles of frustration, pain, and loneliness. Avoidant people's defensive exaggeration of strengths and competences can also contribute to social isolation because a close relationship partner can reveal and articulate the avoidant person's imperfections, weaknesses, and flaws and therefore endanger his or her defensive shield.

Mental representations of others

According to attachment theory, people with different attachment orientations also differ in their perceptions of other people (Bowlby, 1973). Whereas security-enhancing interactions with available and responsive attachment figures promote a positive view of others, emotionally painful, frustrating interactions with unavailable or rejecting attachment figures contribute to negative views of others (Shaver & Hazan, 1993). Indeed, avoidant attachment is correlated with negative views of human nature (e.g., Collins & Read, 1990), lack of esteem for others (e.g., Luke, Maio, & Carnelley, 2004), doubts about other people's trustworthiness (e.g., Cozzarelli, Hoekstra, & Bylsma, 2000), and negative expectations about others' behavior (e.g., Baldwin, Fehr, Keedian, Seidel, & Thompson, 1993). For example, Baldwin et al. (1993) examined the cognitive accessibility of expectations regarding a partner's behavior, using a lexical decision task, and found that avoidant people had readier mental access to representations of negative partner behaviors (e.g., the partner being hurtful) than secure people.

Although people scoring high on attachment anxiety also have a history of frustrating interactions with attachment figures, they nevertheless tend to believe that

if they intensify their proximity-seeking efforts, they may compel relationship partners to pay more attention and provide more adequate support (Cassidy & Berlin, 1994). As a result, they may hold more ambivalent appraisals of their close relationship partners, simultaneously activating conflicting motivational forces (want/approach and fear/avoid) and attitudes (positive and negative) when they think about their partner. In a recent series of studies, Mikulincer, Shaver, Bar-On, and Ein-Dor (2010) examined this hypothesis with both explicit and implicit measures of relational ambivalence. At the explicit level, participants completed a self-report measure of relational ambivalence in which they rated their positive and negative feelings toward several traits of their romantic partner. At the implicit level, participants were exposed to positive and negative words related to relational closeness and distance from relationship partners (e.g., closeness, intrusiveness, privacy, loneliness) and were asked either to pull a lever toward themselves (an approach response) or push the lever away from themselves (an avoidance response) when they had registered the meaning of a particular word. The time taken to initiate each response was automatically recorded. Ambivalence toward a word (or the concept named by the word) was assessed in terms of rapid approach *and* avoidance responses to relationship words and in terms of smaller differences between such latencies. As expected, attachment anxiety was associated with both explicit and implicit measures of relational ambivalence.

In two experimental studies, Murray, Derrick, Leder, and Holmes (2008) primed approach/connectedness goals and then measured explicit reports of relationship closeness and implicit associations concerning a romantic partner. Among participants with positive models of self, priming approach goals produced more positive feelings and associations connected with a partner on both implicit and explicit measures. However, among those with a negative model of self, priming approach goals activated positive associations at the implicit level, probably reflecting a hunger for love and care, and negative feelings at the explicit level, probably reflecting conscious fears of rejection and unlovability.

These negative or ambivalent views of relationship partners can further exacerbate feelings of loneliness. Construing a partner negatively would make it more difficult to forgive his or her negative relational behavior, because this behavior would be attributed to the partner's malicious personality or negative intentions. As a result, insecure individuals may feel hopeless and helpless in trying to improve the quality of their relationships, repair attachment injuries, and reestablish relational harmony following a partner's negative behavior, which in turn may sour the person on the relationship and increase feelings of loneliness.

Mental scripts

Working models of self and others include procedural knowledge about how social interactions unfold and how one can best handle stress and distress (e.g., Waters, Rodrigues, & Ridgeway, 1998; Waters & Waters, 2006). According to Mikulincer and Shaver (2007), interactions with warm, loving, and supportive attachment figures are

embodied in a relational if-then script, which Waters et al. (1998) called a *secure-base script*. This script is thought to include something like the following if-then propositions: "If I encounter an obstacle and/or become distressed, I can approach a significant other for help; he or she is likely to be available and supportive; I will experience relief and comfort as a result of proximity to this person; I can then return to other activities." Once activated, this script serves as a guide for interacting with others and can, by itself, mitigate distress, promote optimism and hope, and help secure individuals cope well with personal problems, relational problems, and feelings of loneliness.

There is evidence for the psychological reality of the secure-base script. Mikulincer, Shaver, Sapir-Lavid, and Avihou-Kanza (2009) presented study participants with a picture of a needy person (an injured person in a hospital bed who had a sad facial expression) and asked them to write a story about what would happen next. More secure participants were more likely to write stories that included the key elements of the secure-base script (support-seeking, receipt of support, and relief of distress). Using a prompt-word outline method, Waters and Waters (2006) also showed that securely attached participants produced more stories organized around the secure-base script than insecurely attached participants. In addition, Mikulincer et al. (2009) found that relatively secure participants generated more inferences concerning the secure-base-script information they received and made faster and more confident judgments about it.

Following this line of research, Ein-Dor, Mikulincer, and Shaver (2011) argued that insecurely attached people possess mental scripts of distress management. Attachment-anxious individuals rely on a *sentinel script* – one that includes high sensitivity to clues of impending danger and a tendency to warn others about the danger while staying close to others in the dangerous situation. Ein-Dor et al. (2011) also hypothesized that avoidant people's responses are organized around what they called a *rapid fight-flight script* – one that includes rapid self-protective responses to danger without consulting other people or seeking to receive help from them. In a series of five studies, Ein-Dor et al. found that more participants who scored higher on attachment anxiety had readier mental access to the components of the sentinel script when writing a story about threatening events, and they processed sentinel-script information more quickly and more deeply than less anxious participants. Avoidant participants had readier mental access to components of the rapid fight-flight script and evinced better encoding and deeper processing of rapid-fight-flight-script information.

These scripts are likely to intensify insecure people's experiences of loneliness. The more anxious people's scripts lack the script elements of support provision and distress relief. That is, their script pushes them to approach others in an effort to restore well-being but with worries that their efforts will be useless and may result in more pain and frustration. As a result, they may be caught in a self-exacerbating cycle of distress, pain, and loneliness. Avoidant people's scripts lack the elements of distress acknowledgment and support-seeking, which leads them to withdraw from relationship partners and exacerbate feelings of social isolation and boredom.

Concluding Remarks

Loneliness is an interesting topic for personality–social psychologists interested in attachment, because Hazan and Shaver (1987) were studying loneliness and were influenced by Weiss's (1973) book when they began to study loneliness from an attachment-theoretical perspective. Weiss had worked with Bowlby during a sabbatical year in London and was one of the first social scientists to use Bowlby's ideas in analyzing loneliness. Before Hazan and Shaver undertook their research, Rubenstein and Shaver (1982) had drawn a distinction between loneliness and positive solitude, with the former being more common in people with an insecure attachment orientation and the latter being a healthy state. Post-1987 research on attachment and loneliness has largely overlooked the possibility that secure individuals might be most comfortable with solitude and might be able to pursue it and benefit from it in healthy, creative ways. That possibility has not been studied to date and would be a fruitful topic for future research.

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Shyness and the Electrical Activity of the Brain

On the Interplay between Theory and Method

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Theories without methodological implications are likely to be little more than idle speculation with minimal empirical import. And methods without theoretical substance can be sterile, representing technical sophistication in isolation. – Van Maanen, Sorenson and Mitchell (2007, pp. 1145–1146)

The understanding of phenomena in any scientific field is dependent upon the interplay between theory and method. The scientific study of individual differences is no different. Seventy-five years ago, two developments, one methodological and one theoretical, emerged independently in the fields of neurology and personality, respectively. These developments would go on to inform and shape how researchers would study the neurophysiology of individual differences in temperament and personality.

One development was the methodological work by Hans Berger, a neuropsychiatrist in Germany. Berger was the first to record brain electrical activity in humans using a technique he developed called the electroencephalogram (EEG; Berger, 1929). Although Berger's new technique was initially met with some skepticism, his method and findings were subsequently replicated, and today EEG is used in basic and clinical research settings around the world.

Theoretical speculations in the nascent field of personality science occurring around the same time in North America and England were a second key

development. In addition to identifying basic traits and structural features of personality, well-known personality theorists such as Allport (1937) and Murray (1938) in the United States and Eysenck (1947, 1967) in the United Kingdom speculated that such individual differences in personality might have identifiable neurophysiological correlates and substrates. For example, Allport called personality traits “neuropsychic dispositions” and seemed to hope for more “aid from neurophysiology” (p. 319), whereas Murray emphasized that personality processes are “dominant configurations in the brain” and lamented that “at present...they must be inferred” (p. 45). Unfortunately, these early speculations lacked adequate methodological tools to quantify and test these theoretical constructs.

Eysenck (1947, 1967) would later go on to provide a theoretical brain-based model for understanding individual differences in personality in which he formulated empirically testable hypotheses. Influenced by the earlier work of Pavlov and other Soviet investigators, Eysenck argued that individual differences in the excitability and inhibition of cortical and subcortical circuits influence conditioning and reactivity to sensory stimuli, factors which shape individual differences in personality. Fortunately, by the postwar period, the psychophysiological methods existed to test Eysenck’s theory and hypotheses.

The interplay between theory and method seven decades ago, and since then, has been critical for shaping contemporary research on the neurophysiology of personality. Theory has informed the methods needed to examine the brain and has set the agenda for research programs; method has informed how we come to understand the brain and has constrained excessive speculation that is not grounded in biology.

Recent theoretical and methodological advances in the area of neuroscience have spawned renewed interest in how we come to understand complex traits such as temperament and personality. Although much remains to be discovered, there have been significant advances in the understanding of brain–behavior relations, the biological origins of individual differences in complex traits, and the neural mechanism(s) that may maintain them. For example, we now know that brain function and structure is not fixed after the early school-age years and that early experience plays a key role in shaping brain–behavior relations. As well, methodological improvements allow us to collect and analyze biological measures relatively noninvasively and economically in clinical and nonclinical adult and pediatric populations. The advent of faster and more powerful computers is one example of how methodological advancements allow us to sample dynamic brain electrical activity that approximates real time and perform sophisticated analyses of the data that can be examined in relation to a range of questions concerning individual differences and psychological processes.

In this chapter, we discuss the importance of considering the interplay between theory and method in understanding the neurophysiology of one form of solitude (i.e., shyness) and highlight this interplay throughout the chapter. Much of the

work reviewed here is based on adult, child, and clinical studies conducted in our laboratory over the last 20 years, focused on understanding different forms of solitude, with a particular emphasis on the phenomenon of shyness. This work has been guided by a brain-based model of approach–avoidance, relating variation in continuous electrocortical activity to individual differences in social behavior in general and shyness in particular. Although over the past two decades we, and others, have used a number of different, but complementary, psychophysiological and electrocortical measures to understand the neural correlates and bases of shyness, for brevity, we focus exclusively on a review of studies employing the use of continuous electrocortical measures. The interested reader is referred elsewhere for the use of other biological measures in the study of shyness (Miskovic & Schmidt, 2012; Schmidt, Polak, & Spooner, 2005).

The chapter is divided into three main sections. In the first section, we provide a working definition and conceptualization of shyness that has guided our research program. In Section 2, we describe a brain-based model of approach–avoidance which provides a theoretical framework for our research program. We also review our work using this framework and measures of continuous electrocortical activity to index individual differences in social behavior in general and shyness in particular. We then conclude in the third section with a discussion of future possibilities and caveats for the field.

Shyness: Definition and Conceptual Framework

We begin the chapter by first providing a definition and conceptual framework for the study of shyness that has guided our research program over the last two decades. Shyness is defined as an anxious preoccupation of the self in response to real and/or imagined social interactions (Melchoir & Cheek, 1990). The phenomenon has its roots in early infant temperament, remains modestly preserved during the preschool and school-age years, and has a number of cognitive/affective, behavioral, and psychophysiological stress vulnerability correlates (see Kagan, 1994, 1999). These include low self-esteem, anxiety, social withdrawal, high resting heart rate and morning cortisol levels, and greater relative right frontal EEG activity. Although a ubiquitous phenomenon that many individuals experience at some point in their lives (Zimbardo, 1977), individuals who exhibit chronic shyness across development are at risk for depression and anxiety disorders (see Schmidt & Buss, 2010; Schmidt et al., 2005, for reviews).

One conceptual framework that has been particularly useful to the research community for studying shyness was developed and described by Jens Asendorpf (1990, 1993; Asendorpf & Meier, 1993). Asendorpf argued that an interaction of social approach and social avoidance dimensions can be used as a heuristic to understand individual differences in social behavior (see Nikitin & Schoch,

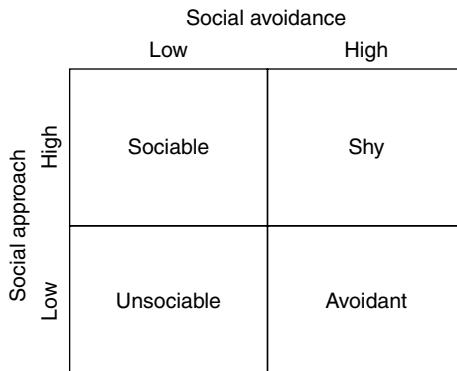


Figure 4.1 An approach and avoidance heuristic framework for understanding individual differences in shyness. The interaction of social approach and social avoidance dimensions and resulting four social behaviors.

Source: Asendorpf (1990)

Chapter 12, this volume). The interaction of these two dimensions yields at least four resulting social behaviors and types of individuals (see Figure 4.1). According to Asendorpf, *shyness* (upper right-hand quadrant) results from a conflict between high-approach and high-avoidance motivational tendencies. Shy individuals are highly socially inhibited. They desire to interact but feel inhibited and anxious in social situations and are defined as socially conflicted.

The approach–avoidance framework used to study shyness has gained traction over the last two decades. A number of empirical studies have found that shy children and adults are distinguishable from other socially withdrawn children and adults on a variety of behavioral measures (Asendorpf, 1993; Coplan, 2000; Coplan & Armer, 2007; Coplan, Prakash, O’Neil, & Armer, 2004; Coplan, Rubin, Fox, Calkins, & Stewart, 1994; Rubin & Asendorpf, 1993). For example, Coplan and his colleagues reported that shy children (i.e., high approach–high avoidance) displayed more unoccupied and onlooking behaviors (passive watching of other children) in unfamiliar social situations (Coplan et al., 1994), as well as higher reticence during the first day of preschool (Coplan, 2000), and several months into the school year (Coplan, et al., 2004) relative to other children. Shyness was also predictive of adjustment problems during development, including poorer social competence during the preschool years (Coplan, Findlay, & Nelson, 2004) and loneliness, lower self-worth, and social anxiety during childhood and into adolescence (Crozier, 1995; Eisenberg, Shepard, Fabes, Murphy, & Guthrie, 1998). As well, shy (i.e., socially conflicted) adolescents (Page, 1990) and adults (Santesso, Schmidt, & Fox, 2004) were more likely to use and abuse illicit substances compared with their non-shy peers. We have also reported that shy adults (i.e., socially conflicted) exhibit several distinct biological predispositions to psychopathology, including higher and more stable heart rates during social stress (Schmidt & Fox,

1994), greater relative right frontal EEG activity at rest (Schmidt, 1999), and a higher prevalence of mixed-handedness (Spere, Schmidt, Riniolo, & Fox, 2005) than their non-shy peers. In the next section, we review work from our laboratory over the last 20 years that has been directed toward understanding the neurophysiological correlates and bases of shyness over the course of development in children and adults using an approach–avoidance conceptual framework.

On the Interplay between Theory and Method: Frontal EEG Asymmetry and Social Behavior

The search for psychophysiological correlates and substrates of shyness and related constructs has a long and rich history in the adult personality literature (Eysenck, 1947, 1957, 1967; Gray, 1970, 1982; Gray & McNaughton, 2000) and has advanced over the years with improvements in central and peripheral psychophysiological methods (Cacioppo, Tassinary, & Berntson, 2007; Schmidt & Segalowitz, 2008). Eysenck argued that cross-partitioning orthogonal dimensions of neuroticism and extraversion accounted for most of the individual differences in personality (see Zelenski, Sobocko, & Whelan, Chapter 11, this volume). Shyness emerged from an interaction of neuroticism and extraversion. Individuals who were high on neuroticism and low on extraversion were characterized by social shyness. Influenced by Pavlov's concepts of excitation–inhibition and mobility, Eysenck overarched introversion–extraversion with excitatory and inhibitory processes, respectively, while neuroticism was aligned with mobility (see Corr & Perkins, 2006). Eysenck's (1967) later theory of personality was based on attempting to localize the concepts of excitatory–inhibitory balance and mobility to cortical arousal and limbic activation. Shy individuals were presumed to have lower thresholds for arousal in mid- and forebrain areas as well as higher overall global cortical arousal.

There were, however, limitations to Eysenck's theory. First, much of the empirical evidence for his theory was derived from peripheral psychophysiological measures (Zahn, 1986). Studies that used central EEG measures to index global cortical excitability or arousal to test his theory have been mixed (Gale, 1983; Gale, Coles, & Blaydon, 1969; Gale, Coles, Kline, & Penfold, 1971). As well, Eysenck's model suffered from the same problems as many other arousal models of the day: arousal was a general term that lacked specificity.

Another influential theory regarding the psychophysiology of personality was developed by Jeffrey Gray (1970, 1982, 1987, 1994; Gray & McNaughton, 2000) some 40 years ago and still plays a dominant role today. Gray's reinforcement sensitivity theory suggests that there are three independent systems: *fight–flight–freeze*, *behavioral activation (BAS)*, and *behavioral inhibition (BIS)*. Each of these systems is associated with distinct neural circuitry and associated behavioral strategies. Unlike Eysenck's model, Gray's theory has more specificity in predicting different types of emotion. For

example, although fear and anxiety are often interrelated, they are independent – fear is considered to be more stimulus bound and anxiety more related to generalized anticipatory processes. Gray's model allows us to make specific predictions as to where in the brain this separation might exist and the hypothesized differences in neurophysiology that might underlie their independence. Gray's model has been particularly helpful to understanding different psychiatric disorders in which fear and anxiety are known to play different roles.

In Gray's model, a person who is shy would be high on BIS and BAS dimensions. Gray's BIS and BAS hypothetical motivational dimensions have been measured psychometrically (Carver & White, 1994), and there have been attempts to measure electrocortical activity in individuals varying on BIS–BAS levels (Sutton & Davidson, 1997; see the succeeding text for additional discussion).

Although not specifically organized around an approach–avoidance framework, the theoretical work and empirical findings of Hans Eysenck and Jeffrey Gray, nevertheless, have been very influential to current-day thinking regarding the neurophysiology of personality in general and shyness in particular. We now turn to discuss one brain-based model and corresponding electrocortical measures that have been guiding our research program on shyness and related behavioral profiles for the last 20 years, and that was very much influenced by these earlier theorists. We also provide a review of the empirical findings of studies of adults and children and some clinical populations generated from this body of work drawn primarily from our laboratory while also highlighting the work of others in the area.

It is important to point out that there are many different brain-based models of personality and individual differences in affective style and a range of methods have been used to index brain activity in socially anxious profiles, including fMRI and other electrocortical measures in addition to those described in the succeeding text (see Miskovic & Schmidt, 2012, for a review). For example, we (and others) recently have examined fMRI responses (Beaton, Schmidt, Schukin, & Hall, 2010; Beaton et al., 2008b, 2009), evoked electrocortical ERP responses (Jetha, Zheng, Schmidt, & Segalowitz, 2012), cross-frequency coupling of brain oscillations (Miskovic et al., 2010, 2011a, 2011b), and error monitoring (McDermott et al., 2009) in shy and socially anxious individuals. These methods/measures were based on approach–avoidance and other models (e.g., hypervigilance–avoidance, cortical–subcortical cross talk, information processing). For brevity, later we focus on an approach–avoidance brain-based model of emotion and continuous electrocortical measures indexed at rest and in response to social and affective challenge primarily in individuals who are shy but also in related constructs such as social anxiety and behavioral inhibition.

Frontal Activation Asymmetry and Emotion: An Approach–Avoidance Model

One contemporary brain-based model that is illustrative of the importance of the interplay between theory and method and organized around the approach–avoidance framework is the work of Richard Davidson and Nathan Fox. Their

model has provided significant insights into the neural basis of emotion and individual differences in personality and affective style and has guided our research program over the last two decades. Davidson and Fox (Fox & Davidson, 1984; see Davidson, 1993, 2000; Fox, 1991, 1994, for reviews) advanced a frontal activation model of emotion in which they argued that emotions are organized around approach–avoidance motivational tendencies. These motivational dimensions are differentially lateralized at the level of the anterior cerebral cortex. Approach-related emotions such as joy, happiness, and interest are subserved by the left frontal region. Avoidance-related emotions such as fear, sadness, and disgust are subserved by the right frontal region.

Around the time that Davidson and Fox were developing their model, significant technological and methodological advances in the acquisition and analysis of EEG data were being made. In the preceding decades, researchers who were interested in using EEG to examine brain–behavior relations resorted to the manual interpretation of analog EEG signals that were read off of chart drives, thereby increasing time to examine the data and errors in interpretation and limiting the ability to derive sophisticated quantitative estimates of signal energy. With the advent of faster and more powerful computers along with more efficient algorithms (e.g., fast Fourier transforms), it was possible to acquire and digitize electrical signals off the scalp at a speed that approximates real time and perform frequency analyses on the acquired signals using efficient user-independent data processing tools. This advance improved the reliability and temporal resolution of complex brain dynamics. Hypotheses regarding patterns of brain activity within particular frequencies and different brain regions could be examined in relation to behavior and different forms of experimental challenge.

In a series of early experiments, Davidson and Fox measured regional EEG alpha (8–13 Hz) activity indexed off the anterior scalp to index trait- and state-related properties of emotion and personality. Alpha constitutes a dominant electrical frequency in the human brain and has traditionally been conceptualized as a cortical idling rhythm (for modern interpretations of alpha activity, see Jensen & Mazaheri, 2010). As Berger originally demonstrated, alpha is highly synchronized during states of relaxation and becomes desynchronized (i.e., more activity) during states of acute stress or mental activation. Since the time of Berger, alpha has been known as “the activity-related” frequency band.

In a series of studies with adults (see Davidson, 1993, 2000; Davidson, Ekman, Saron, Senulis, & Friesen, 1990; Davidson, Jackson, & Kalin, 2000, for reviews) and children (see Fox, 1991, 1994, for reviews) using regional EEG measures, Davidson and Fox then went on to show that greater relative right frontal EEG activity was noted during the presentation of visual stimuli used to elicit negative emotion (e.g., fear, sadness, and disgust), whereas greater relative left frontal EEG activity was found during the presentation of visual stimuli used to elicit positive emotion (e.g., happiness, joy, interest). These same basic patterns of frontal EEG responses to affective stimuli have been noted across different sensory modalities over a wide

range of ages (see Fox & Davidson, 1987, 1988; Santesso, Schmidt, & Trainor, 2007; Schmidt & Trainor, 2001, for reviews). It is important to point out that in studies of children, alpha activity is characterized by a different frequency range (e.g., 4–6 Hz or 6–9 Hz) that is presumed to be psychologically and functionally equivalent to adult alpha.

Davidson and Fox (see Davidson, 1993, 2000; Fox, 1991, 1994) later theorized that patterns of resting or *tonic* lateralized alpha activity in the frontal hemispheres were predictive of individual differences in affective style and responses to stressful situations. Davidson coined the term “affective style” to refer to the broad range of variability in dispositional mood and affective reactivity that was apparent across individuals (Davidson, 2000). Individual differences in patterns of resting frontal activity were presumed to reflect differences in excitability of forebrain limbic circuitry involved in the maintenance and regulation of emotion. The frontal regions, particularly regions of the prefrontal cortex, are believed to be involved in the regulation of subcortical sites, such as the amygdala, a region known to be intimately involved in withdrawal-related negative affect (LeDoux, Iwata, Cicchetti, & Reis, 1988). For example, Davidson and Fox (1989) were able to predict which infants would cry in response to maternal separation on the basis of frontal EEG brain activity. In a series of studies with adults (Henriques & Davidson, 1990, 1991), Davidson and his colleagues found that people who were depressed and anxious exhibited greater relative right frontal EEG activity at rest.

It is important to note that to the extent that the pattern of resting frontal EEG alpha activity is *trait-like*, the metric should show acceptable levels of test-retest reliability within the same individuals at different testing points. Indeed, test-retest reliability of regional EEG alpha asymmetry and power measures has been well documented in nonclinical adult samples across time (McEvoy, Smith, & Gevins, 2000; Salinsky, Oken, & Morehead, 1991; Tomarken, Davidson, Wheeler, & Kinney, 1992), across different contexts (Schmidt, Cote, Santesso, & Milner, 2003), and in some clinical populations, including adults with schizophrenia (Jetha, Schmidt, & Goldberg, 2009a), depression (Allen, Urry, Hitt, & Coan, 2004; Vuga et al., 2006), and, most recently, social anxiety disorder (SAD) (Schmidt et al., 2012). It is also important to note that the Davidson and Fox model of frontal asymmetry and individual differences in emotion processing and affective style has been replicated in over 100 studies (Coan & Allen, 2004). However, there are alternative models relating regional brain asymmetries to differences in personality and emotion (see Heller, 1993).

We have used the frontal activation asymmetry model and measures of continuous regional EEG alpha activity to understand the neurophysiological correlates of shyness and related socially anxious profiles in adults, children, and some clinical populations. We now turn to a review of our work and related studies by other groups on the topic, but first it is important to point out a few definitional issues. One of the problems in the field is that researchers have used some terms interchangeably to characterize related constructs (see Rubin & Asendorpf, 1993, for a review). For example, shyness, social reticence, social anxiety, social phobia,

social isolation, social withdrawal, introversion, and behavioral inhibition are often used interchangeably, although they have different meanings, origins, correlates, and outcomes. Although full treatment of this debate and related issues is beyond the scope of the present chapter, for the purposes of organization and clarity, we first review later, within each section, studies that have used measures of shyness as conceptually defined earlier using an approach–avoidance framework. These studies are largely the ones conducted in our laboratory. We then discuss studies using related constructs (e.g., social anxiety, social phobia, social withdrawal). Finally, we review studies related to a more basic temperamental dimension of these constructs, namely, behavioral inhibition.

Adult studies

Using an approach–avoidance framework, we initially conducted two studies over a decade ago in which we were interested in examining whether we could distinguish among different types of shyness. We selected young adults for high and low shyness and sociability using the *Cheek and Buss shyness and sociability scales* (Cheek, 1983; Cheek & Buss, 1981). We then collected regional EEG measures collected at rest (Schmidt, 1999) and in response to an anticipated social interaction (Schmidt & Fox, 1994). We were particularly interested in the high-shy–high-social individuals as this group was characterized by an approach–avoidance conflict. We found that, while high-shy–high-social (i.e., conflicted) and high-shy–low-social (i.e., avoidant) individuals both exhibited greater relative right frontal EEG activity at rest, the former group was distinguishable from the latter in the amount of absolute activity in the left frontal region: the conflicted group had more activity than the avoidant group only in the left frontal site (Schmidt, 1999). This finding was interpreted in terms of greater mobilization of left-lateralized approach-related motivational tendencies in the conflicted group, for whom the desire to engage in social interactions was stymied by high levels of social fear.

In an earlier study (Schmidt & Fox, 1994) using an identical selection design, we failed to find differences in frontal EEG measures between the shy subtypes in response to an anticipated unfamiliar social interaction, although we did find that the conflicted subtype was distinguishable from other individuals on cardiovascular measures: the conflicted subtype exhibited higher and more stable heart rate in response to an anticipated unfamiliar social interaction than the other subtypes. Such a cardiac pattern is indicative of an increased sympathetically mediated stress response. More recently, Cole, Zapp, Nelson, and Perez-Edgar (2012) found that shy and socially withdrawn adults as measured with the *Cheek and Buss shyness scale* exhibited increases in right frontal EEG activity during social challenge which involved them watching a video of an anxious presenter compared to their non-shy counterparts.

We also examined patterns of resting frontal EEG alpha activity in individuals who varied in levels of social anxiety – a construct that is conceptually related to the personality trait of shyness (Beaton et al., 2008a). Regional EEG was measured

in a sample of nonclinical young adults selected for high and low social anxiety. We found that resting right frontal EEG asymmetry increased with increases in self-reported social anxiety, but this relation only emerged when we controlled for concurrent depression.

In addition to shyness and social anxiety, there have been other attempts to relate the pattern of resting frontal brain activity to related traits. A number of studies have examined the relation between continuous regional EEG alpha measures and self-report measures that index behavioral inhibition and behavioral activation in adults (Carver & White, 2004). These two dimensions are derived from Gray's theory discussed earlier and provide the basic motivational dimensions of the approach-avoidance framework and are conceptually linked to the frontal activation model. Davidson and his colleagues (Sutton & Davidson, 1997) initially found that greater relative left frontal EEG asymmetry characterized individuals high on the behavioral activation sensitivity and low on behavioral inhibition sensitivity. Still two other studies (Coan & Allen, 2003; Harmon-Jones & Allen, 1997) replicated the former pattern of greater relative left frontal EEG asymmetry and BAS sensitivity. Another study by Knyazev and colleagues (Knyazev, Slobodskaya, & Wilson, 2002) reported a relation between right frontal EEG activity and self-reported behavioral inhibition, but this relation was found not in the commonly used alpha frequency range, but rather the higher frequency ranges of beta and gamma activity.

With theoretical and methodological advances, researchers are now beginning to identify putative neural circuits underlying behavioral inhibition. An example of these advances is illustrated by a more recent study by Davidson and his colleagues (Shackman, McMenamin, Maxwell, Greischar, & Davidson, 2009). Davidson's group used dense array EEG and current source modeling to pinpoint brain circuitry subserving behavioral inhibition. Unlike early studies which used a limited number of electrodes (typically less than 32), dense array recordings involve more than one hundred sensors placed over the entire scalp surface, which provide increased spatial resolution of brain dynamics. Advances in computing and software capabilities and dense array recordings also provide for more sophisticated analyses of the EEG signal than was possible in the past, allowing investigators to infer the approximate sources of scalp-derived signals. Using these methods, Davidson and colleagues reported a link between right dorsolateral prefrontal cortical activation and individual differences in the behavioral inhibition system and, in doing so, provided a more specific account of the relation between particular brain regions underlying a general affective disposition.

Child studies

We previously examined regional EEG activity at rest and in response to social and emotional challenges in shy children during the preschool and early school-age years. In one study, we found that shy children displayed greater relative right

central EEG activity at rest and during the presentation of a fear-eliciting video clip than non-shy children at age 4. As well, shy females exhibited greater relative right mid-frontal EEG activity during the presentation of sad, happy, and fear video clips than shy males who displayed greater relative left mid-frontal EEG activity at age four (Theall-Honey & Schmidt, 2006). In a second study, we reported the shy children displayed greater increases in right, but not left, frontal EEG activity in anticipation of a self-presentation speech at age seven compared to their non-shy counterparts (Schmidt, Fox, Schulkin, & Gold, 1999).

In a series of studies with infants and children, Fox and his colleagues have reported relations between the pattern of frontal EEG asymmetry at rest and individual differences in social behavior. In one study, children classified at age four as either socially reticent or solitary passive during play with same-sex and same-age peers both exhibited greater relative right frontal EEG activity at rest compared to social children. However, only the socially reticent children scored higher on measures of fearful temperament compared to children in the solitary passive group (Henderson, Marshall, Fox, & Rubin, 2004). Fox's group (Fox et al., 1995) also found the socially withdrawn preschoolers exhibited greater relative right frontal EEG activity compared with socially outgoing and socially competent children. Interestingly, the authors used a novel methodological approach in which they examined the contribution of unique EEG power in each of the frontal hemispheres and found that differences were related to power in the left frontal hemisphere. In three other studies, Fox and colleagues reported that infants with a temperamental bias toward behavioral inhibition (a predictor of shyness) exhibited greater relative right frontal EEG activity as early as 9 months of age (Calkins, Fox, & Marshall, 1996). This pattern of right frontal EEG activity remained stable in behaviorally inhibited children through age four (Fox, Henderson, Rubin, Calkins, & Schmidt, 2001), and right frontal asymmetry moderated the relation between those infants classified as temperamentally inhibited at 9 months and social wariness at age four (Henderson, Fox, & Rubin, 2001).

Still other studies have reported associations between right frontal EEG activity and social withdrawal-related behaviors in older children selected for infant temperaments predictive of behavioral inhibition and followed longitudinally (McManis, Kagan, Snidman, & Woodward, 2002) and in infants as young as 6 months of age (Buss et al., 2003). For example, McManis and colleagues reported greater relative right frontal EEG activity in behaviorally inhibited children when they were 10–12 years of age. Buss et al. found higher basal and reactive cortisol levels (i.e., a stress hormone) were related to extreme right frontal EEG asymmetry, and this pattern of EEG during a withdrawal-negative affect task was related to fearful and sad behaviors during the first half of year one of postnatal life. Interestingly, Kalin and colleagues (Kalin, Larson, Shelton, & Davidson, 1998) reported relations between right frontal EEG activity and high cortisol levels in nonhuman primates, suggesting that these fear-related systems and their neural substrates are relatively conserved.

Clinical studies

There have been a number of studies directed toward using the frontal activation-emotion model and continuous measures of regional EEG to understand social behaviors in a range of clinical populations. Davidson's group reported increased right anterior EEG activity and heart rate during anticipation of public speaking in adults diagnosed with social anxiety (Davidson, Marshall, Tomarken, & Henriques, 2000; see Alden & Auyeung, Chapter 20, this volume). We also recently examined this model and measure in two different studies involving socially anxious populations. In one study, we examined whether the pattern of resting frontal EEG asymmetry was malleable in response to cognitive behavioral therapy (CBT) in adults clinically diagnosed with SAD (Moscovitch et al., 2011). We found that SAD adults exhibited greater relative right frontal EEG activity during pretreatment baseline and displayed greater relatively left frontal EEG activity posttreatment, suggesting that the pattern of frontal asymmetry is changeable in socially anxious individuals through intervention. Importantly, the pattern of resting frontal EEG asymmetry remained stable across two initial baseline assessments prior to the start of CBT (Schmidt et al., 2012).

In a separate study of children of parents diagnosed with SAD, we found greater overall frontal activity (a marker of stress vulnerability) in the high-risk offspring than normal control children despite the two groups not differing on measures of shyness (Campbell et al., 2007). This latter study suggests that resting frontal EEG activity may be a psychophysiological correlate of at-risk status prior to the manifestation of problem behaviors.

We close this section with two additional studies from other neuropsychiatric-disordered populations that have examined the relation between resting frontal brain electrical activity and socially anxious behaviors. In a recent study, we reported a relation between resting right frontal EEG alpha activity and shyness in a stable group of adult participants with schizophrenia living in the community (Jetha, Schmidt, & Goldberg, 2009b). This brain-behavior relation emerged only after controlling for positive and negative symptoms of the disorder, suggesting this relation may reflect a basic brain-personality mechanism whose integrity is preserved in the disordered brain. In another study, Sutton et al. (2004) reported that children with high-functioning autism who also displayed right frontal asymmetry exhibited more symptoms of social impairment than children who possessed left frontal asymmetry.

Summary and Limitations

The extant literature suggests that the frontal EEG alpha asymmetry model of emotion has been informative in understanding the neurophysiological correlates of shyness and related constructs in children, adults, and some clinical populations.

There are, however, several conceptual and methodological limitations that warrant discussion. First, the field has used terms and constructs interchangeably across laboratories and even within laboratory to describe the same phenomena. The field has yet to reach a consensus on the meaning and definition of shyness (see, e.g., Schmidt & Buss, 2010). This limits replication and prediction in the field. Second, notwithstanding treatment studies, the work reviewed earlier was correlational in nature. As a result, we do not know whether frontal brain activity is a cause of shyness and social withdrawal or a consequence of it. Future longitudinal work employing statistical methods such as structural equation modeling, hierarchical linear regression, and treatment studies might help elucidate causal pathways in brain–behavior relations. Likewise, the application of new neuroscience techniques, such as transcranial magnetic stimulation, to temporarily excite or inhibit specific neural circuits, may inform questions of causality. Third, we do not know the source of the electrocortical signals. EEG is typically measured at the level of the scalp, and there is considerable smearing and distortion of the signal as it permeates multiple layers of fluid, tissue, and bone. Source analysis is helping resolve some of these issues but still awaits rigorous psychometric testing. The use of convergent brain imaging techniques (e.g., fMRI, diffusion tensor imaging) in which deeper brain areas can be imaged and traced as well as intracerebral recordings in humans will help as will neurophysiological work with animal models in which a range of *in vivo* pharmacological, electrical, and mechanical manipulations are possible.

Conclusions and Caveats

In this chapter, we discussed the importance of integrating theory and method – past, present, and future – in the study of the neurophysiology of one form of solitude: shyness. This is an exciting time in the study of complex human traits such as shyness. Theoretical and methodological advances are occurring at an unprecedented pace, allowing a deeper understanding of the phenomenon.

With these advances, however, also come some cautionary notes. Today, we need to be careful that methodological use is not outpacing our theoretical questions and that we are not solely method driven. Methodological trends are usually transient phenomena, but the basic questions that motivate their use are more long lasting. Although the tools discussed in this chapter can provide a unique window into the complex brain dynamics that underlie individual differences in personality, many of the psychophysiological methods have not been normed, nor have their psychometric properties (e.g., test–retest reliability) been established.

It is also important to note that the origins and maintenance of shyness are undoubtedly multi-determined. There is likely no single gene, brain region or physiological pattern, and/or environmental condition and context underlying shyness. The brain is a paradigm example of a complex system, comprising some

100 billion neurons and 100 trillion synaptic connections. The scientific study of this organ can be undertaken from molecular, cellular, circuits, and systems-level approaches (Markram, 2012). Presumably each of these levels is embedded in its own environmental context (with the environment being conceptualized as both the external to the body and the internal environment of the body itself), embodies a particular physical shape and geometry, and is subject to emergent properties resulting from interactions within and across all levels and in response to internal and external events (see Schmidt, Fox, Perez-Edgar, & Hamer, 2009; Schmidt & Miskovic, 2013). Clearly, the field of personality science is restricted to making inferences about general statistical trends rather than generating specific, universal predictions, not because of limitations in our measurements but as an inherent property of organisms themselves.

Notwithstanding these considerations, as illustrated in this chapter, our understanding of shyness today has benefited from the theoretical and methodological advances made over the decades. The promissory notes left by early personality theorists like Allport and Murray are being realized. Future work on shyness is enriched by interdisciplinary research where multiple methods and levels of analyses are embraced and integrated.

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The Origins of Solitude

Psychoanalytic Perspectives

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In the domain of psychoanalysis, solitude, as a *state of being alone*, has been described as a fundamental human experience and has been ascribed a plethora of meanings (Buchholz, 1997; Modell, 1993; Storr, 1988). From the psychoanalytic standpoint, loneliness, as the *painful experience of being alone*, is the exclusive topic of a few well-known studies, published some decades ago (e.g., Fromm-Reichmann, 1959; Klein, 1963/1975b), and more recently (e.g., Quinodoz, 1991/1993), mainly by clinicians. An investigation into the origins of solitude from various psychoanalytic perspectives is appropriate and useful, mainly for the following three reasons: (i) psychoanalysis has placed much emphasis on the decisive role of early life experiences; (ii) in most psychoanalytic models a principal issue is the complex relation between the inner/private and the outer/social realm of human experience, an issue that is the essence of solitude; and (iii) the aforementioned relation is of great importance for psychoanalysis because, as a psychotherapeutic method aiming at uncovering the unconscious layers of personality, it is based on a two-person relationship.

In this chapter, various psychoanalytic views on the origins of this type of solitude and its developmental course during the first years of life will be discussed and evaluated, organized around four dimensions: fear of solitude and separation anxiety, solitary self, ability to be alone and necessity of being alone, as well as the companionable nature of solitude. Finally, conclusions and future directions will center around the paradoxical nature of solitude from the start.

Fear of Solitude and Separation Anxiety

“The great source of terror in infancy is solitude” is a famous dictum of William James (1890/1950, p. 418). Fear of solitude and separation anxiety are related to each other. Separation anxiety usually arises when there is a *loss* or the *threat of a*

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loss of an affective relationship with a significant other (Bowlby, 1973; Quinodoz, 1991/1993). This anxiety entails a fear of being abandoned and left alone. Therefore, from the very beginning of life, the ability to deal with separation anxiety is expected to reduce fear of solitude and vice versa: the outcome of the capacity to bear aloneness may be an equally tolerable anxiety over separation and loss.

The fear of solitude is considered to be a *universal* human fear. Sigmund Freud (1917/1963) connected anxiety with solitude and darkness in the following famous observation:

In children the first phobias relating to situations are those of darkness and solitude. The former of those often persists throughout life; both are involved when a child feels the absence of some loved person who looks after it – its mother, that is to say. While I was in the next room, I heard a child who was afraid of the dark call out: “Do speak to me, Auntie! I’m frightened!” “Why, what good would that do? You can’t see me.” To this the child replied: “If someone speaks, it gets lighter.” Thus a *longing* felt in the dark is transformed into a *fear* of the dark. (p. 407)

Solitude is related to the first anxiety experiences. As Bowlby (1973) remarked, the aforementioned observation of Freud “lies at the heart of his theory of anxiety” (p. 197). The prototype of anxiety is the *fear of separation* from loved ones, initially from the mother, especially in infancy, the period of absolute *helplessness*. In the Freudian view, anxiety emerges in aloneness and darkness, only because these two situations mean separation, and if it persists throughout life, it becomes *neurotic*. Regardless of the model of anxiety he adopts (i.e., anxiety as a transformation of undischarged libido or anxiety as a signal of a danger), Freud always associated anxiety with *traumatic* object loss. He wrote (Freud, 1905/1953) that “anxiety in children is originally nothing other than an expression of the fact that they are feeling the loss of the person they love” (p. 224), and in a later essay (Freud, 1926/1959a), “anxiety appears as the reaction to the felt loss of the object” (p. 137). In the course of development, anxiety is determined also by the threat of *losing the love of the object*. Freud (1926/1959a) distinguished between anxiety as a reaction to the danger of loss and the *pain of mourning* which is the reaction to the actual loss of the object. Thus, loneliness may be regarded as the *painful longing* for the lost object or for the loss of the love of the object.

The Solitary Self

Primary narcissism

Initially, Freud (1914/1957b) defined narcissism as the state in which the subject’s sexual object is its own body. From this state of *autoerotism*, the infant proceeds in unifying his/her body image and establishing the ego, cathected (i.e., invested) with libido (i.e., psychic energy associated with instinctual drives). Later, Freud

(1915/1917/1957a, 1921/1955b) introduced the concept of *primary narcissism* (following autoerotism). In this stage, the ego and the id, as well as the self and the object, are undifferentiated. Formation of object relations comes later in life. Then a regression to primary narcissism may occur, as a narcissistic identification with objects, a state known as *secondary narcissism*. Therefore, development is conceived as a gradual differentiation of the subject from the object, as the process of gradual cathecting objects (initially the mother), and as reduction of omnipotence. Ego libido and object libido are antithetical: an increase in the one means a decrease in the other.

Freud's essays do not provide a clear answer as to whether there is an initial objectless or pre-objectal stage and whether autoerotism and primary narcissism are distinct phases or primary narcissism is a state prior to the establishment of the ego. Laplanche and Pontalis (1967/1973) argue that primary narcissism is not an objectless stage, because by definition it includes a *mirror relation* (the mythical Narcissus was in love with his own image or the image of his twin sister). Other psychoanalysts viewed object relations as existing from the very beginning. Fairbairn (1952) postulated that libido is *object-seeking* (and not pleasure-seeking) from the start; Balint (1953) introduced the concept of *primary object love* during early infancy; Klein (1975a) accepted that the infant acknowledges the existence of the other right after birth; and Bion (1967) argued that the *absent breast inside* can become for the infant an *apparatus for thinking thoughts*. However, the *lack of differentiation* or the *initial a-dualism* between the subject and the object remains a basic premise of nearly all classic psychoanalytic theorizing.

In the Freudian theory, object relations emerge as a *necessity* of human life. The individual cannot remain in the isolated state of hallucinatory wish fulfillment. Freud (1914/1957b) wrote:

A strong egoism is a protection against falling ill, but in the last resort we must begin to love in order not to fall ill, and we are bound to fall ill if, in consequence of frustration, we are unable to love. (p. 85)

In his essay on civilization, Freud (1930/1961) discussed *voluntary isolation*. He claimed that, among the three sources of unhappiness – the body, the external world, and the human relations – the greatest *pain* always stems from the latter. "It is that we are never so defenseless against suffering as when we love, never so helplessly unhappy as when we have lost our loved object or its love" (p. 82). In order to avoid the suffering, we withdraw ourselves, and in the resulting state of peacefulness, we search for solutions – on our own. We may build a private world through, for example, working, creating in art and science, and enjoying art and beauty, or by surrendering ourselves to intoxicating substances. This withdrawal is a form of *defensive self-protection*, but it can also be a context of psychopathology. Therefore, Freud concluded that we should better strive to become members of human community.

The stimulus barrier

Freud (1920/1955a) first described the stimulus barrier as an innate organization that functioned as “a protective shield against stimuli” (p. 27) in the neonate. This protection against noxious, overwhelming stimuli is regarded as a more important function for the vulnerable neonate than the reception of stimuli.

Freud (1920/1955a) has ascribed a biological-neurological character to this metaphor. He regarded it as a sensory and perceptual threshold for incoming stimuli, an external membrane, under which other deeper layers exist. The stimulus barrier is the forerunner of an intermediary between the id and the external world, which later came to be called the *ego*. Therefore, the stimulus barrier is a threshold for internal stimuli too. Tension is reduced and homeostasis is maintained through this barrier.

However, this merging of biological and psychological concepts has led to some confusion about stimulus barrier (Esman, 1983). Daniel Stern (1985) was critical toward this concept because Freud had placed it in the framework of an initial narcissistic state, a conceptualization that Stern disputed. Other writers from the psychoanalytic field have reformulated the concept. According to Esman, the stimulus barrier is “an innate, selective, maturing screening mechanism” (p. 204), an active mechanism with a dual *self-regulatory function*: (i) to accept stimuli of certain kind and intensity and (ii) to ward off other stimuli, according to the degree to which these contribute to the adaptation of the organism. In this regard, the stimulus barrier seeks to preserve optimal stimulation (Esman, 1983; Gediman, 1971). This means that the infant both seeks and avoids stimuli. The avoidance of stimuli is facilitated through this innate, idiosyncratic organization and through the protection provided by the mother, who seems to function as a stimulus barrier herself (Benjamin, 1965; Khan, 1963). Search for stimuli serves attachment and avoidance of stimuli is the forerunner of defenses and individuation (Shapiro & Stern, 1980) – one could add here of the capacity for being alone as well. The stimulus barrier is regarded by many to be present throughout life and to evolve from a more passive mechanism into a *complex ego function* (Furst, 1978; Gediman, 1971).

A breach in the stimulus barrier, caused by the penetration of stimuli, may be called *trauma*. However, trauma can be the result both of overwhelming excitation and of stimulation deprivation. Both situations can be acute or chronic, as well as cumulative. Stimulus infatuation and stimulus hunger are the two sides of the same coin: whereas the individual wishes to reduce the effect of a stimulus, he/she continually searches for new similar stimuli. What is usually avoided is the human relation in favor of other stimuli. Thus, the individual’s inability to feel satisfied, *fed* when on his/her own may stem not only from deprivation and from a strong stimulus barrier but also from chronic overload and a weak stimulus barrier (Gediman, 1971). *Withdrawal*, in the form of a *better-be-alone-than* tactic, emerges then as a defensive response. In light of the aforementioned text, the simultaneous desire and aversion toward stimulation (i.e., craving to escape solitude while struggling to protect it) becomes a less puzzling paradox.

Normal autism and symbiosis

In her theory of separation-individuation, Margaret Mahler (Mahler, Pine, & Bergman, 1975) postulated that immediately after birth the infant is a profoundly alone and helpless being. In the first 2 months of life – the *normal autistic phase* – the infant lives in an *autistic shell*, which nevertheless does not lead to disorganization. The stimulus barrier, the omnipotence stemming from the satisfaction of biological needs, and the hallucinatory wish fulfillment (all Freudian views) protect the infant from the *awareness of isolation*. The controversial claim that a normal developmental phase should be equated with autistic disorder initiated an intense scientific dialog. In 1982, Mahler admitted that this is a phase of adaptation in extrauterine life, during which “the newborn has to achieve physiological homeostasis, that is, adequate inner regulation in synchrony with the vocal and gestural rhythms of the caregiver [...] each infant is *an active partner in the early dialogue*” (our emphasis; Bergman, 1999, p. 5). In a personal communication with Stern in 1983, Mahler also suggested that the autistic phase could have been named *awakening* (Stern, 1985, p. 235), a term very similar to Stern’s emerging sense of self. Pine (1994), Mahler’s collaborator, described a *relative autism*, which he considered as “primary attunement to internal physiological stimuli” (p. 10).

According to separation-individuation theory, from the second month of life, the infant’s experience is *social symbiosis*. The infant emerges from the autistic shell and enters a *dual unity*, that is, an undifferentiated state with mother, with “the delusion of a common boundary” (Mahler et al., 1975, p. 45). Omnipotent symbiotic fusion protects the infant from the *awareness of separateness* (which is different from separation) and thus from the premature frightening realization of aloneness. In the light of infant research, Pine (1994, 2004) proposed that this phase is critical for the experience of *moments of merger* (e.g., undifferentiatedness, boundarylessness) that can emerge during nursing (for a discussion of oneness experiences, see succeeding text). It is then that merging becomes highly significant, not only for the infant but for the mother as well; and it is then that merging reaches a kind of resolution, different for each mother-infant dyad.

Primary aloneness, noncommunicating self, and going-on-being

The work of D. W. Winnicott is a hallmark in the understanding of the roots and the developmental significance of solitude and is still influencing contemporary thought on this issue both in and out of the psychoanalytic field (see, e.g., Bollas’ (1989) notion of *idiom* and Ogden’s (1994) notion of *personal isolation* in the *autistic-contiguous position* during infancy). Winnicott (1988) introduced the existence of *essential loneliness* in the beginning of life, during a pre-primitive stage of development. It constitutes a paradox because it is an *aloneness of predependence*; that is to say, the infant is not aware of his/her absolute dependence by the caretaker. This notion also implies narcissism, the illusion of omnipotence, and mother-infant

undifferentiatedness. Aloneness is regarded as *a primary state*, not as *the primary state*, which means that other possible primary states are not excluded (Eigen, 2008), such as companionship and sharing.

The *noncommunicating self* makes its appearance during the first year of life. Then a change occurs in the perception of love objects, from the *subjective object* to the *objectively perceived object*, that is to say, from a state of merging with mother to a state of separateness (Winnicott, 1965). With the use of symbols, the mode of communication changes from implicit and ambiguous to explicit and concrete. The infant leaves the area of omnipotence and enjoys communication. But at that time exactly, there exists an absolutely private core, which does not communicate and always remains isolated, because it *has to remain isolated*. Winnicott wrote:

Although healthy persons communicate and enjoy communicating, the other fact is equally true, that *each individual is an isolate, permanently non-communicating, permanently unknown, in fact, unfound*. (Winnicott's emphasis, p. 187)

It is the game of hide-and-seek in which "it is joy to be hidden but disaster not to be found" (Winnicott, 1965, p. 186). This mode of communication is not nonverbal, but it is forever silent, personal, an indication of *aliveness*. This view seems to reflect existential aloneness.

Winnicott (1965) also stated that health means (i) being able to use noncommunication in the sense of silent or secret communication with the subjectively perceived objects and (ii) the ability to lose contact with the commonly shared reality with the aim of feeling real and of preserving and enhancing the *true self*. Indeed, the more this *incommunicado element* (Winnicott, 1965) is under the threat of being revealed and altered, the more primitive are the defenses we employ to deal with this threat, because the protection of the innermost being facilitates the establishment of the true self. In this regard, Winnicott can be viewed as a predecessor of later researchers who investigated the beneficial aspects of solitude (for a review, see Coplan & Bowker, Chapter 1, this volume).

Every human infant has a true self, expressed through *spontaneous gesture* and recognized by the *good-enough mother*. Mother *mirrors* the infant, that is, responds with sensitivity and reliability to his/her needs, thus facilitating the development of the true self in the infant (Winnicott, 1971). The infant feels alive, a *psychosomatic entity*, with *continuity of being* (Winnicott, 1958, 1965). This fortunate state is reflected in the infant's capacity to be creative and use symbols (e.g., language, symbolic play, dreaming), which form the content of his/her time spent alone.

In the beginning of life, the environment responds to the infant's needs, and therefore the infant experiences a state of undisturbed isolation, a state of *going-on-being*. The infant leaves this isolation to express his/her spontaneous gestures and explore the environment, without losing his/her sense of self. But if the environment *impinges* on the infant's existence (e.g., by intruding or demanding compliance or by inconsistent responding), the experience of being, without

having to react continually to external stimulation, is broken. The infant returns to his/her isolated state, but this isolation is now comprised of primitive defenses. A *split* occurs between the true self, which needs to be protected from being violently altered by the environment, and a *false* or *compliant self*. The individual is incapable both of being with himself/herself because of the terror of isolation and of developing genuine object ties because the true self, not enriched by lived experience, must remain hidden (Winnicott, 1958).

Winnicott (1965) later becomes more explicit in distinguishing the modes of *not-communicating*. Apart from simple not-communicating (a kind of resting), there exist modes of active or reactive not-communicating. *Active not-communicating* is a form of voluntary (potentially beneficial) aloneness, whereas *reactive not-communicating* is a pathological state, the result of environmental impingement. Therefore, it is one thing to be *isolated*, that is, acknowledging and preserving this core of self, and another thing to be *insulated*, that is, falsely living in a world devoid of real objects. And Winnicott beautifully portrays this private universe:

...we have to recognize that aspect of health: the non-communicating central self, forever immune from the reality principle, and forever silent. Here communication is not non-verbal; it is, like the music of the spheres, absolutely personal. It belongs to being alive. And in health, it is out of this that communication naturally arises. (p. 192)

Schema-of-being-with-the-self

The concept of the schema-of-being-with-the-self was introduced by Stern (1994, 1995). It was inspired by Winnicott's (1965) notion of going-on-being and from the work of Tustin (1990) with high-functioning autistic children. Stern (1994, 1995) introduced a layered model of development, which was later revised (Stern, 2000) to include three *preverbal senses of self* – emergent, core, and subjective (or intersubjective) – all emerging together and in interaction with each other (rather than occurring successively). Under the influence of infant research (e.g., Trevarthen, 1979), Stern supports the view of the *initial dualism*, which means that *intersubjectivity* is present from the beginning of life or that the self is with a differentiated other from the start and gradually develops new forms of relatedness.

Of relevance to solitude is the *self-in-the-presence-of-the-other* (Stern, 1985, 2000), which reminds us of Winnicott's notion of the capacity to be alone in the presence of the mother. It is a variation of the self-being-with-a-self-regulated-other and refers to the infant's experience of being alone, with his/her perceptions, feelings, thoughts, and actions, in the physical proximity of the caregiver. Even more relevant to the study of solitude is the *schema-of-being-with-the-self*, which represents the way of being with one's own, without other people around, "a state of mentally floating, alone" (Stern, 1995, p. 108), during which mental activities take place, but the individual does not pay attention to them.

Stern (1995) further argued that when we are alone, “something is always happening” (p. 109), such as intentionally prolonging a peaceful moment in order to keep a state of equilibrium. This is a *feeling shape*. This *moment* of lived experience is “a-way-of-being-with-the-self” or, better, “a-way-of-one-part-of-the-self’s-being-with-another-part-of-the-self.” It is as if the individual observes his/her complex mental operations from a distance, without interfering, without the need to complete a task and offer a product. The moment is *interpersonal* in two ways: (i) it is “a-negative-way-of-being-with-someone,” because it reduces consciousness and intrusions, and at the same time (ii) it is a way of a part of the self to be with another part of the self.

The schema-of-being-with-the-self has the same structure as the schema-of-being-with-an-other (Stern, 1995). Both schemas use the same kinds of constants, are built around feeling shapes, acquire a narrative form, and are characterized by interpersonal motives and functions. “These experiences structure subjective time, much as music can. Such structuring not only organizes but heightens the sense of existing” (Stern, p. 108).

Stern’s (1985) conception of intersubjectivity includes the acceptance (influenced by Winnicott) that some experiences are *non-shareable*, perhaps because they are never *attuned* with by the mother. Total psychic transparency leads to psychopathology, as much as the inability to share experiences leads to alienation and loneliness. From infancy, we live in between these two poles. Being-with-a-self-regulating-other means co-discovering a balance between self-disclosure and privacy. In ill health, the lack of attunement by the mother creates in the infant a feeling of uncanny aloneness. In Stern’s view, loneliness is felt *only if sharing has taken place and then has been lost*. Finally, with the emergence of *language* during the end of the first year of life (sense of a verbal self and other), the infant is more likely than before to experience the inability to share some experiences not only with others but also with the self. Paradoxically, language creates a *split* between the lived and the represented experience, thus contributing to estrangement, while simultaneously enabling the infant to share his/her state of “‘being-with’ others in intimacy, isolation, loneliness, fear, awe, and love” (Stern, p. 182). With the advent of symbolic function, the *domain of the private* is established between the false self and the true self; it contains all experiences that are not shared, but are not disavowed, which means that they are accessible by language and changeable through experience.

The Capacity to Be Alone

Fort-da

An 18-month-old boy, Freud’s own grandson, repeatedly plays the following games: he takes small objects and throws them in the corner, under the bed, or in other places while saying loudly the word *o-o-o-o* (from the German word *fort* that

means *gone*). He stands in front of a large mirror which does not reach to the ground and then crouches down to make himself *gone*. When his mother returns, he greets her with the phrase *Baby o-o-o-o*. While his father is in the front, he takes a toy, and if he is angry with it, he throws it away by saying *Go to the fwont* And during his mother's absence, he takes a wooden reel with a piece of string tied around it, and he holds the string and throws it over his cot; when it disappears, he exclaims *o-o-o-o* and then he pulls the reel again and greets its reappearance with a joyful *da (there)*.

These and other similar games are played by children all over the world, but it was Freud (1920/1955a) who interpreted the developmental observation of his grandson as *the child's great cultural achievement* (p. 15), which means that the child renounces instinctual satisfaction and becomes able to endure the mother's absence. By playing *peekaboo games* with her infant early on, every mother encourages the child's knowledge that her absence is followed by reunion. The child enacts the disappearance and reappearance of his/her mother and passes from the *passivity of the experience to the activity of the game* (Freud, 1920/1955a, p. 17). The *pleasure principle* seems to motivate these games. The infant gradually becomes able to *master* his/her pain of separation and even to find pleasure in this activity. In all these games the infant's ability to use *symbols*, to work through the experience and to remember mother and her reappearances, seems to be a fundamental way of coping with absence and solitude.

Oceanic feeling and oneness experiences

The concept of the oceanic feeling (or feeling of the eternal) was introduced by Romain Rolland and discussed by Freud (1930/1961) in relation to his belief in primary narcissism during infancy. He defined it as "a sensation of 'eternity', a feeling as of something limitless, unbounded" (p. 64) and as "a feeling of indissoluble bond, of being one with the external world as a whole" (p. 65). By definition, this feeling may occur in solitude as in the contact with God, nature, or art or in the most intimate connection with another human being, such as in love, where the sense of loneliness is expected to be eliminated. It may take the form of an *ecstatic* or *mystic* experience. In attempting to formulate a *genetic* explanation of this experience, as he called it, Freud (1930/1961) regarded the oceanic feeling as the result of the regression to the state of primary narcissism, where there is no differentiation of the inner from the outer, or a restoration of limitless narcissism, a view later adopted by Mahler (Mahler et al., 1975) in her description of merger experiences (as noted previously).

More recently, Storr (1988) argued that the ability to feel united with another presupposes a high degree of ego organization and integration. It is a vital and highly subjective experience, with permanent positive effects on the individual. Sometimes, such an experience may completely alter one's life. The Freudian view that the oceanic feeling is regressive (i.e., the illusion of return to an infantile

condition and to the bliss of a lost paradise) is dismissed. Storr considered creative activity, scientific discovery, childbirth, some forms of exercise, silence, and solitude itself as additional triggers for this experience. A similar view comes from the encounter of psychoanalysis and infant research: merging is possible only if an intact, *bounded sense of self* is first established (Lachmann & Beebe, 1989); merger- or fusion-like experiences reflect a capacity achieved only after the formation of a sense of self and other. The origins of both oneness experiences and the stable sense of self can be traced in early mother–infant matching, attunement, and repair of disruptions in attunement.

The capacity to be alone and the necessity of being alone

Winnicott's (1965) brilliant conception of the capacity to be alone is at the heart of his developmental and clinical theorization and at the center of psychoanalytic insight on solitude. It constitutes a *paradox*: "this experience is that of being alone, as an infant and small child, in the presence of mother" (p. 30). The mother identifies with her infant during the first month of life, a state called *primary maternal preoccupation*, and holds her infant, a state called *ego relatedness* or *object relating*. Gradually, the infant introjects this supportive mother and becomes able to tolerate and enjoy solitude. No one is ever truly alone, as there is always someone there, and only in this *sophisticated aloneness* can the child unfold his/her true self. This facet of Winnicott's conception can be seen as the *necessity of being alone*, although he did not explicitly make the distinction between capacity and necessity (Schacht, 2001). The necessity of being alone is described in statements such as the following (Winnicott, 1965): "It is only when alone (that is to say, in the presence of someone) that the infant can discover his own personal life" (p. 34). The capacity to be alone is regarded as a principal sign of emotional maturity and is not acquired by all individuals, whereas the necessity of being alone is universal.

Winnicott (1965) offered a comprehensive description of what we could call "solitude in the first years of life":

The infant is able to become unintegrated, to flounder, to be in a state in which there is no orientation, to be able to exist for a time without being either a reactor to an external impingement or an active person with a direction of interest or movement. (p. 34)

He also made the developmental claim that many individuals become able to enjoy solitude before the end of childhood and that some children *may even value solitude as a most precious possession* (Winnicott, 1965, p. 30). When discussing the noncommunicating self, he explicitly relates the ability for aloneness with the capacity to concentrate on a task, a major developmental aim during childhood (Winnicott, 1965).

The state *I am alone* passes through three developmental phases. The first one is the *I*, the phase of the integration or unit of the individual; *I* includes *everything else is not me* (Winnicott, p. 61, 1965). Next comes *I am*, which signifies that the infant

exists, is alive, although still vulnerable or even paranoid; he/she has a contact with reality (the not-me) and, through introjective and projective mechanisms, is able to share. *Sharing* means, among other things, that his/her existence is *recognized by others*. And finally, comes *I am alone*, which stems from the infant's awareness that a reliable mother exists for him/her. In this light, *loneliness* can be understood as arising in the *I am* phase (a close parallel to Klein's (1975a) depressive position). The infant, even under favorable circumstances, may experience failures in sharing, with the main failure being that he/she is not seen or recognized to exist or is not understood by the mother. Therefore, loneliness is lessened by the acknowledgment of his/her existence, by sharing itself.

A precondition for the development of the capacity to be alone is the transition from *object relating to object use*. Winnicott (1971) regards this transition as perhaps the most difficult developmental task, in as much as he viewed the capacity to be alone as a principal sign of emotional maturity. It requires that the subject places the object outside the subject's omnipotent control. In other words, it presupposes the recognition of the object's existence as a separate entity, as having a life of its own in the world of objects. For this procedure to be completed successfully, the object must survive from its destruction by the subject. Even in this fortunate case, "the price has to be paid," says Winnicott (1971, p. 90), without further clarifying what this price is (although in another point (p. 41) he refers to *pain*). One may assume that the price is the essential loneliness of human existence. Although it is an inescapable experience, loneliness can be partly dealt with by the creation of a shared world of objects, with which the subject can form mature interdependence and from their separate, distinct qualities of which the subject can be enriched.

The infant's capacity to be alone – a capacity that develops throughout life – depends largely on *the mother's capacity to be alone*. Primary maternal preoccupation, in the sense of the mother's complete devotion to her newborn baby, gradually subsides. Some failures of mother's adaptation to her infant's needs are inevitable, and this gradual *disillusionment* may be beneficial if it occurs according to the infant's developing ability to cope with frustration. The mother's past aloneness experiences, including her own memories of time alone and of being cared for, contribute to this solitude *à deux* (*shared aloneness*), which is described by Winnicott (1965) as follows:

Ego-relatedness refers to a relationship between two people, one of whom at any rate is alone; perhaps both are alone, yet the presence of each is important to the other. (p. 31)

Thus, a distinction between *withdrawal* and *benign aloneness* can now be made. Withdrawal is a defense against persecution fear or anxiety and against a potential danger of losing identification with that from which one withdraws. Benign aloneness reflects the tolerance of ambivalence and the ability to share solitude, that is, the ability to be alone in the presence of another person who is also alone and perceived to be alone.

Companions in Solitude

Transitional objects and transitional phenomena

Winnicott (1958, 1971) proposed a third *intermediate area of experiencing*, located between the internal/psychic and the external/shared reality and enriched by both of them – and closely linked with the capacity to be alone. This area is a *potential space* between the subject and the objects which are beyond the subject's omnipotent control. It is “a resting place for the individual engaged in the perpetual human task of keeping inner and outer reality separate yet interrelated” (Winnicott, 1971, p. 2).

In this area, transitional objects and transitional phenomena appear in the beginning of life, followed by the use of symbols and playing and finally by culture. The transitional object may be the thumb, a pacifier, a blanket, a teddy bear, a doll, or, later, a hard object (e.g., a toy car), which is steadily available to the child. The transitional phenomena are rather intangible states, such as the infant's (musical) vocalizations, rhythmic movements, and other habits and rituals, which usually appear at the time before sleep. Parents acknowledge the use of the transitional objects (e.g., they encourage their children to take it with them), which means that they allow for the experience of illusion. Transitional objects and transitional phenomena are considered healthy and universal. They constitute a significant part of time alone during infancy and toddlerhood, as well as a way of coping with the pain of loneliness even in childhood, as Winnicott (1958) claimed:

Patterns set in infancy may persist into childhood, so that the original soft object continues to be absolutely necessary at bed-time or at time of loneliness or when a depressed mood threatens. (p. 232)

Transitional objects and transitional phenomena are the first manifestations of *playing*, *shared playing*, and *creativity*. With advancing age, they lose their meaning and become diffused in the whole cultural experience. While playing, in the presence of the mother and in time alone, children *do things* in time and space and experience a sense of control over the external world. Playing means joining as well as separating. The child experiences a connection of the inner with the outer, but at the same time he/she achieves a *near-withdrawal state* (Winnicott, 1971), characterized by preoccupation and the sense of being lost without losing the identification with the mother object. The child is able to forget himself/herself in a formless, unintegrated state, because mother has been able to leave him/her alone and because she is available “when remembered after being forgotten” (Winnicott, p. 48).

The person and *cultural experience* form a unit. Creative playing, in the first years of life, is the precursor of the capacity to draw from cultural heritage and to contribute to it. Interests in the inanimate world may be regarded as a type of

object relations having an important self-regulating function (Eagle, 1981). Winnicott (1971) aptly describes the potential space as *an infinite area of separation* (p. 108), which can be filled by playing, so that pain, in other words separation itself, can be dealt with effectively. In this line of thought, separation anxiety reflects the denial of separation, the incapacity to be alone. Winnicott (1958) described the case of an 8-year-old boy who compulsively used a string to join things together in an attempt to deny his fear of separation from his mother, after having experienced her depression and some real separations from her. If the familial environment facilitates life in this area of potentially limitless opportunities for creativity, separation gradually becomes a *form of union* of the individual with the past, the present, and the future of his/her culture.

Representations of interactions that have been generalized and the evoked companion

Stern (1985) characterized ages 2–6 months as the most social period of life. During this time, the infant experiences a sense of *core self* and *core relatedness* and organizes his/her experience of *being-with-an-other*. This being-with-a-self-regulating-other is the source of the *representations of interactions that have been generalized* (RIGs), which are mental representations of generalized episodes of lived encounter with other people. Episodic memory plays a central role here. Every time such a representation is activated, the infant has in mind an *evoked companion*, which may be regarded as a protection against loneliness. Evoked companions can be activated all throughout life. Stern wrote:

...because of memory we are rarely alone, even (perhaps especially) during the first half-year of life. The infant engages with real external partners some of the time and with evoked companions almost all the time. Development requires a constant, usually silent, dialogue between the two. (p. 118)

In this sense, solitude is always populated. The infant is alone for a while, playing with a toy which the mother has previously animated or personified. This toy has become a self-regulating *person-thing*, a real companion in aloneness. The self is solitary and simultaneously social, as the infant's experience is "an I-experience with an other" (Stern, 1985, p. 115), and not a *we* or merger experience, whether the other is a real other or an evoked companion.

Imaginary companions

In the lives of many toddlers and preschool-aged children, there exists an imaginary companion. This companion is an invisible person or animal created by the child who talks and plays with it for a considerable period of time, as if this companion were real. It can also be a real personified object (e.g., a doll). Among the various

psychoanalytic interpretations of the developmental functions of this creation is the one that stresses its importance in the child's struggle against loneliness (Bender & Vogel, 1941; Benson & Pryor, 1973; Nagera, 1969). Neglect and rejection of the child; shift of mother's attention to something else, as, for example, happens when a sibling is born; and lack of real playmates before the child starts school are some common sources of loneliness and motives for the creation of an imaginary companion. A deficit in the child's life, a more or less serious narcissistic trauma, is compensated by this fantasy. Following is the narrative of a 10-year-old boy, an only child, who had experienced the death of a sibling, abandonment by his father, and neglect by his mother (Bender & Vogel):

I was playing and one day it seemed I had a brother and a sister – John and Mary. They come when I am very lonely, not when I am playing with the boys. They are very much like me. My brother is 9 and my sister is 10. They are very pretty. They play with me and only talk about games and where I was. They would ask why I have been bad all the time. They say if I will be bad all the time and never good they won't come again. They are a great comfort to me when I am all alone. (p. 59)

The imaginary companion is usually endowed with good qualities: he/she is kind, smart, strong, loveable, neat, obedient, and thus accepted by parents (Nagera, 1969). Through this creation, the child feels accepted and loved by parents during a period when infantile omnipotence subsides, the gradual loss of idealized parental images takes place, and mourning reactions appear. The imaginary companion can be viewed as a *narcissistic guardian* (Bach, 1971; Benson & Pryor, 1973), and as a *transitional self* (Klein, 1985) for all children, independently of the course of their development, as a means of alleviating common loneliness and benefiting from inevitable solitude.

Conclusions and Future Directions: The Primacy of the Paradox

Various psychoanalytic views on solitude in the sense of aloneness were presented and discussed. These views belong to different models, such as the Freudian drive/structure and the object relations model. In most of them, the infant is portrayed as a helpless, essentially alone, yet undifferentiated being. The main function of this lack of differentiation between the infant and the object world is to protect the former from the awareness of aloneness or of the absolute dependence from the caregiver, thus to help create a sense of omnipotence or illusion. The developing individual gradually moves from a more or less profound narcissistic state, a more or less impenetrable aloneness and encasement, to the internalization of good objects or relationships, so that he/she is able not to feel lonely when alone. It is reasonable that psychoanalysis, with its emphasis on a two-person relationship, would regard fear of solitude as an unbearable human fear. Some writers

recognize (although with notable variations) the existence of a private, more or less isolated, core of the self and the necessity or inevitability of detachment and aloneness experiences beginning in early infancy. Lack of respect for infants' solitude is an equally traumatic experience as relational deprivation in this age period. The right to dwell in "splendid isolation" (Freud, 1914/1957c, p. 22) and the perils of solitude deprivation are also acknowledged.

A distinction is made between active/voluntary and reactive/defensive aloneness. However, solitude as a defensive stance is a not so clearly depicted issue and warrants further insight. There are differences among theorists as to the infant's degree of activity or passivity exhibited in his/her solitary life. Solitude is, among other things, a retreat in front of the pain inherent in human relations. However, it is also deemed to provide a fertile ground for the cultivation of authenticity, creativity, and genuine relationships, although few psychoanalytic authors paid attention to this matter, as well as to the simple restorative function of solitude. Polarities or conflicts between opposites (e.g., pleasure-seeking vs. object-seeking motives, separateness vs. union, dependency vs. autonomy, personal uniqueness vs. similarity/conformity, privacy vs. sharing) form the core of several psychoanalytic interpretations of solitude and are treated from different viewpoints. Infancy is the sensitive period for the development of various types of symbolic function which, among other things, form the content of solitude and are the main, perhaps the only, route to the reduction of loneliness. Experiences – either illusory and regressive or active and progressive – of unity as presymbolic experiences and as a way of transcending loneliness are also built during early infancy in the relationship with the caregiver.

Nearly all classical psychoanalytic theorizing on solitude presented here is based on the conception of the initial state of the human infant as a more or less undifferentiated state – with the exception of Stern. However, Freud, one of the first who approached infancy with developmental intuition, was ambivalent regarding the infant's ability to recognize the object. In one of his earliest essays (Freud, 1895/1966), he articulated the existence of an other, a *fellow human being*, early in infancy. He argued that the relation with this being, the mother, who is the first object of love and hate, and the only source of help, is the context within which "a human-being learns to cognize" (p. 331). The psychoanalytic ambivalence toward the existence of the other in the beginning of life, which implies an equal ambivalence as to the possibility of experiencing aloneness and a variation in the nature of this aloneness during this age period, may be seen to reflect the paradoxical nature of solitude.

Solitude is a *multifaceted paradox*, much as the self is (Modell, 1993), a paradox which is evident from birth or even before it. Some facets of this paradox, as emerging from the psychoanalytic views discussed previously, are the following:

- The newborn and infant is an essentially alone but merged-with-an-other being.
- There is an initial narcissistic (solipsistic) state coupled with social symbiosis.
- We need solitary moments for tension reduction and object ties for excitation.

- We are alone in the presence of the other, initially the mother (in the most fortunate cases), we are lonely in the presence of the other (in the rather unfortunate cases), and we fear being alone with the other (in the most unfortunate cases);
- Experiencing real loneliness (and not the terror of aloneness) and enjoying solitude are achievements made possible only through bonding and genuine sharing;
- The mutual recognition and sharing of aloneness in the mother–infant dyad leads to a healthy relationship;
- A part of the self communicates with other parts of the self;
- A variety of companions inhabit alone space and time;
- Separateness, absence, and loss are the preconditions for symbolic connectedness;
- The protection of a private core self is an outcome and a prerequisite of genuine relations;
- One can be with the other only through the capacity to be an integrated self.

To the question of whether the initial human condition is one of aloneness or connectedness, of monadic or dyadic existence, recent, research-informed psychoanalytic views (e.g., Mitchell, 1997; Ogden, 1994) reply that it is *both*. A contemporary psychoanalytic suggestion (Eagle, 2011) for an integration of drive-reduction and object relations theory provides additional support to the fact that solitude is a need for achieving self-regulation and inner pleasure *and* a catastrophe when it opposes our inborn readiness for relatedness. It would appear that accepting the paradox of solitude and its dialectical tension – a paradox which may never be completely resolved – is a difficult yet major developmental and epistemological achievement.

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Experiences of Solitude

Issues of Assessment, Theory, and Culture

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Solitude is not something that happens, it is a place where different types of experiences may occur – any of a variety of thoughts, feelings, and actions, both positive and negative. In this chapter, we (i) describe a set of rating scales for the assessment of solitude experiences; (ii) present a theoretical model for interpreting such experiences; and (iii) explore some of the benefits of solitude, not simply for individuals but for the cultures in which individuals live. For supporting evidence, we draw on both American and Chinese sources.

To begin, let us take note of a certain prejudice against solitude. Robert Kull (2008) cites authorities, ancient and modern, who have condemned solitude as both self-indulgent and irresponsible. The following observation by the eighteenth-century philosopher David Hume illustrates this point of view:

Celibacy, fasting, penance, mortification, self-denial, humility, silence, solitude, and the whole train of monkish virtues; for what reason are they everywhere rejected by men of sense, but because they serve to no manner or purpose; neither advance a man's fortune in the world, nor render him a more valuable member of society, neither qualify him for the entertainment of company, nor increase his power of self-enjoyment? We observe, on the contrary, that they cross all these desirable ends; stupefy the understanding and harden the heart, obscure the fancy and sour the temper. (quoted by Kull, 2008, p. 207)

Today, many such *monkish virtues* would rightly be rejected, but not all are associated with what we call *authentic solitude*. Episodes that fit Hume's description might better be termed *pseudo-solitude*. Authentic solitude is exemplified by the following description by Edward Abbey (1968). As a young man, Abbey worked for two summers as a seasonal park ranger at Arches National Monument in Southeast Utah, United States. This is a desert country, and at the time he worked there, the

site was relatively undeveloped: there were no paved access roads and few amenities on arrival; hence, few tourists. Abbey was alone much of the time. Near the beginning of his stay, he experienced moments when, as he put it,

I would sit down at the table for supper inside the housetrailer and discover with a sudden shock that I was alone. There was nobody, nobody at all, on the other side of the table. Aloneness became loneliness, and the sensation was strong enough to remind me (how could I have forgotten?) that the one thing better than solitude, the only thing better than solitude, is society. (pp. 96–97)

To alleviate his loneliness at dinner time, Abbey would take his meal outside by a fireplace he had constructed. There, sitting next to a burning juniper,

with more desert and mountains than I could explore in a lifetime open to view, I was invited to contemplate a far larger world, one which extends into a past and into a future without any limits known to the human kind. By taking off my shoes and digging my toes in the sand I made contact with that larger world – an exhilarating feeling which leads to equanimity. (p. 97)

These short passages illustrate some of the points we will expand on during the course of this chapter:

- 1 Our primary focus is on potential benefits of solitude, as opposed to loneliness. What tips the balance between positive experiences of solitude and immoderate loneliness? This question can be answered in one word: *choice*. What we call authentic solitude is typically based on a decision to be alone; in contrast, pseudo-solitude, in which loneliness predominates, involves a sense of abandonment or unwanted isolation.
- 2 The centrality of choice to authentic solitude poses a counterintuitive problem, for it seems to go against deeply seated social needs. Social living is one of the major biological adaptations of the human species. During hominin evolution, spanning roughly 6 million years, the solitary individual would not have survived for long. Natural selection has therefore provided us with an inborn aversion to being alone – the experience of loneliness.
- 3 Why, then, would any normal human being choose to be alone? Before addressing this question in detail, we take note of some misleading answers, most of which are spawned by a false dichotomy between the self and community. This dichotomy posits that the self cannot be relational without community; from this perspective individuals who choose to be alone might be considered perverted, since they have no need for social relations, or if not perverted, then doomed to perpetual loneliness, since their intimacy needs can never be satisfied in solitude.
- 4 The counter answer we propose is that the self is relational to its core (Gergen, 2009). Empirical support for this claim comes from many sources, including loneliness studies. For example, Epley and colleagues found that lonely

participants, in comparison to non-lonely ones, gave higher anthropomorphic ratings of nonhuman objects, even mechanical gadgets (Epley, Akalis, Waytz, & Cacioppo, 2008). Under the spell of the false dichotomy between self and community, anthropomorphizing such as this may be interpreted as an illusion: “Many isolated people, unable to reach out to others, reach out instead to objects [filling] the void of human connection with inanimate ones” (Jaffe, 2008, p. 16). Jaffe’s observation may be correct, but the implication that anthropomorphism is always a false or inappropriate way of relating to the world deserves close consideration (for a more positive interpretation of anthropomorphism, see Sundararajan, 2009). To truly understand solitude, we need to start with an open mind and examine afresh the possibilities for communion while alone.

- 5 Starting with a clean slate, we reiterate the point that society is only one type of construction that humans make to serve their needs as relational beings; other types of constructions include virtual communities with God, with nature, and even, on occasion, with inanimate objects. This perspective allows us to appreciate how some individuals leave society for another community in a manner analogous to the habitat selection and niche construction of lower animals. From this perspective, immoderate loneliness may be understood as the distress associated with loss of habitat as a result of involuntary removal from society in lieu of which another niche – what (Clark, 2008) has called a “designer environment” – is not found or constructed.
- 6 By focusing on the cognitive structure associated with designer environments for authentic solitude, our investigation has practical implications. For example, it suggests the possibility of teaching relevant skills to those who are subjected to involuntary separation from others, thus alleviating some of the pangs of loneliness. Conversely, it suggests teaching a different set of skills to those who are too immersed in the marketplace, so that they can experience solitude vicariously, thus achieving some of the benefits of being alone without actual separation from others.

Stories We Tell Ourselves about Being Alone

Choice is not something that suddenly occurs within the mind or brain of a person. Choices have histories, they involve a self who chooses, they are sensitive to circumstances, and they lead to consequences. In short, behind every choice is a *story*.

Stories of solitude are not written afresh each time a person is alone. More important than individual concerns are the stories that cultures provide regarding the meaning and significance of solitude. A member of a monastic community, – Thomas Merton (1958), say, – has a different story to tell when alone than does an 18-year-old with no place to go on a Saturday night. A particularly common story today is of an elderly widow or widower living alone, without the financial resources or physical capacity to engage in meaningful

social activities. Unfortunately, the story is often true (see Wethington & Pillmer, Chapter 14, this volume). Few people have the human resources to admit, as Einstein did, "I live in that solitude which is painful in youth, but delicious in the years of maturity" (in Sneider, 1936, p. 27). When he wrote that, Einstein was still in his mid-50s. But the sentiment is true of many people of more advanced age, who have learned to find solitude delicious but who are reluctant to admit the fact due to cultural prejudices (Wood, 1986).

Winnicott (1958) suggested that individual differences in ability to be alone originate in infancy. Specifically, he posited that only those people who as infants were free to explore and independently occupy themselves in the security of their mothers' presence will as adults have the capacity to be alone. Building on Winnicott's insight, we may say that the capacity for solitude depends on the ability to preserve a sense of community while alone. During infancy, community may extend little beyond the mother, but with increasing age, a person's sphere of community becomes increasingly broad. People who are deprived of community, either through external circumstances or by their own behavior, for instance, schizoid personalities, suffer from loneliness and alienation. Authentic solitude, we suggest, depends on the ability to preserve community while alone or, more paradoxically, to forsake existing society for an ideal (virtual) community.

Needless to say, few people forsake the society of others by choice but may fall victim to circumstances beyond their control. Still, we always have a choice in the stories we tell, if not in the circumstances in which we find ourselves. That is one of the lessons Frankl (1984) tried to teach, after surviving years in Nazi concentration camps where opportunities for solitude were exceedingly rare.

Henry David Thoreau (1817–1862), who was a major influence on what has been called the American civil (i.e., nonsectarian) religion, observed that "The mass of men lead lives of quiet desperation" (1854/1966, p. 5). An exaggeration, perhaps, but it is undeniable that society exacts a toll in return for the advantages it offers; chief among that toll is diminished autonomy, which can lead to desperation, quiet and otherwise. To avoid such costs, Thoreau chose to live by himself for 2 years in the woods surrounding Walden Pond, near the town of Concord, Massachusetts. He wanted, as he put it, "to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived" (p. 61).

In short, solitude presents a challenge to be responsible to one's self. That, at least, is the common plot of the stories told by many who have sought solitude, whatever subplots they might add as further justification: for example, Admiral Richard Byrd (1938/1987), who chose to spend a winter alone at an isolated weather station in the Antarctic, a choice that almost cost him his life; Robert Kull (2008), who chose to spend a year alone on a remote, windswept island on the southern coast of Chile, in spite of having earlier lost a leg in a motorcycle accident; Cheryl Strayed (2012) who, following the death of her mother, divorce from her husband, and having dabbled in drugs and promiscuous relationships, decided to front the essential facts of life in a

manner that Thoreau could hardly have imagined, by hiking alone 1100 miles along the mountainous Pacific Crest Trail from Southern California to the border of Washington State; and many others who have chosen to spend extended periods alone but in less demanding circumstances (e.g., Rufus, 2003; Sarton, 1973).

Assessment: Types of Solitude Experiences

Accounts of solitude such as those by Thoreau, Byrd, Kull, Strayed, Rufus, and Sarton are informative, even inspiring. However, they involve exceptional individuals in unusual circumstances, and they all stem from a similar cultural background. Hence, generalizations to other populations and situations are problematic. The assessment of solitude, as distinct from loneliness or simply being alone, is especially problematic in children; as Galanaki (2004) has shown, distinctions such as these may not be fully developed until adolescence, if by then. To further research on typical occurrences of solitude among adults, it would be helpful to have a set of scales that assesses a wide range of experiences by ordinary people in ordinary situations.

Based on a review of the literature, Long, Seburn, Averill, and More (2003) identified nine common experiences of solitude, both positive and negative. Each type of experience was defined in terms of the dominant thoughts, feelings, and activities that best characterize an episode. For example, *solitude as problem-solving* was described as follows: "Aloneness provides the opportunity to think about specific problems or decisions you are facing, and you attempt to come to some resolution." Long et al. (2003) asked 320 university students (80% women) to rate the extent each type of solitude had an influence on their lives and the amount of effort they were willing to expend in order to have such an experience. These ratings were combined to yield an index of importance.

Factor analysis suggested that the nine types of solitude experiences could be aligned along three dimensions. Factor 1 was labeled *inner-directed solitude* because it was focused primarily on the self and its fortunes. The items (with factor loadings) that best defined this factor were *self-discovery* (0.73), *inner peace* (0.68), *anonymity* (0.64), *creativity* (0.58), and *problem-solving* (0.57). Factor 2 was a *loneliness* dimension, with loadings of *loneliness* (0.70) and *diversion* (0.67), the latter suggesting a defense against loneliness. Factor 3 was labeled *outer-directed solitude* because the items that loaded most highly on it focused on somebody or something outside the self, namely, *intimacy* (0.70) and *spirituality* (0.63). The intimacy item read, in part, "you feel especially close to someone you care about, for example, an absent friend or lover, or perhaps a deceased relative..."; the spirituality item extended the range of possible *intimates* to larger and more abstract units (e.g., a social group, humanity, nature, God).

The most common settings for Factor 1 (*inner-directed solitude*) and 2 (*loneliness*) types of experiences were living quarters, for example, a dorm room or apartment. *Spirituality* was the only type of experience to occur most often in the natural environment; it was also the least frequent type of experience.

Expanding the List of Solitude Experiences

As part of her master's thesis, Yao Wang (2006) expanded the list of solitude experiences used by Long et al. (2003) from 9 to 20 and explored possible differences in solitude experiences among Chinese and American university students.¹ Among the expanded list of experiences were items that, based on informal interviews with Chinese students and older adults, seemed more indicative of Chinese than American attitudes toward solitude (the item *emotional refinement* is an example about which we will have more to say shortly).

No direct equivalence exists between many words in English and Chinese. One reason is that English words are often abstract and general, whereas Chinese words tend to focus on concrete details. For instance, there are many Chinese terms denoting solitude, including (i) *being alone*, (ii) *dwelling alone*, and (iii) *hermitage*, that is, a lifestyle of dwelling alone. (In her thesis, Wang used (i) for her translation of "solitude.") We mention these variations because the root term for them is "du," which is also the root for "independence" and "uniqueness" in Chinese. As this root suggests, there is a strong tradition of individualism in China, contrary to the more commonly noted Chinese emphasis on collectivism. The contrast between individualism and collectivism is frequently overstated by Western commentators, but it tends to dissolve on closer examination. As we shall see, that is especially true in the virtual reality of authentic solitude.

Similar difficulties of translation apply to types of solitude experiences. In Chinese, for example, the item *emotional refinement* includes reference to feelings, moods, temperament, and character, because the Chinese notion of emotion refers to aspects of the whole person, not simply to an affective state. To take another example, consider the item describing spiritual experiences in the Long et al. (2003) study. In Chinese, spiritual pursuits are usually specified in concrete terms rather than in abstractions. In Wang's thesis, therefore, the *spirituality* item used by Long et al. was replaced by two items referring to *harmony* (a sense of unity with one's surroundings) and *self-transcendence* (surpassing everyday distinctions and concerns). These are two common aspects of spiritual experiences the world over (Huxley, 1985). It was expected that they would combine with the *intimacy* item to form a separate dimension, but, as explained in the succeeding text, that did not occur.

Dimensions of Solitude

A complete list of items describing the 20 types of solitude experiences is presented in Table 6.1. The items in Table 6.1 are condensed or paraphrased versions of the items used by Wang (2006). We are concerned here primarily with the major dimensions along which experiences of solitude may vary, based on factor analyses of the 20 items. Factor loadings and mean ratings for each item are also presented in Table 6.1.

Table 6.1 Condensed versions of twenty types of solitude experiences, organized by factors (factor loadings in parentheses). The desirability of each type of experience for an ideal episode of solitude was rated on a scale from 1 (“not at all desirable”) to 5 (“very desirable”)

Factor 1: Enlightenment^a

1. *Creativity* (0.75): Being alone stimulates novel ideas or innovative ways of expressing yourself (mean ratings: American = 3.70, Chinese = 3.81)
2. *Problem-solving* (0.67): You think about specific problems and plan a course of action (mean ratings: American = 3.40, Chinese = 4.10)
3. *Self-discovery* (0.64): You gain insight into your fundamental values and goals, unique strengths, and weaknesses (mean ratings: American = 4.12, Chinese = 4.14)
4. *Enlightenment* (0.63): You gain greater realization of life’s meaning and significance (mean ratings: American = 4.00, Chinese = 4.21)
5. *Emotional refinement* (0.61): Being alone provides an opportunity to cultivate and refine your emotions (mean ratings: American = 3.85, Chinese = 4.07)
6. *Self-enrichment* (0.55): You use the time to enrich yourself and to broaden your perspectives (mean ratings: American = 3.79, Chinese = 3.95)

Factor 2: Loneliness

7. *Loneliness* (0.69): You feel unappreciated, depressed, anxious, and lonely (mean ratings: American = 1.35, Chinese = 1.54)
8. *Boredom* (0.63): You wish for something to occupy your mind (mean ratings: American = 1.41, Chinese = 1.49)
9. *Alienation* (0.61): You feel isolated from the rest of society, left out, and forgotten (mean ratings: American = 1.77, Chinese = 1.83)

Factor 3: Freedom^b

10. *Freedom* (0.73): You feel free to do as you wish, without concern for social rules (mean ratings: American = 4.52, Chinese = 3.86)
11. *Daydreaming* (0.52): You engage in fantasies where you could do anything you desire (mean ratings: American = 4.00, Chinese = 3.54)
12. *Inner peace* (0.50): You feel calm and free from the pressures of everyday life (mean ratings: American = 4.62, Chinese = 4.11)

Factor 4: Relaxation

13. *Relaxation* (0.62): You use the time to rest or sleep and to recharge (mean ratings: American = 3.74, Chinese = 3.41)
14. *Recreation* (0.62): You engage in distracting activities, for example, watch television and surf the web (mean ratings: American = 2.36, Chinese = 2.45)

Factor 5: Intimacy

15. *Reminiscence* (0.77): You recall events you have experienced or people you have known (mean ratings: American = 3.64, Chinese = 3.33)
16. *Intimacy* (0.45): You feel especially close to someone you care about (mean ratings: American = 3.53, Chinese = 3.30)
- Items with similar but modest loadings on more than one factor
17. *Self-transcendence*: As in meditation, you have a sense of transcending everyday distinctions and concerns (mean ratings: American = 3.77, Chinese = 3.99)
18. *Harmony*: Everything seems interconnected with everything else; you are in balance with the world (mean ratings: American = 4.20, Chinese = 3.89)
19. *Heightened sensory awareness*: Sights and sounds seem magnified; you observe small things that you ordinarily wouldn't notice (mean ratings: American = 3.45, Chinese = 3.52)
20. *Longing*: Yearning for people or things beyond your reach at the moment (mean ratings: American = 2.22, Chinese = 2.82)
-

Note: Copies of the complete items in both English and Chinese can be obtained by contacting either author.

^aThis dimension was judged more desirable by Chinese than by American participants; $p < 0.01$.

^bThis dimension was judged more desirable by American than by Chinese participants; $p < 0.001$.

^cAlthough the factor loading for *intimacy* was only modest (0.45) in this study, it had the second highest loading on the dimension. The same item had higher loadings (0.70) on an analogous dimension in the study by Long et al. (2003) and in Wang's Study 2 (0.73 and 0.57 for the American and Chinese samples, respectively). Therefore, it is kept as the name for the dimension.

Source: Based on data from Wang (2006), Study 1.

Study 1

In the first of two studies, Wang asked 221 American university students (79% female) and 190 Chinese university students (45% female) to think of two episodes of voluntary solitude that they had experienced in the past year and two episodes of involuntary solitude.² The voluntary and involuntary conditions were presented in counterbalanced order. These conditions are not relevant to our present concerns, except as they served to remind participants of a variety of possible solitude experiences and familiarized them with the rating scales. To get at broader cultural norms, the students were next asked to describe what, in their opinion, would be an ideal episode of solitude, and they rated the desirability of each of the 20 types of experience for that episode. The 20 items were administered in three random orders.

For both Chinese and American participants, the ideal setting for solitude was the natural environment, for example, beaches, mountains, woods, or lakes (56% for Chinese and 51% for Americans). Only about half as many (i.e., roughly 25%) mentioned home or an apartment as an ideal setting, although these were the most common settings for actual (recalled) episodes. These results are consistent with those of Long et al. (2003), who found the typical setting for solitude to be one's place of lodging, the exception being spiritual experiences, which occurred primarily in the natural environment.

Exploratory factor analysis

A principal axis factor analysis with promax (oblique) rotation was performed separately on the Chinese and American data. The factor structure was similar in both cases; hence, the analysis was redone on the combined samples. The results yielded five factors, which were labeled *enlightenment* (Factor 1), *loneliness* (Factor 2), *freedom* (Factor 3), *relaxation* (Factor 4), and *intimacy* (Factor 5).

Study 2

In a second study, Wang (2006) asked 116 American (52% female) and 108 Chinese university students (48% female) to tell a story describing the thoughts and feelings of four characters (two male and two female) of ambiguous ethnicity. Each character was shown in one of four situations: alone at a beach, alone in a park, alone in a restaurant, and alone in a subway station. In addition to providing information about typical settings for solitude, while avoiding problems with translation, the pictures primed participants to think about solitude in general.

After responding to the pictures, participants were asked to read the list of 20 types of solitude experiences, in order to familiarize themselves with the range of items. They then went back and, starting from the beginning of the list, rated how much they would like to have each type of experience (1 = not at all, 5 = very much). The list was presented in three random orders.

Confirmatory factor analysis

A confirmatory factor analysis was performed on the data for Chinese and American participants separately. A five-factor model was not confirmed for either sample. This is because the two items that helped define Factor 4 (*relaxation* and *recreation*) were uncorrelated in both groups. A four-factor model (consisting of the original Factors 1 – *enlightenment*, 2 – *loneliness*, 3 – *freedom*, and 5 – *intimacy*) proved to be an acceptable fit for both Chinese and Americans.

The results of Wang's two studies are generally consistent with those reported by Long et al. (2003), with the following modifications. Long et al.'s *inner-directed solitude* is now split into two correlated ($r = 0.39$) factors: *enlightenment* and *freedom*. Long et al.'s *outer-directed solitude* corresponds to Wang's *intimacy* factor, but the latter is narrower in scope. *outer-directed solitude*, it may be recalled, included an item for *spirituality* as well as *intimacy*. As explained earlier, in Wang's studies, spirituality was split into two of its main components, *self-transcendence* and *harmony*, each assessed separately; neither of these items combined with the *intimacy* item to define a separate factor, but instead had low to moderate loadings on the *enlightenment* and *freedom* factors.

Nevertheless, we suggest that both Long et al.'s *outer-directed solitude* and Wang's *intimacy* factors represent a single underlying dimension of communal relationships, which can range in an ever widening circle from closeness to a specific other person (as in the *intimacy* item) to connection with one's family, social, or ethnic group and even more widely to humanity as a whole, the natural world, even to an abstract ideal (as implied by Long et al.'s *spirituality* item). Hereafter, we use the term *communion* to label this extended dimension of potential *intimacies*.

We will return to the structure of solitude experiences shortly, when we explore a cognitive theory of solitude. For the moment, our concern is less abstract. Specifically, we believe that the list of solitude items paraphrased in Table 6.1, together with the factor analytic results presented earlier, may provide a starting point for constructing scales to assess experiences of solitude in everyday situations, among ordinary people.

Differences between Chinese and American Participants

Cross-cultural studies serve two primary functions: identifying universal patterns or structures across cultures and revealing differences between cultures. The factor analytic data just described does both. We suggest that the three relational dimensions (*enlightenment*, *freedom*, and *communion*) reflect deeply rooted biological needs, and hence it is not surprising that both American and Chinese samples revealed a similar structure. The same is true of *loneliness*, experienced as unwanted separation from others.

Within this presumably universal framework, differences in emphasis between American and Chinese participants can be seen. In particular, in Wang's Study 1 the

Chinese participants scored higher than American participants on a combined score for the *enlightenment* factor (statistical significance $p < 0.01$), and the Americans scored higher than the Chinese on the *freedom* factor ($p < 0.001$).

In Wang's Study 2 the mean score for *enlightenment* was again significantly higher for Chinese than for American participants ($p < 0.05$). The mean of score for *freedom* showed the opposite pattern (i.e., Americans scored higher than Chinese), but the difference was minor and not statistically significant. Still, the results are in agreement with those of Study 1, which lends some confidence in their reliability.

Culture is like a stream that flows through time; data such as those collected by Wang capture momentary eddies in that stream. Later in this chapter, we draw on the Chinese tradition of hermitage to lend substance to possible cultural differences in solitude between China and the United States. We will then consider an even broader issue, namely, the potential contribution of solitude to culture – not any specific culture, Chinese or American, but to any society's culture.

Toward a Cognitive Theory of Solitude

Solitude can be approached from a variety of perspectives, for example, biological, developmental, and social, as discussed in other chapters in this volume. The approach we take is primarily cognitive, that is, the way people organize and make meaningful their experiences of solitude. Our analysis involves three basic assumptions: (i) we are never completely alone, at least not when solitude is authentic; (ii) authentic solitude is a creative experience that both requires and fosters emotional and intellectual innovations; and (iii) authentic solitude unfolds in a mental space or *designer environment* that is distinct from the physical and social realities of everyday life. Our major focus is on this last assumption, which incorporates the first two.

Designer Environments

Many infrahuman animals have special skills that allow them to construct niches in which to flourish; for example, spiders weave webs, birds build nests, and beavers construct dams. *Designer environments* are the cognitive counterpart of niche construction by animals. As described by Clark (2008), humans construct and inhabit cognitive niches which include "designer environments in which to think, reason, and perform as well as special training regimes to install (and to make habitual) the complex skills such environments demand" (p. 59).

In contrast to natural habitats which are grounded in physical and social reality, designer environments are found only in cognitive space. Known in Chinese poetics as ideal mental worlds (Sundararajan, 2004), designer environments involve a particular lifestyle and relevant cognitive and emotional skills. One skill that appears to be particularly important for solitude is the ability to be creative when faced with competing emotional demands. In the study by Long et al. (2003),

emotional creativity, assessed by the Emotional Creativity Inventory (Averill, 1999), was the personal variable most highly related to both inner- and outer-directed experiences of solitude (for more on emotional creativity and its assessment, see Averill, 2005; Averill & Nunley, 1992; Sundararajan & Averill, 2007).

The Cognitive Structure of Solitude

Designer environments have structure, but the structure differs depending on the psychological state under consideration. The designer environment for love, say, may differ from that for solitude. A model of the cognitive structure of solitude is presented in Figure 6.1. This model is based on the factor analyses discussed earlier, with a few name changes and additions drawn from other sources.

Starting from the top of Figure 6.1 and working down, we first distinguish between relational and non-relational dimensions of solitude experiences. Adopting the terminology from Long et al. (2003), we next divide the relational dimensions into two subcategories: inner-directed solitude (because the focus is on the relation to self) and outer-directed solitude (because the focus is on the relation to an other). As described earlier, Wang's (2006) data suggest that inner-directed solitude can be further divided into two correlated dimensions, enlightenment and freedom. The names of these two dimensions are somewhat arbitrary. The enlightenment dimension involves such features as creativity, self-discovery, and self-enrichment.

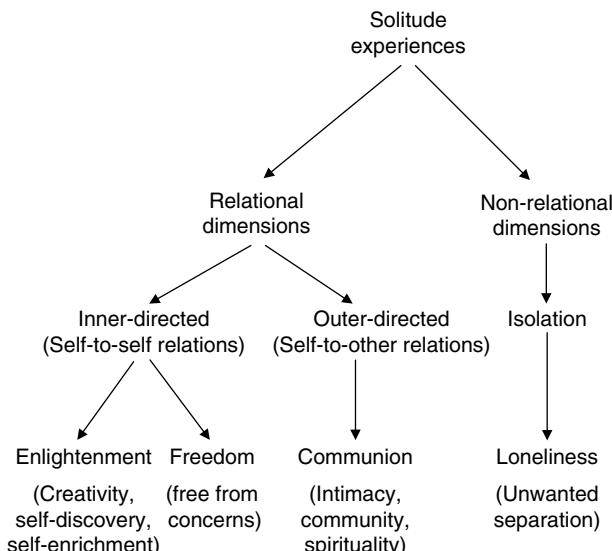


Figure 6.1 The cognitive structure of solitude. Solitude is authentic when relational dimensions (self-to-self and self-to-other) predominate, but not necessarily to the exclusion of non-relational concerns. In pseudo-solitude, loneliness predominates or is excluded entirely through defensive means.

With enlightenment comes empowerment or what is sometimes called “positive freedom.” The freedom dimension per se is mainly related to “negative freedom,” that is, independence from social concerns and obligations.

As explained earlier, the outer-directed solitude identified by Long et al. (2003) encompasses the intimacy dimension of Wang. This dimension can extend from closeness to another person who is absent to identification with a social group or community and to a spiritual feeling of oneness with the universe, God, or the Tao. When this dimension is combined with the two inner-directed dimensions connoting positive and negative freedom, respectively, we have what Sayer (1978) has called “real liberty,” by which he means the freedom of being “within bounds of the city but aloof from it” (p. 40). When solitude includes Sayer’s “real liberty,” one can be a hermit while still in the marketplace, a scenario much celebrated in the Chinese lore of hermits (Han, 1998).

Turning to the non-relational dimension of solitude, this is manifested most starkly by feelings of loneliness. At first, it might seem anomalous to include loneliness as a feature of authentic solitude, which is conceptualized as a largely positive experience. However, solitude typically is not a momentary state, and qualitatively different experiences may come and go during an episode, loneliness included. Although painful, loneliness may also be a source of benefit, motivating individuals to seek solutions to problems that might otherwise be allowed to fester. Only if loneliness becomes the dominant and seemingly insurmountable experience can an episode be considered an instance of what we have called *pseudo-solitude*. The opposite is also true; that is, if a person is alone for an extended period and never experiences moments of loneliness, we might suspect something is amiss, for loneliness upon separation is part of our human heritage.

Skills such as emotional refinement (Frijda & Sundararajan, 2007) and creativity (Sundararajan & Averill, 2007) are especially needed in coping with loneliness. A button sold in a souvenir shop in Taiwan reads: “Transform the grief of separation to nostalgia.” Nostalgia, which contains elements of longing, reminiscence, and intimacy, has been found to be effective in countering loneliness (Zhou, Sedikides, Wildschut, & Gao, 2008). It can be differentiated from other ways of coping with loneliness, such as recreation and diversion, in that nostalgia involves the psychological work of emotional transformation, whereas the latter do not.

Another essential skill for authentic solitude is the ability to decouple mental from physical and social realities. Freed from the demands of public life, solitude provides the opportunity for self-exploration, on the one hand, and the pursuit of an ideal community, on the other. To quote Sayer (1978) once again, “One flees society to create the true Society” (p. 20). This is a theme much celebrated in the Chinese tradition of eremitism, as will be discussed shortly.

To summarize this brief theoretical excursion, authentic solitude unfolds in a cognitive space characterized by three interrelated themes: an authentic self (enlightenment), independence (freedom), and ideal community (communion); these themes temper, and are tempered by, a fourth motif that is never far from the surface of consciousness – loneliness.

The Chinese Tradition of Eremitism

In the West, the lifestyle of the hermit has been that of an outsider. "In the more ancient civilizations of the East, however, the condition of the hermit has long been held to be the natural and proper culmination of all human life" (France, 1996, p. 114). France illustrates the difference between East and West with a brief discussion of Hinduism in India, where solitude is considered natural during the fourth and final stage of life. In this section we focus on the tradition of eremitism in China to illustrate the designer environment relevant to solitude. Although it has not been extolled to the extent of becoming one of the four stages of life as in India, hermitage has been consistently venerated in Chinese history (for documentation of the remnant of this tradition in modern China, see Burger, 2005; Porter, 1993).

According to Mote (1960), one defining feature of Chinese eremitism is educated individuals who refused to serve the state: "To bar one's gates and earn one's own living without reliance on the emolument of office, to display a lack of regard for the social status which could be attained only by entering officialdom, and to devote one's life to self-cultivation, scholarship or artistic pursuits made one a recluse" (p. 203). One indication of the importance of eremitism to Chinese culture is the fact that one third of classical Chinese poetry is by hermits and about hermits (Han, 1998).

The hermit's quest for the new habitat is at once a quest for genuine culture and an authentic self. As Mote (1960) points out, bona fide Chinese hermits were uncompromising men of principle, who saw in office-holding the chief threat to their ethical principles and whose refusal to serve was an expression of protest against the ruler and his government. The ideals for which the hermits were willing to give up the comforts of society and civilization, the financial security and social status procured by a career in public service, and much more fall within the three dimensions of authentic solitude: a true self (enlightenment), independence (freedom), and an ideal community (communion). These ideals have their roots in Taoism, as well as a return to nature, in the image of which all things are made and made perfect.

The ideal community envisioned by the Chinese hermit incorporates the best of two worlds: freedom from social constraints, on the one hand, and communion with like-minded others, on the other. This hybridization of freedom and communion results in a novel emotional landscape, in which both community and intimacy (not to mention freedom) are redefined.

In the absence of like-minded others, an ideal community is still possible for hermits, since they can find minds even in stones and rocks, thanks to their animistic heritage from Taoism (Rowley, 1974; Sundararajan, 2009). Consider the mutual gazing with the mountain depicted by one of the most famous hermits/poets in Chinese history, Li Po:

Never tired of looking at each other –
Only the Ching-t'ing Mountain and me. (Liu & Lo, 1975, p. 110)

Vicarious Solitude

Few people have the time or resources to live a life of hermitage. Nevertheless, it is possible to experience solitude vicariously. This, we suggest, is one function served by much Chinese art and poetry, a suggestion based on the notion of designer environments discussed earlier. Art is not an imitation of nature; it is an interpretation of nature as seen through the eyes of the artist. That interpretation is communicated to the viewer, provided both artist and viewer share similar cognitive structures. Thus, one need not retreat alone to the mountains in order to reap the benefits of solitude; hanging a painting on the wall or reading a poem in the quiet of one's room may have similar effects.

To illustrate, the Japanese physicist and Nobel laureate Hideki Yukawa (1973) was much drawn to the works of two famous hermits, Lao Tzu and Chuang Tzu, to the hermit/poet Li Po, and also to Chinese ink landscape paintings. A favorite theme of the latter, Yukawa observed, “is a waterfall deep among the mountains with a hermit’s dwelling standing close by and the hermit shown alone, gazing at the waterfall” (pp. 96–97).

To the extent that the mental world of the artist can be transmitted to a viewer, solitude is portable. Yukawa was especially well prepared in this regard. He was a man of two worlds, the empirical world, which he believed to be “unlimited, forever open, in ceaseless motion” (p. 80), and another world “that lay hidden in the deep recesses of his mind, a world “that was closed and self-sufficient, a world of eternal quietude” (p. 79). His love for this latter world started when as a child he used to amuse himself by making miniature landscapes. After making a garden out of clay in a cardboard box that his mother had given him, “I told myself that I lived in this small world that I had created, and the idea filled me with indescribable happiness” (p. 78).

Yukawa’s (1973) experience with the box garden is the prototype of an ideal mental world, visions of which, according to Chinese esthetics, constitute the quintessence of creativity (Li, 1997; Sundararajan, 2004). Yukawa (1973) shares a similar view. He wonders whether the world in which the scientist actually lives – a world that, as we quoted earlier, is “unlimited, forever open, in ceaseless motion” – accurately represents the scientist’s *ideal world* (p. 80). It does not, he suspects. Rather, a very different (counterfactual, i.e., ideal) world lurks in the scientist’s mind, a world of eternal rest, visions of which seem to be the driving force behind the quest in science for universal laws and structural elements behind the seeming chaos (a quest, parenthetically, that Yukawa also attributes to the ancient Greek philosophers).

Needless to say, not all portrayals of nature will facilitate vicarious solitude; key is the reconstruction of the designer environment of the hermit, say, in the mind of the observer. A painter capable of invoking a mental world of solitude can do so even without the figure of a hermit in the painting. This is one way that Chinese landscape paintings of the kind admired by Yukawa differ from their Western counterparts; they are not scenes of nature per se, no matter how expertly drawn

and esthetically pleasing; rather, they are representations of the hermit's mental world (for a discussion of the distinction between paintings with and without mental worlds, see Li, 1997).

One implication of vicarious solitude is that the impact of the Chinese tradition of hermitage is underestimated if we simply measure the size of the hermit population at any given time in history. That is true not just of the Chinese tradition but of *solitaires* in any culture. For vicarious solitude to occur, the essential element is communication between the artist and a potential audience. This is true even if the *artist* is nature itself, without a human intermediary or interpreter. In that case, it is up to individual observers to *design* their own environment, drawing on whatever cultural and individual resources they may have. Recall the passages by Edward Abbey (1968) quoted at the outset of this chapter and their potential impact on the predisposed reader.

Solitude as a Cultural Resource

The preceding sections illustrate some of the ways cultural traditions (e.g., Taoism) can influence the experience of solitude. We now consider briefly the reverse relation, that is, the influence of solitude on culture. There can be little doubt that such an influence exists. Many religious leaders have spent a significant amount of time in solitude, including Moses, Buddha, Jesus, Mohammed, as well as the founders of Taoism, Lao Tzu and Chuang Tzu. Many creative writers, artists, philosophers, and scientists have also relied on solitude to facilitate creative insights (Koch, 1994; Storr, 1988).

We do not suggest that solitude is a necessary or sufficient condition for cultural advancement, only that it is an important contributing factor. To illustrate, we draw on the work of the anthropologist and linguist Edward Sapir (1924/1956). Sapir was not specifically concerned with the influence of solitude on culture, but he made some distinctions that contribute to our understanding of the topic.

Most relevant, Sapir (1924/1956) distinguished between genuine and spurious (mass, imitative) culture and between culture and civilization. As he conceived it, genuine culture resides in aspirations for values that serve *surplus needs*, needs beyond the practical and material. Such values are closely related to the creative and spiritual dimensions of our lives. Civilization is the detritus of genuine culture. "While art lives, it belongs to culture"; Sapir asserted, "in the degree that it takes on the frigidity of death, it becomes of interest only to the study of civilization" (p. 113). In museums, we find artifacts of civilization, not genuine culture.

In Sapir's (1924/1956) view, civilization and genuine culture often work at cross-purposes. In fact, the more *advanced* a civilization, the more likely it is to have spurious culture, in which groupthink and imitative, mindless practices predominate, and the less likely it is to encourage authenticity, in the sense of being true to oneself. Simpler civilizations, therefore, can be expected to be more congenial to genuine culture.

Genuine culture, we suggest, has a deep connection to solitude. This is well illustrated by the eremitic tradition in China, discussed in the previous section. The most honored Chinese hermits have been individuals who sought solitude in order to preserve genuine culture at the cost of forsaking civilization. Their sacrifice, if sacrifice it be, has been society's gain, for the future of a civilization lies in genuine culture rather than unquestioning adherence to tradition.

In the West, monasticism has sometimes played a role similar to hermitage in the East, although the institutional support and ideological background have been very different (see, e.g., Cahill, 1995). Today, the Deep Ecology Movement, which envisions "humans living creatively in harmonious ecological balance with the Earth and its nonhuman inhabitants" (Sessions, 1995, p. 305), advocates a philosophy similar to Taoism and may have a like effect.

Concluding Observations

Until the modern period, opportunities for solitude have been greatly limited for the vast majority of people. For example, in colonial America young people were expected to establish a household as soon as they had the means to live independently. Within a household privacy was rarely possible, even in bed; and since households served multiple functions (educational, commercial, etc.), they were, in turn, under constant guidance and surveillance by the community (Gadlin, 1977). With the advent of industrialization, urbanization, and easy mobility, the situation has changed dramatically. According to the 2010 census, over 31 million Americans now live alone, comprising 27% of all households. We presume other modern societies are trending in the same direction. Some commentators view such trends with concern, suggesting an unraveling of the social fabric. Their concern is warranted. The solution, however, is not to limit individual choice, nor to encourage unwanted togetherness, but, rather, to provide the institutional support on which authentic solitude and genuine culture depend. That will not be easy, but the benefits could be considerable, for both individuals and societies.

Notes

- 1 Wang's thesis was directed by the first author (Averill); the second author (Sundararajan), a native Chinese speaker, served as consultant and back-translator for the solitude items. After receiving her master's degree, Wang returned to China. Her current address is unknown.
- 2 Depending on the circumstances, men and women might be expected to experience solitude differently. However, the ratings in Wang's studies were not situation specific, and whatever gender differences appeared did not form an interpretable pattern. Hence, they are not discussed further.

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Part II

Solitude Across the Lifespan

The Causes and Consequences of “Playing Alone” in Childhood

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A quick glance around a preschool classroom during free play will typically find children engaged in a wide range of activities. On this morning, in the center of the room, a group of children are playing *dress-up* together, immersed in a self-created make-believe world of talking animals. Off to the left, two children are engrossed in a board game, talking and laughing in between rolls of the dice. Other children are off by themselves, dispersed in various locations across the classroom. For example, one child hovers near the group of children playing pretend, watching intently, but not joining in. Another child runs haphazardly about the room, giggling and shouting while repeatedly banging two wooden blocks together. Finally, a third child plays quietly in the corner of the playroom, absorbed in the completion of a puzzle.

In early childhood, young children are just starting to learn the various social, cognitive, and emotional-regulatory skills required to engage in social interaction with peers (Coplan & Arbeau, 2009). Between the ages of 3 and 5 years, there is not only a steep increase in the frequency of group play and peer conversation, but social exchanges also become more coordinated and involve longer sequences and turns (Blurton-Jones, 1972; Eckerman, Whatley, & Kutz, 1975; Holmberg, 1980; Rubin, Watson, & Jambor, 1978; Rubin, Fein, & Vandenberg, 1983). Indeed, learning to “play well with others” is one of the primary social goals of early childhood (Hay, Caplan, & Nash, 2009). At the same time, playing alone remains a common and normative phenomenon in early childhood (Rubin, 1982).

When considering the playgroup described earlier, it would be tempting to conclude that the children playing with peers are more sociable and outgoing, whereas the more solitary children are more shy. Historically, many developmental psychologists, educators, and clinicians would have shared this opinion. However, *nonsocial play* is actually a complex and multifaceted construct. In this regard, the

important questions to ask are not just “is the child alone?” or “how often is the child alone?” – we must also consider “what is the child *doing* while alone?” and “*why* is the child alone?” As it turns out, young children may play alone for many different reasons – and these different reasons can be reflected in the structural forms of their solitary activities. Accordingly, whereas some types of behavioral solitude are normative and relatively benign, others may be markers for underlying socio-emotional difficulties. In this chapter, we highlight the importance of distinguishing between multiple forms of nonsocial play and describe the various putative “causes and consequences” of playing alone in early childhood.

Nonsocial Play: Concepts and Theories

In this chapter, we use the term *nonsocial play* to specifically denote the display of solitary activities and behaviors in the presence of other potential play partners (Coplan, 2000; Coplan, 2011). Accordingly, nonsocial play is context dependent, pertaining to engagement in solitary activities despite immediately available opportunities for peer interaction. In this regard, we are not referring to a child playing quietly alone in his/her room at home. We have also focused our empirical review primarily on studies that have employed observational methodologies, although some parent- and teacher-rated assessments have also been developed to specifically assess subtypes of nonsocial play (e.g., Coplan & Rubin, 1998; Fantuzzo, Coolahan, Mendez, McDermott, & Sutton-Smith, 1998; Hart et al., 2000).

The study of nonsocial play has a rich and diverse theoretical history. Its roots can be traced back to several somewhat divergent conceptual perspectives. For example, for over a hundred years, peer-relationship researchers have highlighted the importance of social interaction for children’s social, emotional, cognitive, linguistic, and moral development (e.g., Cooley, 1902; Mead, 1934; Piaget, 1926; Sullivan, 1953). Arising as an offshoot of this long-standing interest was the notion that children who frequently play alone may be missing out on many of the critical and unique benefits of peer interactions (Rubin, Bukowski, & Parker, 2006; see also Bukowski & Verroneau, Chapter 2, this volume).

Relatedly, developmental psychology researchers have long postulated that we should be concerned about the socio-emotional functioning of shy and socially withdrawn children (i.e., who tend to remove themselves from opportunities for peer interaction), particularly in school settings (Craig, 1922; Dealy, 1923; Lowenstein & Svendsen, 1938). Notwithstanding these early writings, for several subsequent decades, clinical psychologists continued to downplay the long-term significance of social withdrawal as a risk factor for maladjustment (Kohlberg, LaCrosse, & Ricks, 1972; Morris, Soroker, & Burruss, 1954; Robins, 1966). However, by the 1980s, results from seminal research by Kagan (e.g., Kagan, Reznick, Clarke, Snidman, & Garcia Coll, 1984), Buss (e.g., Buss & Plomin, 1984; Cheek & Buss, 1981), and Rubin (e.g., Rubin, 1982, 1985; Rubin, Hymel, & Mills, 1989) provided strong evidence of

the potential negative consequences associated with childhood shyness and social withdrawal (see Rubin, Coplan, & Bowker, 2009, for a review).

From a somewhat different perspective, a number of researchers in the 1920s began observing, classifying, and delineating social and nonsocial behaviors displayed in young children’s playgroups (e.g., Andrus, 1924; Bott, 1928; Lehman, 1926; Lehman & Anderson, 1928; Verry, 1923). Of particular influence was Parten’s (1932) taxonomy of social participation, which included several different nonsocial behaviors (e.g., onlooking, unoccupied behavior, solitary play) and helped establish part of the contemporary framework for distinguishing among subtypes of nonsocial play (Coplan, Rubin, Fox, Calkins, & Stewart, 1994; Rubin, 1982). The second part of this framework emerged from early studies focused on the structural components of play (e.g., Buhler, 1928; Stern, 1924). Piaget (1962) and Smilansky (1968) went on to describe a linear progression of children’s play forms, from functional/sensorimotor activities in infancy through constructive play and object exploration in toddlerhood and early childhood and to the eventual emergence of symbolic/dramatic play.

Finally, it is also important to acknowledge theorists who have promoted the positive aspects of solitude (e.g., Bates, 1964; Maslow, 1970; Winnicott, 1965 – see also Averill & Sundararajan, Chapter 6, this volume). Although this approach has focused primarily on the benefits of solitude for adults, some theorists have also espoused the positive value of solitude for children (e.g., Martlew, Connolly, & McLeod, 1976; Phillips & Sellitto, 1990). Of particular note for the present review is the notion that certain types of solitary play can serve important developmental needs for young children (e.g., Katz & Buchholz, 1999; Moore, Evertson & Brophy, 1974; Rubin et al., 1978).

As is evident from these divergent theoretical perspectives, nonsocial play in childhood can be conceptualized and characterized in many different ways. Indeed, the primary thesis of this chapter is that nonsocial play in early childhood is a heterogeneous phenomenon, with multiple subtypes that differ in their meaning and implications. In the following sections, we describe the three forms of nonsocial play that have received the most attention in the extant literature, with a particular focus on their underlying psychological meanings and potential implications for young children’s social, emotional, and cognitive development.

Reticent Behavior: “I want to play with you...but I am shy...”

One child hovers near the group of children playing pretend, watching intently, but not joining in. This child is displaying reticent behavior, which consists of onlooking (e.g., watching other children without joining in) and unoccupied behavior (e.g., staring off into space, wondering around aimlessly) (Coplan et al., 1994). This form of nonsocial play is quite common in early childhood, observed to occur on average about 20% of the time during free play among unfamiliar peers (Chen,

DeSousa, Chen, & Wang, 2006; Coplan et al., 1994; Perez-Edgar, Schmidt, Henderson, Schulkin, & Fox, 2008) and between 10% and 15% of the time during free play with familiar classmates at preschool or kindergarten (Bar-Haim & Bart, 2006; Coplan, Arbeau, & Armer, 2008; Coplan, Gavinski-Molina, Lagacé-Séguin, & Wichmann, 2001; Spinrad et al., 2004).

For most children, reticent behavior serves as part of a *bridge* between playing alone and playing with others. This transitional pathway proceeds from watching others play (i.e., onlooking) to playing next to – but not with – other children (i.e., parallel play) to social engagement (i.e., group play and peer conversation) (Bakeman & Brownlee, 1980; Robinson, Anderson, Porter, Hart, & Wouden-Miller, 2003; Smith, 1978). However, some children are not able to proceed beyond the initial *watching* stage. Indeed, from a motivational perspective, reticent behavior is conceptualized as a behavioral indicator of an *approach-avoidance conflict* in social contexts (Coplan, Prakash, O'Neil, & Armer, 2004). Asendorpf (1990) described this motivational conflict as arising when a child simultaneously desires (i.e., high social approach motivation) and fears (i.e., high social avoidance motivation) initiating social interactions. Thus, the frequent display of reticent behavior among peers is thought to reflect a child *trapped* in this conflict – interested in other children (e.g., watching, hovering) but unable to actively initiate social contact (Coplan, Prakash, et al., 2004). Simply stated, young children who most frequently display reticent behavior among peers end up playing alone because of social fear and anxiety.

In support of this notion, results from several studies have reported links between temperamental shyness (as rated by parents) and observed reticent behavior among young children in a variety of social contexts, including (i) the laboratory playroom among unfamiliar peers (e.g., Coplan et al., 1994; Rubin, Cheah, & Fox, 2001), (ii) the first day of preschool (e.g., Coplan, 2000), and (iii) several months into the school year (Coplan, DeBow, Schneider, & Graham, 2009; Coplan et al., 2008; Hastings et al., 2008; Spinrad et al., 2004). Reticent behavior is also likely to co-occur with observed displays of overt anxious behaviors such as hair pulling, digit sucking, and crying (Coplan et al., 1994; Coplan, Prakash, et al., 2004). Moreover, children who most frequently display reticent behavior are more likely to be rated as anxious by parents and teachers (Coplan et al., 1994; Coplan, Prakash, et al., 2004; Coplan et al., 2008; Fox, Henderson, Rubin, Calkins, & Schmidt, 2001; Henderson, Marshall, Fox, Rubin, 2004; Rubin et al., 2001).

Interestingly, some of the same indices of physiological arousal that are thought to underlie extreme shyness and social inhibition (see Schmidt & Miskovic, Chapter 4, this volume) have also been associated with observed reticent behavior, including greater right frontal EEG asymmetries and elevated levels of the stress hormone cortisol (Fox et al., 1995; Henderson et al., 2004; Perez-Edgar et al., 2008). The results from a recent twin study also suggest similarity in reticent behavior among monozygotic twin pairs (Guimond et al., 2012).

The frequent display of reticent behavior also appears to carry with it some negative consequences in the peer group. Even in early childhood, peers appear

to respond to the display of this form of nonsocial play with rejection and exclusion (Coplan, Girardi, Findlay, & Frohlick, 2007; Coplan et al., 2008; Nelson, Hart, & Evans, 2008; Nelson, Rubin, & Fox, 2005). Indeed, such negative peer responses have been observed to happen *in vivo*. Chen et al. (2006) observed quartets of previously unfamiliar 4-year-olds during unstructured free play in a laboratory playroom. Peers were more likely to directly respond to reticent behavior with acts of social rejection (e.g., overt refusal, disagreement) and less likely to respond with positive social behaviors (e.g., approval, cooperation). Perhaps as a result, reticent behavior has also been associated with negative self-perceptions in childhood (Coplan, Findlay, & Nelson, 2004; Nelson et al., 2005; Nelson et al., 2008).

Early signs of anxiety and peer adversity are both associated with school adjustment difficulties in early childhood (Buhs & Ladd, 2001; Buhs, Ladd & Herald, 2006; Ladd, Kochenderfer, & Coleman, 1996; Ladd & Price, 1987). Accordingly, it is perhaps not surprising that the more frequent display of reticent behavior has also been negatively associated with indices of cognitive competence and academic achievement (Coplan et al., 1994; Coplan, Gavinski-Molina, et al., 2001; Levy-Shiff & Hoffman, 1989; Lloyd & Howe, 2003). For example, Coplan et al. (2008) reported that observed reticent behavior in kindergarten was associated with less close teacher-child relationships, lower teacher ratings of child academic skills, and more negative child-reported perceptions of academic competence and school liking.

To summarize, for many children, aspects of reticent behavior may serve an adaptive function by allowing for a more gradual transition from solitary to peer group activities. However, children who most frequently display this form of nonsocial play appear to be in solitude because they are too shy and socially anxious to initiate and maintain peer interactions. In this regard, Coplan et al. (1994) characterized reticent behavior as being more akin to *being alone* as opposed to *playing alone*.

Solitary-Active Behaviors: “You don’t want to play with me?”

Another child runs haphazardly about the room, giggling and shouting while repeatedly banging two wooden blocks together. This child is displaying solitary-active play, a term used to describe the display of solitary-functional and solitary-dramatic behaviors in the presence of peers (Rubin, 1982). Solitary-functional behavior is characterized by repetitive sensorimotor actions, both with and without objects (e.g., skipping, banging blocks together) (Coplan et al., 1994; Rubin, 1982). It has been suggested that children engage in these types of behaviors for the physical sensations that they create (Piaget, 1962). Solitary-dramatic behavior (sometimes also referred to as solitary-pretend), on the other hand, involves engagement in pretense while playing alone (e.g., playing make-believe).

Solitary-active behavior is the least frequently displayed form of solitary play in early childhood, observed to occur only 2–3% of the time during indoor free play with peers (Bar-Haim & Bart, 2006; Coplan et al., 1994; Coplan, Gavinski-Molina, et al., 2001; Rubin, 1982). Moreover, this type of nonsocial play does not appear to be developmentally normative – only a small proportion of children are typically observed to engage in this type of behavior quite frequently (and most children do not display it at all), as opposed to many children engaging in this type of play infrequently (Coplan, Wichmann, & Lagacé-Séguin, 2001).

In contrast to the previously described link between reticent behavior and social wariness, solitary-active play in early childhood appears to be a behavioral marker for impulsivity and social immaturity (Coplan & Rubin, 1998; Coplan et al., 1994; Rubin, 1982; Rubin & Mills, 1988). For example, children who most frequently display solitary-active play tend to be (i) rated by parents as being more emotionally dysregulated (i.e., highly reactive, difficult to soothe), higher in activity, and less attentive; (ii) rated by teachers as being more hyperactive and distractible; and (iii) observed to more behaviorally disruptive and off-task when asked to complete cooperative tasks (Choo, Xu, & Haron, 2012; Coplan, 2000; Coplan et al., 1994; Coplan, Gavinski-Molina, et al., 2001). There is also some preliminary evidence suggesting that solitary-active play may reflect lower motor skills and sensory reactivity in early childhood (Bar-Haim & Bart, 2006; Evans, Nelson, & Porter, 2012). It has been suggested that increased rates of repetitive sensorimotor actions (i.e., solitary-functional behaviors) reflect an attempt to compensate for motor skills deficits by allowing the children to practice simple motor actions more frequently (Bar-Haim & Bart).

The social immaturity reflected by solitary-active behaviors is manifested in social contexts. As compared to their peers, children who frequently engage in solitary-active play also tend to display more rough play, poorer social and social-cognitive skills, and higher levels of aggression and acting-out behaviors (Coplan, 2000; Coplan, Gavinski-Molina, et al., 2001; Coplan, Wichmann, et al., 2001; Evans et al., 2012; Nelson et al., 2009). Children who most frequently engage in solitary-active play have also been rated by teachers as displaying more adjustment problems and tend to have poorer academic skills and attitudes toward school (Coplan, Wichmann, et al., 2001; Rubin, 1982).

Moreover, despite its low frequency of occurrence, solitary-active play appears to evoke negative responses from peers, including rejection (Hart et al., 2000; Rubin, 1982; Rubin & Mills, 1988). In this regard, it has been suggested that children who frequently display solitary-active behaviors may be actively isolated by their peers due to their immature behaviors (Rubin & Mills). Furthermore, their lack of ability to engage in successful social interactions with peers may lead these children to further retreat into solitude in response to the isolation. Thus, solitary-active play may be reflective of a child playing alone predominantly because other children do not want to play with him or her (see Nesdale & Zimmer-Gembeck, Chapter 8, this volume).

As a final note, it appears that *context* is particularly important in considering the implications of solitary-active play. The display of solitary-dramatic play (a component of solitary-active behaviors) might raise a *warning flag* when viewed in a crowded preschool playroom. However, a young child engaging in solitary-dramatic play while alone in her room (e.g., playing with dolls) would be considered a common and normative activity (Coplan, Wichmann, et al., 2001). Moreover, *sociodramatic play* (shared pretend play *with peers*) is widely considered to be a positive contributor toward young children’s cognitive, language, and socio-emotional functioning (Berk, Mann, & Ogan, 2006; Fisher, 1992; Fein, 1989). For example, Elias and Berk (2002) reported that whereas *solitary-dramatic play* was negatively associated with the development of self-regulation in their sample of preschoolers, engagement in *sociodramatic activities* predicted improvement of self-regulation in the classroom, particularly for those children high in impulsivity. This suggests that children who frequently display solitary-active play may uniquely benefit from learning to engage in increased shared pretend play with peers (Elias & Berk).

Interestingly, there is also growing interest in how the physical environment (i.e., indoor vs. outdoor) may impact upon children’s play (e.g., Hirose, Koda, & Minami, 2012). In this regard, there is at least some preliminary evidence to suggest that solitary-active play may have a somewhat different *meaning* when displayed on the playground. For example, solitary-active play appears to occur more frequently during outdoor free play as compared to indoors (Bar-Haim & Bart, 2006; Nelson et al., 2008), possibly because outdoor activities offer more opportunities to engage in *solitary-functional-type* activities (e.g., running, swinging, sliding) (Spinrad et al., 2004). Thus, in this context, such behaviors would be considered more appropriate. Nelson et al. (2008) offered some empirical support for this notion. In their observational study of solitary play on the playground, they found that *solitary-dramatic play* – but not *solitary-functional play* – was associated with indices of maladjustment (e.g., impulsivity, immaturity, and aggression). As such, solitary-active behavior on the playground may be more contextually normative and thus not expected to be associated with maladaptive outcomes (Bar-Haim & Bart, 2006; Spinrad et al., 2004).

Solitary-Passive Behaviors: “I’m ok playing by myself... for now...”

A third child plays quietly in the corner of the playroom, absorbed in the completion of a puzzle. This child is engaged in *solitary-passive play*, which includes *solitary-constructive* and *solitary-exploratory* activities (Coplan et al., 1994; Rubin, 1982). *Solitary construction* includes the manipulation of objects for the purposes of creating something (e.g., building with blocks, doing a puzzle), whereas *solitary-exploratory* behavior involves the examination and/or manipulation of objects for the purposes of gaining information (i.e., how does this object function?) (Rubin,

1982). Solitary-passive behavior is the most common form of nonsocial play in early childhood, observed to occur between 20% and 45% of the time during indoor free play (Coplan, 2000; Coplan, Gavinski-Molina, et al., 2001; Nelson et al., 2005; Rubin et al., 1978) and somewhat less frequently on the playground (Blatchford, Baines, & Pellegrini, 2003; Nelson et al., 2008; Spinrad et al., 2004).

We have argued that reticent behavior is reflective of shyness and social anxiety and that solitary-active play is a marker for social immaturity and peer exclusion. It has been suggested that solitary-passive play in the presence of peers might be indicative of unsociability in childhood (i.e., non-fearful preference for solitude) (Rubin & Asendorpf, 1993). However, as opposed to the other forms of nonsocial play, solitary-passive play does not appear to share a *one-to-one correspondence* with a specific set of psychological characteristics.

To begin with, based on its comparatively common frequency of occurrence in early childhood, solitary-passive play can be considered the most normative form of nonsocial play (Coplan, 2011; Rubin, 1982). Indeed, solitary-passive behaviors may serve some adaptive functions for young children. For example, regardless of the availability of opportunities for social interactions, many researchers and theorists have espoused the positive value of solitude in childhood in general (e.g., Henninger, 1994; Martlew et al., 1976; Phillips & Sellitto, 1990). Moreover, solitary play in the context of the early childhood classroom has also been specifically described as a *necessity* (Katz & Buchholz, 1999). The goal-directed nature of solitary-passive play makes it educationally valued at preschool (Moore et al., 1974; Rubin, Maioni & Hornung, 1976). In addition, the constructive component of solitary-passive play (e.g., involving manipulative materials) is thought to contribute to children's learning about spatial concepts, proportion, and mathematics (Ness & Farenga, 2007; Rubin et al., 1978). Accordingly, this form of nonsocial play may actually be reinforced and encouraged by teachers (Rubin, 1982; Rubin et al., 1978).

In support of this *positive and normative* characterization, observed solitary-passive play has been linked with (i) parental ratings of temperamental attention and emotional regulation (i.e., lower levels of negative emotionality, ease in soothing) and (ii) observations of task persistence and skill in object-oriented tasks (Coplan, 2000; Coplan & Rubin, 1998; Coplan et al., 1994; Coplan, Gavinski-Molina, et al., 2001; Rubin, Coplan, Fox, & Calkins, 1995). Similarly, results from several studies have indicated that this form of nonsocial play is largely unrelated to indices of psychosocial maladjustment in early childhood (Bar-Haim & Bart, 2006; Coplan, 2000; Coplan & Rubin, 1998; Coplan et al., 1994; Doctoroff, Greer, & Arnold, 2006; Lloyd & Howe, 2003; Nelson et al., 2008; Rubin et al., 1995).

The findings reflect the description of solitary-passive behaviors as a comparatively benign form of solitude (Rubin, 1982). As mentioned previously, it has been speculated that solitary-passive play also may be a behavioral marker of a *preference for solitude* (unsociability) in early childhood (e.g., Rubin & Asendorpf, 1993). However, although intuitively appealing, there is actually limited empirical support for this assertion (Coplan & Weeks, 2010). Indeed, in the few studies to

date in early childhood (Coplan, Prakash, et al., 2004; Harrist, Zaia, Bates, Dodge, & Pettit, 1997; Spangler & Gazelle, 2009), observed solitary-passive play was not found to be significantly associated with child unsociability (as assessed using parental reports, teacher ratings, peer nominations, and self-report).

Perhaps not surprisingly given its relatively common rate of occurrence, other findings further suggest that children may engage in solitary-passive play for different reasons (Coplan, 2011). For example, Henderson et al. (2004) argued that shy children may engage in solitary-passive behavior in the peer group context as a coping strategy in the face of feelings of social unease (Asendorpf, 1991). Other researchers have reported associations between solitary-passive play and negative peer responses (Coplan et al., 2007; Evans et al., 2012; Nelson et al., 2005; Spinrad et al., 2004). In this regard, it can be further speculated that some children are also retreating to solitary-passive play because they are being actively excluded by peers (Rubin & Mills, 1988).

So what can be concluded about the nature and implications of solitary-passive play in early childhood? It seems clear that the display of this form of nonsocial behavior in the peer group is quite normative (and may in fact serve adaptive functions) and, unlike other forms of nonsocial play, it does not appear to reflect underlying socio-emotional difficulties. However, children who most frequently engage in solitary-passive play may still warrant our attention going forward. As mentioned at the outset of this chapter, regardless of the reasons why they play alone, young children who frequently refrain from engaging socially with peers may *miss out* on the unique benefits of the peer group and, in later childhood, could come to lag behind in the acquisition and implementation of important socio-emotional and cognitive skills (Rubin et al., 2009).

Playing Alone: Mitigating Factors and Future Directions

In this chapter, we have presented *solitude* in early childhood as a multidimensional construct. Accordingly, we would argue that parents, teachers, and psychologists should not use the broad and undifferentiated construct of *playing alone* in peer contexts as a singular indicator of risk. Indeed, there is converging evidence to suggest that different structural forms of solitary play are associated with decidedly different socio-emotional outcomes during this age period. Moreover, the links between nonsocial play and outcomes are rendered further complex by additional mitigating factors. We briefly discuss some of these issues in this final section with an eye toward future research.

Developmental differences

The vast majority of research on the causes and consequences of nonsocial play have focused on young children (Coplan, 2011). It has been speculated that all forms of nonsocial play might become increasingly problematic in middle or later

childhood (Asendorpf, 1991; Rubin & Asendorpf, 1993), as expectations rise for both the frequency and quality of peer interactions (Rubin et al., 2009). In this regard, solitary activities may come to be viewed by peers as being increasingly *deviant* from social norms – and thus more likely to elicit negative peer responses such as rejection and exclusion (Rubin & Mills, 1988; Younger & Piccinin, 1989).

However, only a handful of empirical studies have included observations of solitary play beyond the preschool years (Blatchford et al., 2003; Coplan et al., 2013; Nelson et al., 2005; Gazelle, 2008; Spangler & Gazelle, 2009). Notwithstanding, there is at least some preliminary evidence to suggest that older peers do respond more negatively to all forms of nonsocial play.

For example, in a sample of children in grade 3 (age 8–9 years), Gazelle (2008) reported that both reticent behavior and solitary-passive play (almost no solitary-active behaviors are observed at this age) were associated with peer ratings of exclusion, rejection, and victimization. Similarly, in a sample of children in grades 4–6 (age 10–13 years), Coplan et al. (2013) recently reported that both observed reticent behavior and solitary-passive play were associated with a constellation of peer problems which included self-reports of loneliness, negative perceptions of peer relations, and victimization.

Further research is required to better elucidate the links between nonsocial play and indices of socio-emotional functioning beyond the early childhood years. These associations may remain complex, as it has been suggested that peers may also become increasing tolerant and accepting of *solitude* in later adolescence (Larson, 1997 – see also Bowker, Nelson, Markovic, & Luster, Chapter 10, this volume).

Gender differences

Future research should also explore possible gender differences in nonsocial play in childhood. It has been suggested that as compared to play in social contexts, while engaged in solitary play, young children are more likely to prefer gender-type activities (Goble, Martin, Hanish, & Fabes, 2012). However, to date, this topic has received relatively little specific attention.

There do not appear to be gender differences in terms of observed frequencies of the subtypes of nonsocial play in early childhood (e.g., Coplan, Gavinski-Molina, et al., 2001). It has been suggested that all forms of social withdrawal are viewed as less socially acceptable for boys than for girls because nonsocial behaviors in the peer group violate gender norms related to male social assertion and dominance (Rubin et al., 2009). In support of this notion, both shyness and unsociability have been reported to be more strongly related to peer exclusion and rejection for boys than for girls in childhood (e.g., Coplan & Weeks, 2010; Coplan, Prakash, et al., 2004; Gazelle & Ladd, 2003; Spangler & Gazelle, 2009).

Consistent with this notion, Coplan, Gavinski-Molina, et al. (2001) reported that among boys, solitary-passive behavior was related to internalizing problems, a lack

of social competence, and poorer academic achievement. In contrast, girls who were most frequently observed to display this same form of nonsocial play were less likely to have internalizing problems and demonstrated higher academic achievement. Nelson and colleagues (Hart et al., 2000; Nelson et al., 2005) similarly reported that both reticent behavior and solitary-passive play were more strongly related to peer rejection for boys than for girls.

The results for solitary-active behavior appear to be more complex. Coplan, Gavinski-Molina, et al. (2001) found that girls (but not boys) who engaged in the most solitary-active play displayed more behavior problems (i.e., anxiety, aggression) than their comparison peers. These authors speculated that because of their boisterous and *active* qualities, solitary-active behaviors may be more socially acceptable when displayed by boys as compared to girls. More recently, Nelson and colleagues (Nelson, Hart, Yang, Wu, & Jin, 2012) reported that solitary-active play was associated with physical aggression among boys but relational aggression among girls.

Most studies do not specifically report gender differences in the associations between nonsocial play and indices of socio-emotional functioning (Coplan, 2011). Moreover, relatively small sample sizes (inherent in this literature because of the resources required to conduct time-consuming behavioral observations) in these studies limit power to detect interaction effects involving gender. Future researchers also need to consider the combined effects of both child gender and age. It may be that gender differences in the implications of different forms of nonsocial play are more/less evident at different developmental periods.

Cultural differences

The majority of studies reviewed in this chapter have been conducted on samples of North American children. However, recent years have witnessed increased attention to the study of childhood solitude in non-Western cultures (Chen, 2010). There is at least some evidence to suggest that there may be some mean differences in the frequency of some forms of nonsocial play across cultures. For example, reticent behavior appears to be more commonly displayed in Asian versus Western cultures (Chen et al., 1998; Eisenberg, Pidada, & Liew, 2001; Farver, Kim, & Lee, 1995; Rubin, Hemphill, et al., 2006 – see also Teo, Stufflebam, & Kato, Chapter 25, this volume).

Perhaps a more interesting question pertains to potential differences in the meanings and implications of nonsocial play types across cultures. For example, shy and quiet behaviors have traditionally been viewed more positively in China (and other Asian countries), presumably because they reflect culturally valued traits such as group dependence, social restraint, and humbleness (Chen, Rubin, & Li, 1995; Chen, Rubin, & Sun, 1992). In support of this notion, Chen et al. (2006) reported that among Canadian preschoolers, peers were observed to respond to reticent behavior with greater peer rejection (i.e., overt refusal, disagreement).

In contrast, among Chinese children, the same behavior was more likely to elicit positive responses from peers (e.g., approval). Similarly, French et al. (2011) recently observed quartets of 7-year-old children in China and Canada interacting during play with a single attractive toy. Among the results, passive and reticent behaviors in the Chinese sample (but not the Canadian sample) were positively associated with peer liking.

Hart et al. (2000) examined associations between teacher ratings of nonsocial play and peer liking (as assessed through peer nominations) in samples of American, Russian, and Chinese preschoolers. Their results indicated that reticent behavior was most strongly associated with dislike across all three cultures. Two additional recent studies have also specifically explored links between different forms of nonsocial play and indices of socio-emotional functioning in Asian cultures. Nelson et al. (2012) reported that teacher ratings of preschoolers' solitary-passive, solitary-active, and reticent behavior were all negatively related to prosocial and assertive behaviors and positively related to distractibility, fearfulness, and depression (all also rated by teachers). Solitary-active play was also associated with teacher ratings of both aggression and victimization. Choo et al. (2012) examined the correlates of nonsocial play in Malaysian preschoolers. Teacher ratings of solitary-active play were associated with parental assessments of child temperament inattention and difficultness, as well as teacher ratings of child hyperactivity-distractibility. Solitary-passive play was associated with teacher ratings of child unsociability.

It is important to note that these last three studies all employed teacher ratings of children's nonsocial play. Despite evidence of acceptable psychometric properties, teacher reports appear to enhance associations among subtypes of nonsocial play behaviors, particularly with respect to the relation between solitary-passive and solitary-active play (e.g., Coplan & Rubin, 1998; Evans et al., 2012; Hart et al., 2000). Future research is required (including behavioral observations) to further elucidate the meaning and implications of different forms of nonsocial play across cultures.

Conclusion

Although learning to play alone offers important developmental opportunities for young children, excessive solitary behavior in the presence of potential playmates has generally been regarded as maladaptive. However, as we have discussed herein, nonsocial play is a complex and multidimensional phenomenon: different subtypes of solitary activities appear to have both different *causes* and *consequences* in early childhood. Revisiting the preschool playroom described at the outset of this chapter, the child who hovers near the group of children playing (i.e., reticent behavior) may be too shy to join in, despite a desire to do so. The child who runs around banging blocks together (i.e., solitary-active play) may be doing so because

other children have rebuked previous (somewhat socially unskilled) efforts to initiate play. Finally, the child working on a puzzle (i.e., solitary-passive play) may be perfectly content playing alone at this particular time.

It seems clear that not all forms of solitary play are equally maladaptive. Increased understanding of various mitigating factors (e.g., age, gender, context, culture) will likely continue to reveal even more nuanced differences in how children experience solitude and how peers respond to different nonsocial behaviors. For now, we would argue that the underlying *reasons* for solitary behaviors may be more telling than the act of behavioral solitude itself.

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Peer Rejection in Childhood

Social Groups, Rejection Sensitivity, and Solitude

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Children's interactions with other children are of considerable importance to them, their significance increasing exponentially through the early and middle childhood years as their involvement with individuals and groups becomes more frequent and multifaceted (Rubin, Bukowski, & Parker, 2006). However, as this involvement with peers systematically increases, so does the risk of being rejected by them. Since the experience of peer rejection, or even the threat of rejection, has the potential to impact greatly on children's social, emotional, and cognitive functioning, the causes and effects of peer rejection have been extensively studied (Rubin et al., 2006). The findings have confirmed the awful impact that peer rejection can exert on children. Research has shown, for example, that peer rejection can instigate increased emotional arousal, hostility, and aggression in some children (Dodge et al., 2003), whereas other children can reveal an increased tendency toward social withdrawal and solitude which, in turn, may be linked to loneliness, anxiety, and depression (Rubin, Coplan & Bowker, 2009). In short, it has been argued that such rejection experiences at the hands of peers have effects that go beyond the influence of the family, school, and neighborhood (Rubin et al.).

The aim of the present chapter is to review research which extends our understanding of the impact of peer rejection by focusing explicitly on the effects on children of being rejected by a *peer group*. Research has shown that children's involvement in social groups commences prior to formal schooling and increases throughout the middle childhood years, reflecting the considerable importance of group membership to children of all ages. Indeed, the evidence suggests that if there is a possibility of being accepted by, and belonging to, a social group, school-aged (if not, younger) children will seek to be included (Nesdale, 2007). Moreover,

research shows that children's social interactions during middle childhood occur increasingly within their social groups (Rubin et al., 2006). As well, there are findings indicating that children's concerns about group acceptance increase significantly during the middle childhood years (Ojala & Nesdale, 2012).

However, whereas research on children's peer relationships and their effects has burgeoned in recent decades, considerably less attention has been given to the intra- and intergroup processes underlying children's experiences in groups, as well as issues relating to the structure and organization of children's groups, and the effects of group membership on children's intra- and intergroup attitudes, beliefs, and behaviors. Of particular relevance to the present chapter is the fact that comparatively little research has been devoted to issues relating to the impact of specific aspects of peer group rejection episodes (e.g., by whom, where, how, for what reason, how frequently, with what effects), over both the short and long term.

In this chapter, we review research that has addressed the effects of peer group rejection on children. Given that almost everybody, at some time, undergoes the unpleasant, if not devastating, experience of peer rejection, of particular concern are the impacts on those children who are consistently or chronically subjected to peer group rejection, as well as those who occasionally or infrequently experience rejection.

To provide a context, research on the basis of children's social group membership is briefly reviewed, as well as findings that have illuminated the important influence exerted on children by peer group membership. We then focus on the nature and effects of both immediate and chronic peer group rejection on children, drawing on both correlational and experimental research. As well, we describe one mechanism that has been proposed to underpin chronic rejection that has been provided by the rejection sensitivity (RS) model of Downey and colleagues (Downey & Feldman, 1996; Feldman & Downey, 1994). Of particular interest here is the extent to which the model might provide an account of the chronic rejection experiences of young children. Some early research on this issue is also outlined. To conclude, we discuss the potentially fruitful future research directions on the social phenomenon of children's peer group rejection.

There are several points of clarification concerning the present chapter that are worth noting. First, the term *rejection* is used to refer to acts involving individuals omitting, debarring, banishing, or refusing to admit or accept another individual, in this case, into a social group. Second, since the effect of such acts is to cause the rejected child to be alone and may lead to experiences of solitude, the focus of this chapter seeks to contribute to the central thrust of this monograph, that is, children's solitude.

Third, the present chapter deals with children from 6 to 12 years of age, that is, the period of middle to late childhood. Although many of the relevant processes begin to emerge in children prior to this age, especially in those that interact with other children in some type of care or preschool setting, their emergence and consolidation occur during middle childhood when they are typically attending elementary school.

Fourth, the term *group* is used inclusively in the present chapter. Whereas the term is frequently used to refer to collections of two or more interacting children

who share something in common (e.g., attributes, interests, behaviors, tasks), children are assigned by nature to some groups (e.g., gender, ethnicity) or by adult authority to others (classrooms, teams, religion), but they may also elect to join others (groups of playmates, special interest groups). *Group membership* refers to the situation in which a child identifies with, or commits to, or sees himself/herself as part of, such a collection of children. This is typically revealed in children's greater liking for their in-group (i.e., the group to which the child sees himself/herself as belonging/identifying) compared with out-groups (i.e., groups to which the child does not belong/identify).

Foundation and Effects of Group Membership

Children's social awareness initially emerges through their interaction with caregivers (Durkin, 1995), but they begin to orient toward other children by about 6 months of age (Nesdale, 2007). During the early childhood developmental period (0–5 years), children's interactions with peers become more frequent and develop in quality, suggesting that social interaction is of considerable importance even to young children (Durkin). Indeed, according to some writers, children's early social behaviors probably reflect an inborn, fundamental need to belong and be accepted (Baumeister & Leary, 1995).

Importantly, there is now an array of evidence indicating that the importance of group membership to children increases throughout the middle childhood years (Rubin et al., 2006). For example, children like, and see themselves as similar to, their in-group compared with out-group members (Bigler, 1995; Bigler, Jones, & Lobeliner, 1997; Nesdale, Durkin, et al., 2004, 2005), and they derive at least some of their self-concept and sense of self-worth from their group memberships (Verkuyten, 2007). On this basis, it is unsurprising that they reveal a strong bias toward their in-group when they make choices, indicate preferences, or allocate rewards between the in-group and an out-group and that they display greater in-group positivity in their trait attributions toward their in-group compared with an out-group (see Nesdale, 2001).

Importantly, children also conform to their social group's norms concerning the appropriate intra- and intergroup attitudes, beliefs, and behaviors to be displayed by group members (Duffy & Nesdale, 2010; Nesdale & Lawson, 2011; Nesdale, Maass, Durkin, & Griffiths, 2005; Nesdale, Maass, Kiesner, Durkin, & Griffiths, 2008; Ojala & Nesdale, 2004), presumably because they know that not to do so would likely threaten their group membership. Moreover, research has shown that a group norm of exclusion is sufficient to negate children's tendencies toward empathy for the members of an ethnic minority out-group (Nesdale, Griffiths, Durkin, & Maass, 2005). In addition, children do not like, and seek to exclude, group members who do not conform to in-group norms (e.g., Abrams, Rutland, & Cameron, 2003; Abrams, Rutland, Cameron, & Marques, 2003; Nesdale, 1999;

Nesdale & Brown, 2004). Interestingly, compared with the situation where children choose their playgroups, research also suggests that similar findings are obtained when children are simply assigned to groups (Bigler, 1995; Bigler et al., 1997; Brown & Bigler, 2004).

In sum, research has clearly established the critical importance of group membership to children in the middle childhood years. During this period, children willingly become group members, they identify with their group, and they display behaviors that favor the in-group over any out-group, regardless of whether they choose, or are arbitrarily assigned to, the group.

Peer Group Rejection and Its Effects

In view of the preceding findings, it might be expected that the experience of peer group rejection, or even the threat of such rejection, would have the potential to impact greatly on children's social, emotional, and cognitive functioning. The twofold question here is: what effects might peer group rejection have on the rejected children themselves, and what impact might the rejection have on their subsequent interactions with others?

To date, the answers to these questions have primarily been obtained from observational and correlational research that has compared children who are classified as *rejected* with those classified as *average*, *neglected*, *controversial*, or *popular* (see Coie, Dodge, & Kupersmidt, 1990; McDougall, Hymel, Vaillancourt, & Mercer, 2001). In this research, children (or teachers) typically nominate others that they like or dislike, and *rejected* children are those who receive few *like* nominations and many *dislike* nominations. The rejected children are then characterized by their peers or teachers who describe their notable and/or problematic qualities or attributes (Cadwallader, 2001).

Based on these studies, together with observational and follow-forward studies (see Rubin et al., 2006), peer rejection has long been associated with a range of indicators of internal distress, including anxiety, unhappiness, anger, social withdrawal, loneliness, solitude, and depression (see Bierman, 2004; Rubin et al., 2009; Sandstrom & Zakriski, 2004; Zimmer-Gembeck, Hunter, Waters, & Pronk, 2009; Zimmer-Gembeck, Waters, & Kindermann, 2010). In addition, rejected children perform less competently on a range of cognitive tasks, including attending to and interpreting peer cues (Dodge & Feldman, 1990), solving social problem tasks (Nelson & Crick, 1999), and understanding appropriate display rules for behavior (Jones, Abbey, & Cumberland, 1998). As well, rejected children are frequently more aggressive and disruptive, spend less time on tasks, initiate less social contacts, become more socially withdrawn, experience less success in joining others and engaging in prosocial play, display less social competence, and have more negative interactions with teachers (e.g., Anthonysamy & Zimmer-Gembeck, 2007; Coie et al., 1990; McDougall et al., 2001; Zimmer-Gembeck, Geiger, & Crick,

2005). Unfortunately, these problems appear to be exacerbated by their peers who tend to perceive them as misfits or deviants, give them less visual attention and more harassment, attribute more negative attributes to them, interpret their behaviors more negatively, and perceive them as more responsible for their negative behaviors (e.g., Nangle, Erdley, & Gold, 1996).

However, whereas research on the psychosocial and social-cognitive correlates of peer rejection is accumulating, comparatively little is actually known about the everyday experience of rejection endured by children and whether these events differ for different rejected children. 'Rejection' might be revealed in varying degrees of banishment from the group's activities (e.g., one hour, one day, forever) and victimization (e.g., accompanied by verbal slurs and/or physical harassment), and hence instigate more or less isolation and solitude. But, this variability is not captured in much of the extant research. Rather, as outlined previously, a child's designation as *rejected* is typically based on a simple nomination or rating task in which other children covertly disclose their dislike for that child (Rubin et al., 2006; Sandstrom & Zakriski, 2004). In addition, whereas research has shown that children who display aggression, as well as those who are socially withdrawn (Rubin et al.), are more likely to suffer rejection, it is less clear how often peer rejection is influenced by a personal attribute(s) or quality of the rejected child (e.g., clothes, odor, physical appearance), their personality characteristics (e.g., dependence, unassertiveness), or a group or category to which they are perceived to belong (e.g., ethnicity, religion).

Moreover, the causal direction is often ambiguous between peer rejection and other affective, cognitive, and behavioral measures, because all measures have frequently been obtained in cross-sectional correlational studies (Dodge et al., 2003; Sandstrom & Zakriski, 2004). The use of observational and follow-forward studies strengthens claims for causality, but the typical quasi-experimental nature of these designs still does not permit strict causal conclusions (Cillessen & Mayeux, 2004). In short, the failure (and sometimes inability) to utilize experimental research designs severely limits researchers' attempts to systematically examine the impact on children of such factors as follows: who did the rejecting, in what circumstance, for what reason, against whom, how frequently, with what specific effects, and did the rejection occur?

Finally, few attempts have been made to assess and compare the basis for, and the effects of, an occasional instance of peer group rejection compared with ongoing or chronic rejection. Since much of what is known about peer rejection and its effects has been based upon the use of the peer dislike index, it is plausible that the extant findings mainly relate to chronic or ongoing, rather than an occasional instance of, rejection, since the peer nominators' responses are a reflection of their prior (direct or indirect) experiences with those nominated. That said, however, it is simply unclear whether those nominated have experienced rejection over years, months, or days, as well as the circumstances and nature of that rejection. Clearly, in order to obtain a comprehensive account of the causes and effects of peer rejection, it is critical that researchers assess both the immediate

effects (i.e., affective, cognitive, behavioral) of an occasional rejection episode and the longer-term effects of chronic rejection.

Accounting for Occasional Peer Rejection and Its Effects

Several researchers have examined the immediate effects of an episode of peer rejection on children by manipulating children's peer status in controlled experimental studies. However, presumably because of the ethical implications, these studies have tended to subject the participants to an ambiguous peer status manipulation in which it is not clear whether peer rejection has actually occurred (Sandstrom, Cillesen, & Eisenhower, 2004; Zakriski & Coie, 1996). For example, in a series of studies, Downey, Lebolt, Rincon, and Freitas (1998) told children that an invited friend would not join them in the session because the friend *did not want to come*. Despite the ambiguity, in each study, children responded with heightened anxiety. What is unclear, however, is what actually gave rise to the anxiety. For example, was it the frustration of not having someone to play with, or the suspicion/belief that they had been rejected, or simply the ambiguity or uncertainty of the situation? In addition, the *rejection* in each case was from a single child, rather than from a group of peers.

In the light of these concerns, Nesdale and colleagues (see Nesdale, 2008) carried out a series of studies to examine (i) the immediate causal effect of peer group rejection versus acceptance on children's affective and cognitive responses, (ii) the effect of peer rejection on attitudes and behaviors such as aggression and intergroup prejudice, and (iii) the extent to which the effect of peer rejection on attitudes and behavior was mediated by affective and/or cognitive responses. Each study utilized a social group simulation paradigm that had been used in research on the development of children's out-group prejudice (Nesdale, Durkin, et al., 2004, 2005; Nesdale & Flessner, 2001; Nesdale, Maass, et al., 2005). In this paradigm, a child is randomly assigned membership to a specific group and asked to pretend that the other group members rejected him/her or endorsed his/her membership in the group. In addition to manipulating peer group status, this paradigm also allows for the manipulation of, for example, the reason for the child's acceptance/rejection by others, the size of the accepting/rejecting group, its social group norms, and its gender and ethnicity. The child's reactions may then be examined in relation to themselves (e.g., anxiety, negative affect, self-esteem), the member(s) of their (accepting or rejecting) in-group (e.g., liking, trust, willingness to play with, aggressive intentions), or the members of the out-group (e.g., prejudice, bullying, aggression).

Consistent with the peer relations literature reviewed earlier, the results of these studies revealed that the manipulation of peer group rejection versus acceptance substantially increased the participants' negative affect and anxiety. As well, rejected children, compared to accepted children, revealed significantly less positive attitudes toward the rejecting in-group (e.g., Nesdale & Lambert, 2007, 2008; Nesdale &

Pelyhe, 2009; Nesdale, et al., 2010). The findings also indicated that the preceding effects were unaffected by whether the rejecting group was comprised of the participant and one other member, or three other members (Nesdale & Lambert, 2007).

In addition, Nesdale and Lambert (2008) found that peer group rejection significantly increased children's tendencies toward risk-taking, whereas Nesdale and Lambert (2007) reported that peer group rejection significantly increased children's tendencies toward engaging in antisocial behaviors (e.g., arguing with others, talking when the teacher is talking, using other people's things, interrupting others). Moreover, the effect of peer group rejection on children's antisocial behaviors was fully mediated by their negative affect. As well, the findings (Nesdale et al., 2007) indicated that the rejected children liked the in-group less when they had been rejected for a category reason (i.e., because the child attended a particular school) rather than an individual quality (i.e., because the child was not good at drawing). Other examples of category reasons include the child's ethnicity or gender, whereas other individual qualities include the child's appearance or whether the child smells.

At the same time, the research revealed that peer group rejection had little impact on the children's general self-esteem, with the exception of a marginal effect in one study (Nesdale & Pelyhe, 2009). Consistent with research with adults (Baumeister & Tice, 1990; Leary, 1990; Williams, 2001), these findings suggest that the immediate effect of a rejection episode is on negative affect and anxiety, rather than self-esteem, in both children and adults. Presumably, since an individual's self-esteem is built up based on an array of positive and negative experiences over time, one negative experience (e.g., an instance of peer group rejection) is unlikely to destroy the individual's self-esteem. However, with repeated instances of rejection, decrements in self-esteem would surely be likely to follow.

Peer Group Rejection and Interpersonal Aggression

Although a linkage between aggression and rejection has frequently been reported, with aggression often identified as a major determinant of rejection (see Bierman, 2004; Coie et al., 1990; Rubin et al., 2006), little is known concerning the immediate effects of an episode of peer group rejection on the interpersonal aggression of children who are not chronically rejected. Moreover, if children are instigated to aggression by peer rejection, to what extent is it likely to be directed toward members of the rejecting in-group (i.e., reactive aggression)? Further, if the rejected child is unable to retaliate against members of the rejecting group, to what extent might it be directed toward other individuals or members of other groups (i.e., displaced reactive aggression)? In addition, whereas it might be anticipated that accepted children would not be motivated to aggress against the in-group, to what extent might they be motivated instead to engage in aggression designed to achieve a non-retaliatory (i.e., proactive or instrumental)

goal (Dodge & Coie, 1987)? To examine these possibilities, Nesdale and Duffy (2011) had children simulate that they had been rejected or accepted by a group, and their intentions toward aggressing directly (e.g., hitting, pushing, taking things, verbal abuse) and indirectly (e.g., deception, ostracism, manipulation, and gossip) against members of the in-group *or* an out-group were then measured on a set of aggression vignettes.

Somewhat surprisingly, the results indicated that peer group rejection did not influence direct aggressive intentions, presumably reflecting the fact that direct aggressive intentions are more severe than indirect aggressive intentions and the fact that the participants were not selected for chronic aggression. In contrast, the participants' indirect aggressive intentions revealed the pattern of responses consistent with those that would be displayed by children displaying reactive, displaced, or proactive aggression. For example, consistent with *reactive aggression*, greater aggressive intentions were expressed by the participants toward the in-group following peer group rejection than acceptance. Importantly, whereas follow-forward research has revealed that early peer rejection in grades 1–3 predicted growth in aggression in grades 5–7 (e.g., Dodge et al., 2003), the study by Nesdale and Duffy showed that a child's rejection by his/her social group caused an *immediate* increase in their intentions to engage in indirect aggression. Moreover, although research has shown the impact of peer provocation (e.g., frustration, teasing) on the aggression of *aggressive* children (e.g., Dodge, 1980), the present findings showed that peer group rejection caused a significant and immediate increase in the indirect aggressive intentions of ordinary children (i.e., those not classified as being aggressive children) who were randomly assigned to the rejection versus acceptance conditions.

In addition, consistent with *displaced reactive aggression*, rejected children who were unable to retaliate against the rejecting in-group revealed a similar level of aggressive intentions toward the out-group as was shown by the rejected children who displayed reactive aggression toward the in-group. According to the reformulated frustration-aggression hypothesis (Berkowitz, 1989), such an outcome is likely under three conditions: when the possibility of retaliation is thwarted, when there is a perceived similarity between members of the rejecting in-group and other possible targets, and when there is little fear of punishment or retaliation (Miller, 1948). Since each of these conditions was met in the present study, the increased aggressive intentions directed toward the out-group would appear to be an instance of displaced reactive aggression.

Finally, consistent with *proactive aggression*, accepted children displayed greater aggressive intentions toward the out-group than the accepted children displayed toward the in-group. According to a social identity approach (Tajfel & Turner, 1979), given that the participant in the present study was a new and, perhaps, unconfident member of the in-group, it was plausible that she/he would display increased in-group bias and out-group negativity in order to contribute to the in-group's status, as well as to strengthen their own acceptability to the group

members. Consistent with this, other research has revealed increased bullying by children in order to achieve group acceptance (Sanders, Smith, & Cillessen, 2009).

Peer Group Rejection and Intergroup Prejudice

Research using this group simulation methodology has also addressed the possibility of whether peer group rejection might instigate antisocial attitudes and behaviors, such as prejudice and discrimination toward ethnic minority group members. However, in two early studies, the effect of peer group rejection on out-group prejudice failed to reveal such an effect (i.e., Nesdale & Pelyhe, 2009; Nesdale et al., 2010, Study 1). In both studies, whereas peer group rejection substantially increased the children's negative affect and significantly decreased their liking for the rejecting in-group, the peer group rejected and accepted children in both studies viewed the out-group equally positively.

Although this finding might suggest that rejection simply does not instigate out-group prejudice, it is noteworthy that the rejected children were left without a group to belong to following the rejection experience. Under these insecure and unstable circumstances, it seemed possible that the rejected children were less concerned about expressing prejudice toward largely unknown out-group members and more concerned with their own status and lack of group membership.

This view actually accords with Williams' (2001) model of the impact of rejection on adults. Briefly, in that model, the immediate impact of peer rejection is to instigate feelings of anxiety and negative affect that are followed in the short term by attempts to re-establish or build new relationships. If these attempts are unsuccessful, they are followed, in the longer term, by reduced self-esteem and self-imposed isolation.

In light of these considerations, Nesdale et al. (2007) sought to remove any uncertainty or ambiguity about the child's status following his or her rejection from the first group, by relocating him/her in a new group. This enabled assessment of the child's attitudes toward the (initial) accepting versus rejecting group, the new accepting group, as well as the out-group. The findings revealed that whereas the peer group rejected versus accepted children were significantly more negative toward the initial group, as expected, the rejected and accepted children subsequently revealed equally positive attitudes toward their new (accepting) in-group. As well, regardless of whether the children had been accepted or rejected by their initial in-group, the children were more positive toward their new accepting in-group than they were toward the out-group, consistent with other research findings (e.g., Bigler, 1995; Bigler et al., 1997; Nesdale & Flessner, 2001; Nesdale et al., 2003, 2004; Yee & Brown, 1992).

Of critical importance, however, was the additional finding that the children who had been rejected by their initial in-group actually expressed more negative attitudes toward the out-group than did the children who had been accepted by

their initial in-group. However, while this study identified a causal linkage between peer group rejection and out-group prejudice, it also indicated that the relationship between peer group rejection and prejudice is neither direct nor straightforward. In short, the results gave further emphasis to the importance of children's peer group membership by indicating that the display of prejudice by rejected children actually depended on their gaining membership in another peer group. Identical findings have been reported in at least two other studies (Nesdale et al., 2009, 2010).

In sum, experimental research using a group simulation paradigm has revealed that an episode of peer group rejection instigates negative affect in typical school children. In turn, these negative affective reactions (e.g., anger, worry, unhappiness) can instigate or mediate subsequent disruptive, argumentative, and interfering behaviors toward others. In addition, as we have seen, research has shown that episodes of peer group rejection can have a direct causal effect on children's aggression and intergroup prejudice.

Accounting for Chronic Peer Group Rejection and Its Effects

Research also indicates that over the longer term, chronic rejection may be associated with low self-esteem and poor self-concept, as well as social withdrawal, loneliness, and depression and an increasingly serious array of self-destructive and antisocial behaviors. The latter may include academic difficulties, truancy, dropping out from high school, violence and aggression, adolescent delinquency, substance abuse, and relationship difficulties (Coie et al., 1990; McDougall et al., 2001; Rubin et al., 2006). It is also worth noting that chronic rejection can have serious long-term negative effects on social cognition, personality, mental health, and social behavior of adults (Baumeister, Twenge, & Nuss, 2002; Leary, 2001; Williams, 2001; Williams, Cheung, & Choi, 2000).

According to Downey and colleagues, the particular rejection experiences endured by some people over time might actually over-sensitize them to the possibility of rejection and thereby contribute to its long-term negative effects. Drawing from attachment theory (Bowlby, 1969) and social-cognitive theory (Downey, Bonica, & Rincon, 1999), Downey and colleagues proposed that rejection experiences instigate a disposition toward RS. This disposition refers to a pattern of social information processing that includes a heightened tendency to anxiously expect, readily perceive, and overreact to implied or overt interpersonal rejection (Downey & Feldman, 1996; Feldman & Downey, 1994). A simple representation of the RS model is conveyed in Figure 8.1 (based on Levy, Ayduk, & Downey, 2001, p. 252).

According to the model, RS develops when people's desires to belong are repeatedly unrealized, resulting in ongoing expectations of rejection (link 1 of Figure 8.1). Such expectations are activated in situations where rejection is a possibility leading individuals to readily perceive innocuous cues as evidence of rejection (link 2). This perception instigates negative emotional responses, such as anxiety and anger

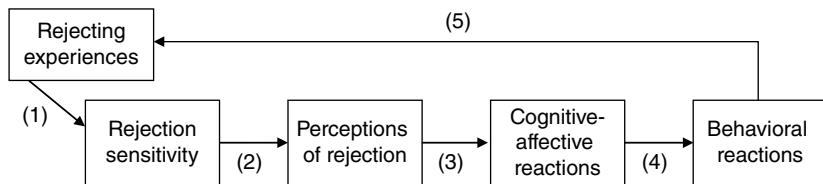


Figure 8.1 Simplified RS model.

Source: Levy et al. (2001, p. 252)

(link 3), as well as an increased likelihood of maladaptive behaviors, such as social withdrawal and reactive hostility and retribution (link 4). Ironically, overreactive responses such as these can produce a self-fulfilling prophecy in which actual rejection is elicited (link 5).

Consistent with link 1 of the RS model, research has shown that people who experience more parental and peer rejection have greater rejection expectations (Feldman & Downey, 1994; Downey et al., 1999; McLachlan, Zimmer-Gembeck, & McGregor, 2010; Zimmer-Gembeck & Wright, 2007). Consistent with links 2, 3, and 4, RS has been shown to be a correlate of increased distress and a readiness to perceive rejection even when events are ambiguous (Downey & Feldman, 1996; Downey, Lebolt, et al., 1998). These perceptions give rise to a range of negative cognitive, emotional, and behavioral consequences over and above the impact of actual rejection experiences (Sandstrom et al., 2004), including social withdrawal, loneliness, depression, anger and hostility, jealous and controlling behavior in partnerships, relationship dissolution, and domestic violence (Ayduk, Downey, & Kim, 2001; Downey & Feldman, 1996; Downey, Feldman, & Ayduk, 2000; Petherick & Zimmer-Gembeck, 2006; Watson & Nesdale, 2012; Zimmer-Gembeck & Vickers, 2007). Finally, research has also revealed that RS can lead to actual rejection (link 5), thus creating a self-fulfilling prophecy (Downey, Freitas, Michaelis, & Khouri, 1998).

However, whereas research to date has supported the broad outline of the RS model in relation to adults, Downey and colleagues (e.g., Downey, Freitas, et al., 1998) recognized that the model did not allow for predictions linking rejection expectations with particular behavioral difficulties, such as aggression, social withdrawal, and loneliness. In short, the model lacked detail concerning the mediational processes (links 2–4, preceding text) considered to be at the heart of the RS model.

Consequently, Downey and colleagues extended the model to propose that rejection expectations may be accompanied by defensively oriented emotions of anxiety (i.e., anxious expectations) or anger (i.e., angry expectations) that prepare the individual to defend the self against subsequent rejection (Downey et al., 1999). Further, it was proposed that the specific type of anticipatory affect (i.e., anxious or angry expectations) would predict the type of behavioral reaction enacted (i.e., social withdrawal or hostility and aggression, respectively), the particular behavioral response being dependent on the relative levels of anxious or angry expectations that were instigated (London, Downey, Bonica, & Paltin, 2007).

Table 8.1 Study 1 results of regressing withdrawal and reactive aggression responses to overt social rejection scenarios on anxious and angry expectations of rejection ($N=464$ students aged 17–22)

<i>Independent variables</i>	<i>Model 1: withdrawal</i>		<i>Model 2: reactive aggression</i>	
	<i>B</i> (<i>SE</i>)	β	<i>B</i> (<i>SE</i>)	β
RS – rejection	0.04 (0.007)	0.22**	0.03 (0.007)	0.19*
RS – anxiety	0.05 (0.006)	0.36**	0.00 (0.006)	0.03
RS – anger	0.00 (0.006)	0.02	0.04 (0.006)	0.28**

* $p < 0.05$.

** $p < 0.001$.

Note: Model 1 $R^2 = 0.21$, $F(3460) = 40.8$, $p < 0.001$. Model 2 $R^2 = 0.13$, $F(3461) = 22.55$, $p < 0.001$.

RS = rejection sensitivity.

To date, these hypotheses of the revised RS model have only been examined in two studies involving adult participants (Zimmer-Gembeck & Nesdale, *in press*). In each study, participants' RS was measured (anxiety about rejection, anger about rejection, and likelihood of rejection), together with the participants' tendencies toward social withdrawal and reactive aggression in response to their implied rejection in a series of scenarios. Of particular interest in both studies were the questions of whether the participants' anxious RS (or rejection anxiety) was more strongly associated with social withdrawal than reactive aggression, whether angry RS (or rejection anger) was more strongly associated with reactive aggression than social withdrawal, and whether rejection likelihood was associated with both withdrawal and reactive aggression. Consistent with the revised RS model, the findings of both studies (see Study 1 findings in Table 8.1) yielded support for all three predictions.

In sum, the results of these studies added to the accumulating body of research supporting the account provided by the broad RS model of the likely basis of the effects of chronic rejection on adults. In particular, the findings provided strong support for the revised RS model, which sought to clarify the mediational processes at the core of the model. In short, the findings indicated that RS individuals might respond to the possibility of rejection with different affective reactions (i.e., anger, anxiety) that are associated with each other but are uniquely linked with different responses (i.e., retribution, social withdrawal, respectively).

Rejection Sensitivity and Children

Given that children may also experience chronic rejection and its associated effects, it raises the question of whether, from school age onwards, children might also begin to develop expectations of subsequent rejection based upon their prior

Table 8.2 Results of regressing withdrawal and reactive aggression responses to overt social rejection scenarios on anxious and angry expectations of rejection ($N=144$ children aged 6–12)

<i>Independent variables</i>	<i>Model 1: withdrawal</i>		<i>Model 2: reactive aggression</i>	
	<i>B (SE)</i>	β	<i>B (SE)</i>	β
RS – expectation	0.51 (0.29)	0.14 ^a	0.19 (0.18)	0.09
RS – anxiety	0.43 (0.22)	0.17*	0.04 (0.13)	0.13
RS – anger	0.41 (0.27)	0.13	0.37 (0.16)	0.20*

^a $p = 0.08$.

* $p < 0.05$.

Note: Model 1 $R^2 = 0.10$, $F(3|140) 5.03$, $p < 0.01$. Model 2 $R^2 = 0.06$, $F(3|140) 2.77$, $p < 0.05$.

RS = rejection sensitivity.

rejection experiences. In short, do some school-aged children also learn to anxiously expect and readily perceive rejection, in the manner specified by the RS model, and, if so, do they also subsequently display overreactions in their cognitions, emotions, and behaviors? Indeed, viewed in the light of the work of Downey and colleagues on the role of RS in underpinning the effects of chronic rejection on adults, is it possible that the seeds of this process are sown in the experiences of chronic rejection endured by children? If so, is it possible that the process outlined in the RS model might begin to be revealed in children in middle childhood?

To date, although studies have assessed aspects of the RS model in adolescents (e.g., London et al., 2007; McLachlan et al., 2010), only one study has addressed the possibility of RS during middle childhood (Nesdale, Zimmer-Gembeck, & Roxburgh, *in press*). This study closely paralleled the two studies with adults described earlier (Zimmer-Gembeck & Nesdale, *in press*), with the exception that the materials were modified to meet the cognitive and linguistic needs of the 6- to 12-year-old child participants. The study assessed children's perceptions of the extent of their parental and peer rejection, their rejection sensitivity, and their likely behavioral responses (i.e., social withdrawal, retribution, and aggression) to several implied rejection scenarios.

Consistent with link 1 in the RS model, the findings indicated that both parental and peer rejection were associated with heightened RS. As well, consistent with links 2 and 3, and the revised RS model, the results indicated that anxiety about rejection, rather than anger, was more strongly linked to social withdrawal in response to implied rejection. In contrast, anger about rejection, rather than anxiety, was more strongly associated with retribution in response to implied rejection (see Table 8.2). However, likelihood of rejection was not associated with either the participants' anticipations of withdrawal or retribution.

In sum, the results of this study revealed that RS is measurable in children from as young as 6 years and that even at this age, children's responses were consistent

with the RS model. Thus, children in middle childhood develop characteristic affective reactions to the possibility of rejection (i.e., anxiety or anger), and these affective reactions are associated with particular behavioral responses (i.e., social withdrawal, reactive aggression, respectively).

However, although these findings revealed some continuity with adult RS, the findings also revealed some discontinuities. In particular, whereas the perceived likelihood of rejection was associated with the adults' responses of both withdrawal and reactive aggression (Zimmer-Gembeck & Nesdale, *in press*), such was not the case with the children in this study. Apparently, while children acquire the characteristic affective reactions to rejection from an early age and these are associated with particular behavioral responses, their more cognitive estimates of the likelihood of subsequent rejection are not yet associated with their anticipated responses to rejection experiences.

Summary and Conclusion

A considerable amount of research has focused on children's peer group rejection, and much has been learned about what might comprise the typical precursors, as well as the common affective, cognitive, and behavioral reactions, of those victimized. That said, simply because they have received much less research attention, there is less clarity than might be hoped in relation to the impact of particular variables, such as who carried out the rejection, how, for what reason, when, where, against whom, with what immediate and short- and long-term effect, as well as what mediates these effects. Perhaps most importantly, many of the findings are still based on the utilization of the dislike index; that is, the designation of those who experience rejection is based on children's covert nominations of children who are disliked versus liked.

However, as we have seen, some researchers are now seeking to address some of the foregoing issues by employing follow-forward techniques as well as group simulation paradigms that enable the manipulation of variables and hence allow for inferences of causality. These studies have begun to shed new light on peer rejection and its effects, especially in relation to episodes of occasional peer rejection and their immediate effects on the affective, cognitive, and behavioral reactions of those victimized.

At the same time, while explicitly or implicitly, chronic rejection has long been the focus of researchers, given the substantial negative impacts of such victimization, a new stimulus to theory and research on this topic has appeared in the form of the rejection stimulus model of Downey and colleagues. Although largely confined to date to the chronic rejection of adults and, to a lesser extent, that of adolescents, the model has thus far derived considerable support from research findings. Given that some children also experience chronic rejection and its associated effects, it raises the important question of whether some

school-aged children might also learn to anxiously expect and readily perceive rejection, in the manner specified by the RS model, and hence might also subsequently display overreactions in their cognitions, emotions, and behaviors. Although, at present, the extant research is confined to only one study, it is nevertheless promising that the findings from that study were also largely consistent with the RS model. Importantly, the findings thus far for adults, adolescents, and children also bear on the possibility of a linkage between peer rejection and solitude.

Peer rejection and solitude

Consistent with the RS model, research has demonstrated that adults who experience anxious RS (or rejection anxiety) are likely to engage in social withdrawal (rather than reactive aggression) which, in turn, is associated with loneliness, isolation, solitude, and depression (Watson & Nesdale, 2012; Zimmer-Gembeck & Nesdale, 2013). In contrast, individuals who experience angry RS (or rejection anger) are more likely to engage in retaliation, hostility, and reactive aggression (rather than social withdrawal).

Similarly, our recent research has also revealed that children as young as 6 years of age who experienced anxiety about rejection (rather than anger) were more likely to respond to implied rejection with social withdrawal. In contrast, children who typically responded with anger to rejection (rather than anxiety) were more likely to display retaliation and reactive aggression. However, although our research has not addressed the possibility of significant associations between children's anxious RS, social withdrawal, loneliness, solitude, and depression, other research has shown that being socially withdrawn is associated with loneliness and depressed affect from the earliest years of childhood (Coplan, Closson, & Arbeau, 2007; Hymel, Rubin, Rowden, & Le Mare, 1990) and that these responses are enhanced by peer rejection (Boiven & Hymel, 1997).

Future research directions

Whereas our recent study suggests that the RS model contributes to our understanding of the effects of chronic rejection on children, it is clear that there is a range of issues that need to be addressed in future research. For example, if young children also acquire the RS sequence (i.e., rejection experience → rejection expectations → emotional and behavioral overreactions), what mechanism(s) might underpin these responses? For example, to what extent might the development of RS reflect cognitive distortions or inaccuracies (e.g., nonrecognition or misinterpretation of social cues, biased or misattribution of own and others' behavior, biased evaluation or judgment of others' behavior, and inappropriate response decisions), similar to those described by Crick and Dodge (1994) in their social information processing model and in relation to children's reactive aggression?

Further, on what basis do children's behavioral responses of social withdrawal following rejection anxiety lead to social isolation, depression, and loneliness, whereas hostility and retribution following rejection anger lead to relationship difficulties and violence? As well, are there other individual difference variables that might facilitate (e.g., need for belonging and acceptance) versus moderate (e.g., emotional empathy) the development of children's RS?

Again, if some young children do develop RS, to what extent is this likely to be a stable response pattern into adolescence and adulthood? Is RS subject to change or diminution as children acquire increasing social knowledge and acumen in late middle childhood into adolescence? Finally, how can RS in young children be reduced or extinguished? Are there particular strategies that might be especially effective for children (e.g., breaking specific links in the RS cycle, antisocial behavior retraining, building supportive relationships)?

Clearly, given the devastating impact that peer group rejection can have on children, especially those subjected to chronic rejection, these are important questions that demand research attention. Indeed, it is only through obtaining answers to these sorts of questions that researchers can begin the task of developing interventions that will moderate children's tendencies toward engaging in peer rejection and enhance other children's resilience and skills in coping with such provocations.

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Affinity for Aloneness in Adolescence and Preference for Solitude in Childhood

Linking Two Research Traditions

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Adults often are concerned when they see that a child in elementary school does not play with other children during recess. When adults keep to themselves or adolescents prefer to spend time alone in the privacy of their own room, most people are not worried. These different reactions indicate that adult members of our society tend to believe that time spent alone has its own specific advantages in adolescence and adulthood, but not during childhood. Scientific research, however, has shown that particular forms of time spent on one's own have unique benefits for the developing individual in each period of the lifespan, albeit in phase-specific ways. The present chapter provides an overview of these scientific findings.

Specifically, the chapter describes two research traditions that have concentrated on solitary play in childhood and time spent alone in adulthood, respectively. These two traditions have hitherto remained isolated from one another, and, until recently, communication among researchers involved in these respective enterprises has been scarce. The first two sections of the chapter present an overview of these two traditions and their associated domains of scientific inquiry that plunge their roots into theories of motivation and maturity. The final section suggests different ways in which the two traditions may be linked up with one another in a joint effort to clarify the meaning of solitude throughout the lifespan.

Playing Alone in Childhood and Its Underlying Motives

Many researchers who take an active interest in children's social development pay special attention to children who play alone or, more generally, are not engaged

in social interaction when peers are present (Coplan, Rubin, Fox, Calkins, & Stewart, 1994). This absence of social interaction, sometimes referred to as behavioral solitude, can have an external or an internal source. In the former case, children are actively excluded from social interaction. This situation may be labeled *active isolation* (Rubin, Bukowski, & Parker, 2006). In the latter case, referred to as social withdrawal, children remove themselves from social interaction. They may have several reasons for doing so. As a result, several groups may be distinguished, each with their own type of motivational background for playing on their own (Rubin, Coplan, & Bowker, 2009). A first group of children is afraid of their age-mates or socially anxious. Several terms, such as shyness or anxious solitude, are used to denote this special type of social withdrawal. A second group of children shows a non-fearful preference for solitary activities. Again, several terms, such as unsociability or social disinterest, are used to refer to this type of social withdrawal (Coplan & Rubin, 2010). As both of these terms may have negative connotations, the term *preference for solitude* is increasingly being used to stress the fact that non-fearfully withdrawn children have interests of their own that they prefer to pursue in solitary activities rather than spending time with others (Coplan & Weeks, 2010a).

A more elaborate conceptualization, which is based on the combination of social approach and social avoidance motivations, distinguishes three rather than two types of social withdrawal in children (Asendorpf, 1990, 1993). For example, shy children have both high social approach and social avoidance motivations (i.e., they have a desire to affiliate with other children but do not do so because of fear or anxiety). Unsociable children show the opposite pattern of motivational dynamics. They have both low social approach and low social avoidance motivations (i.e., they refrain from social contact but are not afraid of other children). Finally, socially avoidant children have low social approach and high social avoidance motivations (i.e., they do not want to affiliate with others and are fearful of their age-mates). The majority of children, of course, fall into a fourth, non-withdrawn category, which can be described as sociable. They have low social avoidance and high social approach motivations and are outgoing, enjoy the company of others, and are socially competent (Asendorpf, 1990, 1993).

These conceptualizations have inspired a large set of measures designed to tap into the various types of withdrawn behaviors. These measures include observations of children's nonsocial play that may serve as markers of these different types of social withdrawal or peer nominations that tap into a broader construct of withdrawal that may overlap in part with active isolation (see Coplan & Ooi, Chapter 7, this volume, for a review). Other measures directly assess the underlying reasons for social withdrawal, as inspired by the dual model (i.e., social approach and social avoidance motivations). In the Child Social Preference Scale (CSPS) (Coplan, Prakash, O'Neill, & Armer, 2004), mothers indicate the reasons why their children do not play with other children. As such motivations are clearly subjective, a growing number of researchers directly ask mostly older children rather than their mother for these underlying reasons in self-report versions of the CSPS (Bowker & Raja, 2011). Finally, some researchers tap into children's preference for

solitude using the Child Social Preference Questionnaire (CSPQ) (Coplan et al., 2013). The latter measure has items such as “I prefer to play alone than with other kids” and does not probe underlying motivations for solitary activities (see Rubin et al., 2009, for an overview of available measures of social withdrawal).

Using these various instruments, researchers have attempted to gather evidence for two key assumptions in the literature on childhood social withdrawal. First, they have tried to demonstrate that positive motives rather than being fearful of other children underlie unsociability or social disinterest. Supportive evidence for this assumption was provided by the fact that the various types of social withdrawal, each with their underlying motivation, could be reliably measured and easily distinguished through factor analysis, in both the mother-report (Coplan et al., 2004) and the self-report format (Bowker & Raja, 2011). Second, researchers have tried to demonstrate that unsociability, or as it is currently called, preference for solitude, represents a relatively *benign* form of social withdrawal. Specifically, this form of withdrawn behavior was expected to show limited associations at best with internalizing problems.

This expectation was confirmed when comparing different types of withdrawal, as inspired by the dual model. Using mother reports of shyness and social disinterest, unsociable children (i.e., low on shyness and high on social disinterest) did not differ from non-withdrawn comparison children but showed fewer internalizing problems than shy children (i.e., high on shyness and low on social disinterest; Coplan & Weeks, 2010b). Using self-report measures of both shyness and preference for solitude, unsociable children (i.e., low on shyness and high on preference for solitude) had comparable scores for internalizing problems than non-withdrawn children. They further had fewer internalizing problems than shy-conflicted (i.e., high on shyness and low on preference for solitude) and avoidant children (i.e., high on both shyness and preference for solitude) in particular. The latter finding is in keeping with the idea that social avoidance could be an early sign of depressive symptoms (Coplan et al., 2013).

Wanting to Be Alone in Adolescence and Its Adaptive Functions

Researchers who study social development in adulthood have tended to focus on time spent alone and have relied on self-reports (e.g., Leary, Herbst, & McCrary, 2003; Long, Seburn, Averill, & More, 2003). The latter instruments measure the amount of time spent alone, the enjoyment of solitary activities, or the preference for solitude. In the items of the Preference for Solitude Scale (PSS) (Burger, 1995), for instance, respondents have to make a choice between a solitary activity and an alternative activity in the company of others. Underlying motivations for time alone occupy a central place in this field of research as is the case in the childhood literature. A key notion is that adults who spend time alone have positive reasons for doing so. They want to pursue their own interests while they are alone and are

not simply afraid of others, or simply low in affiliation motivation (see Nikitin & Schoch, Chapter 12, this volume).

Several studies have supported this notion. For example, young adults scoring high on the PSS tend to spend more time by themselves than those scoring low on the scale – and this relation continues to hold when the effects of social anxiety are statistically removed (Burger, 1995, Experiment 5). Another study on young adults showed that the frequency and enjoyment of solitary activities are primarily a function of a strong desire to spend time alone (i.e., high solitropism as measured by instruments similar to the PSS) and not to a weak desire to spend time with others (i.e., low sociotropism as measured by low affiliation motivation or a lower need to belong; Leary et al., 2003).

Researchers who study solitude in adulthood, however, tend to go one step further than their colleagues with similar interests in childhood solitude. They claim that solitude can have a number of beneficial or adaptive functions. Time spent on one's own, when not externally imposed but actively strived for, can lead to greater insight, emotional self-renewal, and increased creativity in some people (Long & Averill, 2003; see also Averill & Sundararajan, Chapter 6, this volume). Based on their research with college students, Long et al. (2003) came up with two dimensions of potentially beneficial use for solitude, that is, inner directed (e.g., inner peace) and outer directed (e.g., spirituality). The idea that solitude can have positive effects was perhaps expressed most cogently by Abraham Maslow (1954). He stated that people who realized their inner potential to the fullest (i.e., the self-actualizing personality) value their privacy and enjoy solitude. Although they also love the company of others, they regularly take time to themselves for personal discovery and to cultivate their inner potential.

In this conceptualization geared to constructs of adult maturity, adolescence occupies a central place as a transitional phase between childhood and adulthood. Children rarely strive to be alone and often find it hard to make constructive use of time spent by themselves. For adolescents, however, solitude begins to have conscious and deliberate functions. Time spent alone is used to deal with the important developmental tasks of individuation and identity formation (i.e., to take greater psychological distance from one's parents and to contemplate plans for the future; Goossens & Marcoen, 1999; Larson, 1990 – see Goossens, 2006, for an overview of research on adolescent solitude). As adolescents come to appreciate the benefits of being alone or, put differently, solitude emerges for the first time as a constructive domain of expertise during adolescence (Larson, 1997), many scholars use the term *affinity for aloneness* in research on adolescents and adults. In view of these specific connotations, this term seems somewhat broader than the term *preference for solitude* as used in recent research on children's social withdrawal.

Another concern of researchers with an active interest in adolescent solitude is that affinity for aloneness should be distinguished from pathological forms of social disinterest as found in clinical depression or schizophrenia. Several groups of adults, such as writers or artists, for instance, may seem to be temporarily absorbed in almost autistic solitude but clearly transcend this state in their creative process (Bucholz, 1997; Storr, 1988).

Based on these theoretical notions, researchers have tried to find evidence for three key assumptions in the literature on adults' affinity for aloneness. A first assumption is that, from adolescence onwards, affinity for aloneness represents a non-pathological form of unsociability. A second assumption is that adolescents are expected to appreciate time spent on their own for positive reasons, that is, because being alone allows them to pursue their own interests. On this particular issue, the research program on affinity for aloneness most closely resembles the research tradition on children's social withdrawal. A third and final assumption is that affinity for aloneness, as a key component of adult maturity, shows positive associations with well-being or negative associations with internalizing problems.

Testing Key Assumptions of the Affinity for Aloneness Construct

These three key assumptions were put to an empirical test in an ongoing research program on adolescents' loneliness and attitudes to being alone, co-organized by the author of the present chapter. Part of the program dealt with affinity for aloneness and its presumed counterpart, that is, boredom (see Goossens, 2004, for an overview of the theoretical background of this research program and Galanaki, 2004, for a similar distinction between loneliness and attitude to being alone). Factor analysis on a large set of items yielded two scales on loneliness and two subscales that dealt with adolescents' attitude to aloneness. One of these scales measured loneliness as experienced in the relationship with parents (e.g., "I feel left out by my parents"), whereas the other one probed loneliness in the relationship with peers (e.g., "I am sad because I have no friends"). Two additional subscales measured affinity for aloneness (e.g., "I want to be alone") and aversion to aloneness (e.g., "When I am alone, I feel bad"), respectively (Marcoen, Goossens, & Caes, 1987). The four scales of the instrument, which is called the Loneliness and Aloneness Scale for Children and Adolescents (LACA), show low intercorrelations in general, and the two subscales on attitudes to being alone in particular show a correlation close to zero (Marcoen & Goossens, 1993). The latter finding implies that the two scales probe largely independent aspects of adolescents' attitudes to being alone. Earlier work has clearly demonstrated the construct validity of the four-scale measure in both older children (Goossens & Beyers, 2002) and adolescents (Goossens et al., 2009).

A non-pathological form of unsociability

This particular assumption was tested in three samples of adolescents from grades 9 to 12. A first sample ($N=371$) completed the LACA and two standard measures of sociability as developed by Cheek and Buss (1981) and Eaves and Eysenck (1975).

Table 9.1 Correlations with measures of (un)sociability

Scale	N	<i>Loneliness</i>	<i>Loneliness</i>	<i>Aversion</i>	<i>Affinity</i>
		<i>Parents</i>	<i>Peers</i>	<i>Alone</i>	<i>Alone</i>
Sociability – CB	371	−0.13*	−0.32***	0.40***	−0.34***
Sociability – EE	371	0.02	−0.38***	0.28***	−0.32***
Isolation	264	—	—	−0.05	0.46***
	252	—	—	−0.04	0.36***
Solitude/insensitivity	264	—	—	−0.01	0.13*
	252	—	—	−0.03	0.10

Note: CB = Cheek and Buss (1981) measure; EE = Eaves and Eysenck (1975) measure.

* $p < 0.05$.

*** $p < 0.001$.

Sample items for these scales are “Do you like to go out a lot?” and “I like to be in the company of others,” respectively. Two additional samples ($N = 264$ and 252) also completed the LACA and two measures of unsociability. The first of these instruments was the isolation subscale of the Dutch Narcissism Scale (Ettema & Zondag, 2003) which taps into a mild form of unsociability, that is, the feeling of not being understood by other people and of being unable to reach out to others. A sample item for this scale is “Other people typically do not have any idea of what I think or feel.” The second instrument, the solitude/insensitivity subscale of the Sociotropy Autonomy Scale (SAS) (Clark & Beck, 1991), taps into a more pronounced form of unsociability, that is, a preference for solitary activities and insensitivity to the needs and wishes of other people. Sample items for this scale are “I sometimes unintentionally hurt the people I love the most by what I say” (insensitivity) or “I like to go off on my own, exploring new places – without other people” (solitude). The correlations obtained from the three samples can be found in Table 9.1.

As can be seen, the subscale affinity for aloneness showed significant negative correlations of low to moderate size (i.e., r_s between 0.30 and 0.50) with both measures of sociability, significant negative correlations of similar size with the mild form of unsociability (i.e., isolation), and low to nonsignificant correlations with the more pronounced form of unsociability (i.e., solitude/insensitivity). This pattern of correlations is consistent with the notion that this subscale measures a non-pathological form of unsociability, as expected. Specifically, as adolescents show a greater affinity with aloneness, they are less inclined to state that they appreciate the company of others, are less likely to feel understood by others, but do not show greater insensitivity to others’ needs and feelings. The other correlations in the table suggest that the aversion to aloneness subscale of the LACA measures sociability but is unrelated to unsociability. Finally, peer-related loneliness shows significant negative correlations with sociability.

Motives for being on one's own

As indicated earlier on, a crucial aspect of the affinity for aloneness construct is that adolescents are expected to appreciate time spent on their own for positive reasons, that is, because being alone allows them to pursue their own interests. This assumption was examined in two samples of adolescents from grades 5 to 6. Some of the items in the affinity for aloneness scale do refer to the activities undertaken when alone and, implicitly, to the underlying motive for engaging in them (e.g., "...because I can do some quiet thinking"). Other items, however, are vague about these activities or the underlying motivation (e.g., "I withdraw from others to do things than can hardly be done with a larger number of people") or refer to negative or *reactive* reasons for being on one's own (e.g., "I keep away from others because they disturb me with their noise"). Studies that examine in greater detail the positive reasons why adolescents want to be on their own, therefore, can provide additional evidence for the construct validity of the scale.

In a first study ($N=500$), adolescents completed the LACA and the Children's Solitude Scale (CSS) (Galanaki, 2008). The items in the latter instrument have a common stem, that is, "I like to be alone...", followed by a specific reason for doing so (e.g., "...in order to do my homework," "...in order to keep my secrets to myself," or "...in order to concentrate both easier and better"). A factor analysis on a sample of Greek early adolescents revealed a four-factor structure: daydreaming-concentration, freedom from criticism/independence, privacy and activities, and concentration-achievement.

Factor analysis on the Belgian sample yielded a three-factor structure similar yet not identical to the original factor structure. These factors were labeled self-reflection/concentration (e.g., "...in order to plan for the future"), freedom from criticism (e.g., "...in order to do what I want without others telling me what to do"), and activities (e.g., "...in order to do handicrafts or jigsaw puzzles"). Correlations and regression weights, with the LACA subscales being regressed on the three CSS subscales, are represented in Table 9.2.

As can be seen, all three CSS subscales showed significant correlations with the affinity for aloneness scale. A regression analysis revealed that the self-reflection/concentration subscale had the strongest unique association with the scale. Collectively, the three subscales of the CSS accounted for about a third of the variance in affinity for aloneness scores. The predictive power of these subscales vis-à-vis the other LACA subscales was much lower (between 5% and 10% of explained variance). This pattern of findings supports the notion that children who like to be alone, as indicated by high scores on the affinity for aloneness scale, do so for *positive* reasons, mainly to engage in self-reflection and to achieve higher levels of concentration.

A second study examined the links between affinity for aloneness and the motives underlying social withdrawal, as conceptualized in the childhood literature. Another sample of early adolescents ($N=324$) completed the LACA and the

Table 9.2 Multiple regression analyses predicting loneliness and attitudes to being alone from motives for being alone

Predictor	Loneliness		Loneliness		Aversion		Affinity	
	Parents		Peers		Alone		Alone	
	β	r	β	r	β	r	β	r
Self-reflection/concentration	-0.02	0.04	0.25**	0.30**	0.16**	0.20**	0.58**	0.60**
Freedom from criticism	0.32**	0.26**	0.08**	0.21**	0.13**	0.19**	-0.12**	0.16**
Activities	-0.04	0.06	0.02	0.17**	-0.03*	0.10*	0.04	0.25**
Adjusted R^2	0.08		0.09		0.05		0.31	

* $p < 0.05$.** $p < 0.01$.**Table 9.3** Multiple regression analyses predicting loneliness and attitudes to being alone from social withdrawal dimensions

Predictor	Loneliness		Loneliness		Aversion		Affinity	
	Parents		Peers		Alone		Alone	
	β	r	β	r	β	r	β	r
Isolation	0.13	0.21***	0.67***	0.76***	0.18**	0.17**	0.08	0.25***
Shyness	0.18*	0.23***	0.14**	0.50***	0.17**	0.15**	0.05	0.25***
Social disinterest	-0.02	0.07	0.05	0.29***	-0.33***	-0.22**	0.46***	0.48***
Adjusted R^2	0.06		0.60		0.13		0.25	

* $p < 0.01$.** $p < 0.001$.

self-report version of the Children's Social Preference Scale (CSPS-R) (Bowker & Raja, 2011). The latter instrument comprised of four subscales that assessed different types of social withdrawal. These types were shyness (e.g., "Sometimes I turn down chances to hang out with other kids because I feel too shy"), unsociability (e.g., "I like spending time alone more than with others"), avoidance (e.g., "I choose to play alone because I don't like others"), and social exclusion (e.g., "I want to play with other kids, but they do not want to play with me").

Factor analysis on the CSPS-R, as completed by the Belgian sample, yielded three factors that could easily be identified as shyness, unsociability, and social exclusion. The avoidance subscale, which was defined by two items only, had a low internal consistency and had to be dropped. Correlations and regression weights, with the LACA subscales being regressed on the three remaining CSPS-R subscales, are presented in Table 9.3.

As can be seen, these three subscales all showed significant correlations with the affinity for aloneness scale. A regression analysis revealed that the unsociability subscale had the strongest unique association with that scale. Collectively, the three CSPS-R subscales accounted for a quarter of the variance in affinity for aloneness scores. A similar regression analysis indicated that the social exclusion subscale had the strongest unique association with the peer-related loneliness scale. Together, the three CSPS-R subscales accounted for half of the variance in the scores for that subscale.

This pattern of findings, then, indicates that affinity for aloneness, as expected, is associated with preference for solitude or unsociability as it is referred to in the CSPS-R. An additional finding is that feeling lonely in one's relationships with peers is associated with another form of withdrawal, that is, social exclusion. In short, early adolescents in Belgium who state that they like to be on their own have a preference for solitude, whereas lonely adolescents feel excluded by their age-mates. This overall pattern of findings is in line with the results of earlier studies on Indian adolescents (Bowker & Raja, 2011) and North American college students (Nelson, 2013).

Associations with internalizing problems

Earlier work on the expected positive associations between affinity for aloneness and well-being or the negative associations with internalizing problems has been inconclusive. Contrary to expectations, Waskovic and Cramer (1999) found that higher scores on the PSS (Burger, 1995) were associated with higher scores for loneliness, alienation, and social anxiety. Other authors found a mixed pattern of results. Larson and Lee (1996), for instance, developed two scales to tap into affinity for aloneness. The Solitary Coping Scale tapped into adults' tendency to use time alone to deal with stress. The Solitary Comfort Scale, by contrast, examined how comfortable a person feels when he or she is alone. (Sample items for these two scales are "Being alone helps me to reduce stress" and "Occasionally, I have a good time all by myself," respectively.) Different associations with internalizing problems and well-being were found for each of these scales. Scores on the Solitary Coping Scale were unrelated to measures of internalizing problems and well-being. Higher scores on the Solitary Comfort Scale, however, were associated with lower scores for depressive symptoms, fewer physical symptoms, and greater life satisfaction (Larson & Lee, 1996).

This unequivocal pattern of results suggested that different aspects of people's attitudes to being alone could be distinguished, each of which had a specific association (i.e., a negative, neutral, or positive one) with well-being. In our unfolding research program on adolescents' affinity with aloneness, we decided to assemble a large battery of relevant measures and to empirically define various aspects of the construct by means of factor analysis. These factors could then be related to measures of internalizing problems.

A sample of adolescents from grades 9 to 12 ($N=252$) completed a set of solitude-related measures: the aversion to aloneness and affinity for aloneness subscales of the LACA, the solitude subscales of the Privacy Questionnaire (PQ) (Marshall, 1974) and the Privacy Preference Scale (PPS) (Pedersen, 1979), the Solitude Scale for Adolescents (SSA) (Marcoen, 1992), the PSS (Burger, 1995), the Solitary Coping and Solitary Comfort scales (Larson & Lee, 1996), and the two measures of unsociability mentioned previously in this chapter, that is, the isolation subscale of the Dutch Narcissism Scale (Ettema & Zondag, 2003) and the solitude/insensitivity subscale of the SAS (Clark & Beck, 1991). In fact, the sample used here was one of the samples that was referred to earlier when discussing the associations with measures of unsociability.

The adolescents also completed a set of standard measures of internalizing problems. This set comprised the short version (Roberts & Sobhan, 1992) of the Center for Epidemiological Studies – Depression Scale (CES-D) (Radloff, 1977), the short version (Roberts, Lewinsohn, & Seeley, 1993) of the UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980), and measures of alienation (Jessor & Jessor, 1977) and social anxiety (Fenigstein, Scheier, & Buss, 1975).

A factor analysis with oblique rotation was conducted on the intercorrelations among the solitude-related scales. Three factors were retained which are represented in Table 9.4. A first factor was defined by high loadings on the affinity for aloneness subscale and similar measures such as the solitude subscales of the PPS and the PQ and the Solitary Coping Scale. The second factor was defined by negative loadings for the aversion to aloneness subscale and a similar scale, the

Table 9.4 Factor loadings for exploratory factor analysis with promax rotation of solitude measures

Scale	<i>Solitary</i>		<i>Unsociability</i>
	<i>coping</i>	<i>comfort</i>	
Aversion to aloneness	0.37	-0.97	-0.10
Affinity for aloneness	0.94	-0.21	0.01
Solitude – PPS	0.87	-0.07	-0.12
Solitude – PQ	0.85	-0.04	-0.06
Positive attitude to aloneness (SSA)	0.76	0.04	0.19
Negative attitude to aloneness (SSA)	-0.26	-0.61	0.47
Preference for aloneness (SSA)	0.04	0.40	0.63
PSS	0.30	0.43	0.33
Solitary coping	0.73	0.06	0.16
Solitary comfort	0.37	0.62	-0.13
Isolation	0.30	-0.17	0.69
Solitude/insensitivity	-0.14	-0.08	0.85

Note: Factor loadings greater than 0.40 are in bold.

Table 9.5 Multiple regression analyses predicting internalizing problems from solitude dimensions

Predictor	Depression		Lonelinessa		Alienation		Social anxiety	
	β	r	β	r	β	r	β	r
Solitary coping	0.28**	0.23**	0.13*	0.11**	0.28**	0.33**	0.08	0.16*
Solitary comfort	-0.31**	-0.11	-0.23**	-0.04	-0.30**	-0.05	-0.05	0.03
Unsociability	0.33**	0.35**	0.61**	0.63**	0.62**	0.65**	0.26**	0.25**
Adjusted R ²	0.20	—	0.42	—	0.49	—	0.07	—

* $p < 0.05$.** $p < 0.01$.

negative attitude to aloneness subscale of the SSA, and positive loadings for the Solitary Comfort Scale and the PSS. The third factor, finally, was defined by high loadings for solitude/insensitivity and isolation. The three factors, therefore, could be labeled as *solitary coping*, *solitary comfort*, and *unsociability*, respectively. The latter factor seems to tap into both social avoidance, that is, the tendency to keep away from social situations, and social anhedonia, that is, the inability to enjoy social experiences or social activities (VandenBos, 2007).

Correlations and regression weights, with measures of internalizing problems being regressed on the factor scores for these three factors, are represented in Table 9.5. Higher scores on unsociability were associated with higher scores for all types of internalizing problems. This factor also had the strongest unique association with all these measures in the regression analyses. Higher scores on solitary coping were also associated with higher scores for all types of internalizing problems and were uniquely associated with greater depression and alienation. The scores on the solitary comfort factor, by contrast, were uncorrelated with the measures of internalizing problems and even showed negative unique associations with these measures in the regression analyses.

These findings, then, suggest that compared to other types of affinity for aloneness, such as solitary coping and unsociability in particular, being comfortable with being alone is not associated with internalizing problems. When controlling for these alternative forms of affinity for aloneness, solitary comfort can even have beneficial effects for adolescents. Although the negative effects of unsociability – which is a blend of social avoidance and social anhedonia – are self-evident, the negative impact of solitary coping may indicate that the type of coping determines its associations with well-being and internalizing problems. In their efforts to deal with stress, adolescents may turn to less effective coping strategies such as rumination or avoidant coping when they are alone. Recent research on adolescent loneliness has shown that rumination on being abandoned acted as a mediator between loneliness and depressive symptoms (Vanhalst, Luyckx, Goossens, & Teppers, 2012; Vanhalst, Luyckx, Raes, & Goossens, 2012). Similar processes of

maladaptive coping may provide the link between solitary coping and all sorts of internalizing problems and absence of well-being.

Future Prospects

The two research traditions on children's preference for solitude and adolescents' affinity for aloneness, as described in this chapter, have been reasonably successful. Some empirical evidence has been obtained for each of the key assumptions within each of these traditions. However, while occasionally borrowing a page from the other tradition's book, the two approaches have remained largely isolated from one another. In future work, researchers involved in the two traditions will have to pool their resources and engage in collaborative research projects. Research on solitude in childhood and adolescence, thus united, will have to address important conceptual, developmental, and contextual issues.

At the conceptual level, a mutual cross-fertilization should take place across the two traditions. At the most basic level, researchers could check whether the CSPQ, the newly developed measure of children's preference for solitude (Coplan et al., 2013), and the affinity for aloneness scale are highly correlated among adolescents, as one would expect. The stronger emphasis on underlying motives in the childhood tradition should incite researchers involved in the adolescent tradition to inquire more systematically into the underlying motives for time spent alone. The fact that young people have the sense of control over periods of time that they spend alone and do not feel forced to do so may be the key factor that explains any beneficial effects of solitude. Some preliminary work (Chua & Koestner, 2008) inspired by Self-Determination Theory (SDT) (Ryan & Deci, 2000) seems to point in that direction.

Still at the conceptual level, the concept of aversion to aloneness, as defined in the research program on adolescent development described in this chapter, could be developed further into a full-blown dual model inspired by the childhood tradition. Till now, the subscale that measures this construct has only been used to define one of the factors in our fine-grained analysis of affinity for aloneness in a negative way. As the two subscales show only a small intercorrelation, different groups can be distinguished that represent various combinations of scores on these scales. Preliminary work using cluster analysis yielded three types of adolescents. One group showed true affinity for aloneness (i.e., high score on affinity and low score on aversion), another one showed true aversion to aloneness (i.e., high score on aversion and low score on affinity), and a third group was referred to as indifferent regarding aloneness (i.e., low scores on both affinity and aversion). The first two groups showed some interesting peculiarities (e.g., affinity with aloneness was associated with diminished seeking of social support as a coping style and aversion to aloneness was associated with increased expression of emotions). But the clearest finding was that the indifferent group had a better

profile of psychological adjustment than the other two groups (Teppers, Luyckx, Vanhalst, Klimstra, & Goossens, 2011).

More generally, but always at the conceptual level, researchers should elaborate on important distinctions in both the positive and negative appreciation of time spent alone. Regarding the positive pole, researchers use at least three different constructs: capacity to be alone (Winnicott, 1958); affinity with aloneness, which seems to be the more inclusive term; and preference for solitude. For the negative pole, three constructs again may be distinguished: inability to be alone (Schwab, 1997), aversion to aloneness, and intolerance of aloneness, a term often used in research on borderline personality disorder (Choi-Kan, Zanarini, Frankenburg, Fitzmaurice, & Reich, 2010; see also Meehan, Levy, Temes, & Detrixhe, Chapter 24, this volume).

At the developmental level, researchers can link children's typical form of social withdrawal with subsequent developmental outcomes in adolescence. Using appropriate measures in both developmental periods, they can test the assumption that young people who show unsociability during childhood are better prepared and thus more likely to appreciate the benefits of time spent alone from adolescence onwards (Coplan & Weeks, 2010a). If that is the case, they should score high on measures of affinity for aloneness and low on indices of internalizing problems. This particular developmental outcome could be contrasted with the long-term effects of shyness in childhood. Earlier research has shown that shy or socially inhibited children develop into cautious and reserved adults but with few signs of internalizing problems (Asendorpf, 2010). Finally, such longitudinal work that spans multiple developmental periods can test the assumption that social avoidance in childhood is associated with greater risk for depression in adolescence (Coplan et al., 2013).

At the contextual level, finally, researchers have to deal with even greater challenges. In research on both children and adolescents, it is assumed that young people, who regularly prefer to be on their own to pursue their own interests or often show an affinity for being alone, can also engage in mutually gratifying social interactions on other occasions. How children and adolescents effectively handle this delicate balance between bouts of solitude and bursts of active social interaction is at present poorly understood. The self-report measures employed with older children and adolescents are poorly suited to address this complex question.

Advancing on all these fronts, experts on both child and adolescent development should join forces to try to understand what solitude really is, how it unfolds over time, and how it is related to and co-defined by active social engagement. The present chapter is but a first step toward the establishment of such a comprehensive research program.

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Social Withdrawal during Adolescence and Emerging Adulthood

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Peer relationships are of central importance for healthy psychosocial development and functioning during childhood, adolescence, and adulthood. Peers provide unique opportunities for social-cognitive growth and the development and maintenance of social skills. They also serve as important sources of emotional and social support, can foster positive feelings about the self and others, and function protectively against the effects of interpersonal stressors (Rubin, Bukowski, & Parker, 2006). Without peer relationships, individuals might *miss out* on developmentally formative opportunities and experiences, such as acquiring certain socially competent skills and behaviors and forming intimate best friendships (Rubin, Coplan, & Bowker, 2009). It is also likely that loneliness will ensue, which is a strong predictor of psychological distress, across cultures, and across the lifespan (e.g., Cacioppo, Hawkley, & Thisted, 2010; Heinrich & Gullone, 2006; see Asher & Weeks, Chapter 16, this volume).

In light of this evidence, a central question addressed in this chapter is how adolescents and young adults who avoid and withdraw from peers fare in terms of their development and psychological well-being. Such individuals are often referred to as *socially withdrawn* (Rubin et al., 2009). Due to anxiety, fear, or preference for solitary activities (Coplan & Armer, 2007), socially withdrawn individuals avoid social situations involving unfamiliar and familiar peers and, as a result, spend more time alone than their more sociable counterparts. Although they might encounter rejecting and hostile peers, it is important to emphasize that socially withdrawn individuals spend considerable time in solitude because they *choose* to be alone.

In the past 30 years, social withdrawal during *childhood* has been identified as one of the strongest risk factors for psychopathology (Rubin et al., 2009). However, considerably less is known about the effects of withdrawing from peers during *adolescence* and *emerging adulthood* (Bowker, Rubin, & Coplan, 2012). This research gap that is surprising given that the importance of involvement in close and intimate peer relationships for psychological well-being increases throughout adolescence and into emerging adulthood (Rubin, Bukowski, et al., 2006), but so too does the need for and value placed on solitude and *alone* time (Larson, 1990). The study of social withdrawal beyond the childhood years is an emerging area of research, and this chapter represents the first review of this literature focused specifically on adolescents and emerging adults.

Throughout this chapter, we attempt to synthesize the research on social withdrawal with developmental theory and research to form a comprehensive view of social withdrawal during the adolescent and emerging adulthood developmental periods. We contend that social withdrawal continues to be a risk factor for maladjustment beyond the childhood years but that future research should more carefully consider the developmental characteristics of adolescence and emerging adulthood when selecting adjustment outcomes and interpreting results. We also hope that there will be an increased number of studies considering different motivations for withdrawal and associated outcomes in the next several years. A review of the extant literature and a more detailed discussion of future research directions are included in subsequent text, but we first review some of the defining characteristics of the adolescent and emerging adulthood developmental periods.

Developmental Periods of Adolescence and Emerging Adulthood

Adolescence

The adolescent developmental period refers to the ages of 10–22 years. Adolescence is often described as a period of developmental change and transition connecting the childhood and adulthood/emerging adulthood developmental periods (Collins & Steinberg, 2006). Developmental psychologists distinguish between three subperiods of adolescence, early adolescence (10–14 years), middle adolescence (14–18 years), and late adolescence (18–22 years), although in recent years, the late adolescent developmental period has been studied as part of emerging adulthood (Arnett, 2004).

There are no overarching theories of adolescent development. Instead, theories such as social learning theory (Bandura & Walters, 1963), interpersonal theories (Sullivan, 1953), and social-cognitive theories (e.g., Piaget, 1932) are used to explain different types of functioning during adolescence, as well as different

types of developmental changes. Among the most commonly studied changes by psychologists are those related to *biological maturation* (e.g., pubertal developmental changes including changes in weight and height and the development of sexual characteristics), *cognition* (e.g., the development of abilities to think abstractly and about hypothetical problems, cognitive changes that lead to introspection and rumination), and *social relationships* (e.g., increased time spent with nonfamilial individuals, the development of other-sex peer relationships, increased importance of getting along with and having successful peer relationships; Collins & Steinberg, 2006). Of course, each type of change does not occur independently, but rather is influenced by and influences other types of changes. For instance, pubertal development often leads to emerging social and romantic interests in other-sex peers; involvement with other-sex peers can lead to increases in self-consciousness, particularly about physical appearance and puberty-related changes (Ricciardelli & McCabe, 2001; Lieberman, Gauvin, Bukowski, & White, 2001).

The changes in social relationships that occur during adolescence are particularly important when considering the consequences of avoiding such relationships. For example, as adolescents first begin to spend more time with their peers than their families (Rubin, Bukowski, et al., 2006), their peer experiences become more strongly influential on their psychological well-being. These findings have led to suggestions that socially withdrawn adolescents may continue to experience psychological difficulties well after the childhood years and that some of their psychological difficulties may actually get worse (Rubin et al., 2009). However, another developmental change is the increased value placed on privacy and alone time during adolescence (Larson, 1990). Several studies on this topic demonstrate that solitude becomes more beneficial to psychological health and well-being throughout the adolescent period (Larson, 1990, 1997). This raises the alternative hypothesis, namely, that some of socially withdrawn adolescents' difficulties may actually diminish with age. The studies by Larson and colleagues, however, indicate that solitude may be best for psychological adjustment during adolescence when adolescents engage in *moderate* amounts (30% of waking time). For instance, in one study, adolescents who engaged in moderate amounts of solitude reported more positive adjustment relative to adolescents who never engaged in solitude and those who engaged in solitude often (Larson & Csikszentmihalyi, 1978). Thus, although some solitude may be helpful, large amounts (i.e., as typically experienced by *socially withdrawn* individuals) may continue to have deleterious effects.

Emerging adulthood

There is admittedly a great deal of individual variation in the paths that young people take as they leave adolescence and enter and then develop throughout the third decade of life. Culture, socioeconomic status, and individual characteristics shape the variety of responsibilities, expectations, and opportunities that impact individuals during this period of time. Given this variance, there is also not one

theory that fully captures all developmental pathways out of adolescence and through the third decade of life. However, *emerging adulthood theory* (Arnett, 2000) is useful in capturing some of the unique aspects of this time period that will lay the foundation for understanding the potential developmental impact of social withdrawal during this period of development.

Arnett (2004) has characterized emerging adulthood (18–27 years) as including five important features. First, it is an *age of feeling in-between* as most emerging adults do not see themselves as either an adolescent or an adult. Second, emerging adulthood is an *age of possibilities* as most young people are extremely optimistic and have high hopes for the future. Third, this period of development is an *age of instability* because it tends to be marked by instability in work, relationships, education, and residential status. Next, emerging adulthood is characterized as an *age of identity explorations* because many emerging adults are free to explore identities in the areas of education, work, love, and worldviews. Finally, emerging adulthood is a *self-focused age of life*. This is not meant to suggest that emerging adults are necessarily self-centered but are rather free from social obligations and other responsibilities that allow for a productive focus on the self.

Again, despite the cultural, socioeconomic, and other influences that might limit the extent to which young people experience these various features, these factors reflect some of the aspects of the time period for many that might be impacted by social withdrawal. Furthermore, regardless of this variation, the time period following adolescence is when most young people start the process of becoming self-reliant, autonomous individuals capable of independent decision making and actions. For some, this transition into autonomous roles might occur immediately after adolescence (or in adolescence), whereas for others it might be delayed well into the late 20s or early 30s. Regardless, it is during the period after adolescence that individuals often find themselves in new social settings (e.g., college classrooms, workplace, military) and facing new developmental challenges (e.g., independent decision making, identity development, cohabitation/committed relationships) for which social withdrawal might have significant implications.

Correlates and Consequences of Social Withdrawal in Adolescence and Emerging Adulthood

Social withdrawal and adolescence

The majority of the research on the correlates and consequences of avoiding and withdrawing from peers has focused on young children and elementary school-aged children (Bowker, Rubin, et al., 2012; Rubin et al., 2009). However, the limited research on adolescent social withdrawal has indicated that social withdrawal is a relatively stable construct across childhood and into adolescence (e.g., Oh et al., 2008). That is, children who avoid their peers during childhood tend to continue to

do so after they transition into adolescence. And despite the aforementioned increased importance of privacy and alone time during adolescence (e.g., Larson, 1990), withdrawn adolescents appear to experience difficulties with their peers that are similar to the difficulties that they encounter when they are younger, including peer victimization and peer exclusion (Rubin, Wojslawowicz, Rose-Krasnor, Booth-LaForce, & Burgess, 2006; Oh et al., 2008). However, several studies have failed to find significant linkages between social withdrawal and *peer rejection*, as found in studies of children (e.g., Bowker & Raja, 2011). Peer rejection reflects active dislike of peers, whereas peer exclusion and peer victimization involve behaviors that exclude (e.g., not allowing an adolescent to join into a group activity) and abuse peers (e.g., repeated name-calling, physical victimization). Therefore, it is possible that adolescents begin to respect socially withdrawn adolescents' decisions to avoid their peers, perhaps because of the changes in their own needs for privacy. But adolescents might still not wish to be in their company, likely because their shy and timid behaviors contrast sharply with adolescent social norms and expectations for social interaction and relationship involvement. Adolescents may also continue to victimize withdrawn adolescents because they continue to be viewed as weak and *easy targets* that are unlikely to retaliate or fight back (Rubin, Wojslawowicz, et al., 2006).

Given the importance of interacting with and getting along with peers for positive psychological adjustment during adolescence, it should not be too surprising that growing evidence indicates that socially withdrawn adolescents fare worse psychologically than their nonsocially withdrawn counterparts. Psychological maladaptation outcomes that are concurrently associated with adolescent social withdrawal include loneliness, anxiety, and depressive symptoms (e.g., Mounts, Valentiner, Anderson, & Boswell, 2006; Muris, Merckelbach, Schmidt, Gadet, & Bogie, 2001; Woodhouse, Dykas, & Cassidy, 2012). There is also evidence that the presence and persistence of withdrawal during middle to late childhood in particular place youth at increased risk for the development of psychological difficulties during adolescence including low self-esteem, as well as a wide array of clinically significant anxiety problems (e.g., social phobia, panic/agoraphobia, specific phobia) and depression (e.g., Fordham & Stevenson-Hinde, 1999; Goodwin, Fergusson, & Horwood, 2004; Karevold, Ystrom, Coplan, Sanson, & Mathiesen, 2012; Prior, Smart, Sanson, & Oberklaid, 2000). These latter findings suggest that social withdrawal may actually become a *stronger* risk factor for clinically significant adjustment outcomes during the adolescent developmental period.

Tests of mediation have shown that peer difficulties, such as peer exclusion, explain, in part, some of the psychological difficulties associated with both child and adolescent social withdrawal (e.g., Bowker & Raja, 2011; Gazelle & Rudolph, 2004). It has also been found that withdrawn adolescents who experience high levels of peer adversity display higher levels of social avoidance (e.g., make fewer social initiatives, are easily discouraged by social setbacks; Gazelle & Rudolph, 2004) and become more withdrawn over time relative to withdrawn youth who

experience low levels of peer adversity (Booth-LaForce & Oxford, 2008; Booth-LaForce et al., 2012; Oh et al., 2008). Oh et al. also found that certain same-sex friendship factors (e.g., friendlessness, friendship instability, having a withdrawn friend) predict increased social withdrawal over time, highlighting the importance of socially withdrawn adolescents' group *and* dyadic peer relations for their psychological well-being. Finally, there is evidence that many withdrawn adolescents have negatively biased information processing tendencies (e.g., self-blame tendencies; Burgess, Wojslawowicz, Rubin, Rose-Krasnor, & Booth-LaForce, 2006; Findlay, Coplan, & Bowker, 2009), which have also been shown to explain why socially withdrawn adolescents commonly experience feelings of loneliness, negative affect, and social anxiety.

The extant literature has led Rubin and colleagues (e.g., Rubin et al., 2009) to posit that a *negative feedback loop* exists for socially withdrawn children and adolescents. Anxiety, fears, and self-doubt lead to shy and timid behaviors that invite negative peer treatment, which, in turn, reinforces their fears, anxieties, negative cognitions, and socially withdrawn behaviors. And yet, not all socially withdrawn adolescents have social-cognitive biases and experience psychosocial maladjustment. For example, recent work by Markovic, Rose-Krasnor, and Coplan (2013) has shown that shy young adolescents who perceive their personality to be malleable are less likely to display negative self-attributions and select avoidant strategies to cope with peer conflict relative to their shy counterparts who consider their personality to be fixed.

Other research (e.g., Bowker, Markovic, Cogswell, & Raja, 2012) demonstrates that withdrawn adolescents who display additional atypical and socially inappropriate behaviors (e.g., overtly aggressive behavior) are at greatest risk for peer adversity, but less is known about peer-valued characteristics that may help buffer withdrawn adolescents against peer difficulties. Withdrawn adolescents who experience low levels of group-level peer adversity have been shown to display fewer depressive symptoms and higher levels of prosocial behavior toward their peers (Gazelle & Rudolph, 2004) and become less withdrawn over time (Booth-LaForce & Oxford, 2008; Oh et al., 2008). Research has also shown that withdrawn adolescents with friends are viewed as more sociable by their peers relative to their withdrawn counterparts without friends (Rubin, Wojslawowicz, et al. 2006) and are less likely to self-blame for problems involving their mutual best friends (Burgess et al., 2006). In addition, Booth-LaForce et al. (2012) found that those withdrawn-excluded adolescents who spent more free time with their mothers displayed decreases in their withdrawal over time. These latter findings suggest that involvement in close dyadic relationships (e.g., friends, parents) may provide withdrawn adolescents with *just enough* positive social interaction to help ameliorate some of their social fears and improve their confidence in social situations. In turn, these withdrawn adolescents may become more positively received by their peers because their social behavior comes to more closely approximate the norms of sociability prevalent during the adolescent developmental

period. However, relative to the research on social withdrawal and group-level peer experiences, only a limited literature has examined the importance of dyadic relationships in the lives of young adolescents who are socially withdrawn.

Taken together, it appears that social withdrawal continues to be a strong risk factor for social, emotional, and psychological difficulties during adolescence. There is also growing evidence of significant heterogeneity in the outcomes associated with adolescent social withdrawal, which may be explained, in part, by variability in close relationships and social-cognitive tendencies. So far, much of the research has focused on social withdrawal during adolescence that is motivated by anxiety or fear, which has been referred to as shyness, anxious-withdrawal, and shyness-sensitivity (also anxious-solitude; e.g., Gazelle & Rudolph, 2004; Oh et al., 2008). However, some adolescents' social withdrawal may be due to social disinterest (unsociability) or strong preferences to avoid others (avoidance; Coplan & Armer, 2007). And Asendorpf, Coplan, and others have proposed that the outcomes associated with social withdrawal may depend on the reasons for or motivation underlying the withdrawal (e.g., Asendorpf, 1990; Coplan, Prakash, O'Neil, & Armer, 2004). Studies of different types of social withdrawal during childhood indicate that shyness/anxious-withdrawal is more strongly associated with problematic adjustment indices relative to social disinterest/unsociability, but we know very little about the correlates and consequences of avoidance in childhood and adolescence, as well as the risk associated with unsociability relative to shyness during adolescence (see Bowker & Raja, 2011; Bowker et al., 2012, Coplan et al., 2013, for recent exceptions).

The relative neglect of social withdrawal subtypes in this area of research has limited our understanding about which socially withdrawn adolescents may be most at risk for difficulties and how to best target interventions. Likewise, the emphasis on social withdrawal in relation to school-based peer relationships has resulted in little knowledge about social withdrawal in relation to other significant adolescent developmental changes, such as those related to puberty and cognition, and the impact of social withdrawal in contexts outside of the school that first become relevant to functioning during adolescence, such as places of employment. Do the cognitive changes that occur in adolescence contribute to the enhanced psychological risk associated with adolescent social withdrawal? Might early versus late pubertal development exacerbate socially withdrawn adolescents' fragile self-concepts and contribute to their social wariness? Perhaps socially withdrawn adolescents' behavior is judged less harshly outside of the school context. These questions should be the topic of future investigations. There is also a need for research on how socially withdrawn adolescents fare with other-sex peers. Most of the research on the peer experiences of socially withdrawn adolescents has focused exclusively on group-level peer difficulties in general (e.g., the extent to which an adolescent is excluded by both same-sex *and* other-sex peers) or *same*-sex friendships (e.g., Rubin, Wojslawowicz, et al., 2006). Thus, it is not known whether socially withdrawn adolescents struggle more with same- or other-sex peers or whether

they are able to form other-sex friendships and romantic relationships, which become increasingly common during early and middle adolescence (Rubin, Bukowski, et al., 2006). Another question that merits examination is whether the correlates and consequences of adolescent social withdrawal differ in Western and non-Western societies, which may have different norms and expectations for social behaviors and relationships. Bowker and Raja (2011) found that self-reported shyness, unsociability, and avoidance during early adolescence in India were not related significantly to peer rejection and that the associations between the subtypes of withdrawal and peer exclusion and loneliness were smaller in magnitude than typically found in studies of socially withdrawn children in Western societies. Does any type of socially withdrawn behavior during adolescence carry less risk in non-Western societies because the behavior contrasts less sharply with cultural norms and expectations? Clearly, there is still much to discover about for whom, when, and where withdrawing from peers during adolescence poses the greatest social and psychological risk.

Social withdrawal and emerging adulthood

The heading for this section of the chapter is “social withdrawal *and* emerging adulthood” rather than “social withdrawal *during* emerging adulthood” for a specific reason. There are two different but equally important lines of research that describe the impact of withdrawal on development in emerging adulthood. The first line of work has attempted to understand how withdrawal early in life (i.e., childhood, adolescence) predicts outcomes in emerging adulthood, and the second line of research examines the correlates and consequences of withdrawal during emerging adulthood.

First, there is an existing body of longitudinal work showing that shyness early in life predicts negative outcomes in emerging and young adulthood. For example, Caspi and Silva (1995) found that children rated high on shyness at age 3 scored low on measures of impulsivity, danger seeking, aggression, and social potency (i.e., forceful, decisive, fond of influencing others, and leadership roles; Caspi & Silva) at age 18. Other similar studies have found early shyness to be linked to later introversion and cautiousness (Kagan & Moss, 1962), unassertiveness, depression, and fewer sources of social support (Caspi, 2000) and delayed entry into adult roles (e.g., marriage, parenthood, and stable careers; Asendorpf, Denissen, & van Aken, 2008; Caspi, Elder, & Bem, 1988; Kerr, Lambert, & Bem, 1996). Using a different methodological approach to understand how withdrawal at young ages is linked to development in emerging adulthood, a recent study linked retrospective assessments of Australian and Korean emerging adults’ shyness and unsociability in adolescence (Kim, Rapee, Oh, & Moon, 2008) to functioning in emerging adulthood. Taken together, this line of research suggests that individuals who are socially withdrawn, especially shy, as children and adolescents may enter the third decade of life already at risk for negative outcomes.

Although interesting and informative, retrospective and longitudinal studies do not provide insight into how social withdrawal *during* emerging adulthood may impact the development of individuals currently *in* emerging adulthood. Specifically, it is important to examine the implications of various forms of withdrawal on individuals' attitudes, beliefs, and behaviors in the context of the unique features of a time period. Therefore, the remainder of this chapter will focus specifically on the correlates and consequences of social withdrawal in emerging adulthood.

There is evidence that social withdrawal in all of its various forms (a topic we will address later) is problematic to important aspects of emerging adulthood. For example, identity development has been identified as an important feature of emerging adulthood (e.g., Arnett, 2000; Erikson, 1968), and studies have found that compared to their non-shy peers, shy emerging adults tend to struggle with both exploration and achievement. Shy individuals have been found to report less identity commitment than their peers (Barry, Nelson, & Christofferson, 2013). In the area of career exploration and commitment, shy individuals report lower career identity levels and, in general, less mature attitudes toward career planning and exploration (Hamer & Bruch, 1997). Furthermore, Phillips and Bruch (1988) found that shy undergraduates engaged in less career information-seeking, were more undecided about a potential career, and expressed less interest in interpersonally oriented career fields.

Another important aspect of emerging adulthood is centered around social interactions with peers (e.g., roommates, classmates, workmates) and relationships (e.g., romantic partners, friends, parents). Studies have found that compared to the non-withdrawn peers, shy and withdrawn emerging adults engage in less dating (Leck, 2006), feel less competent in romantic relationships and less socially accepted by peers (Nelson et al., 2008), and report lower-quality relationships with friends, romantic partners, and parents (Barry et al., 2013; Nelson et al., 2008; Rowsell & Coplan, 2012).

In laboratory-based work, studies have shown that in conversations with a stranger, shy individuals report greater frequency of negative and anxious thoughts (especially for men), fewer positive thoughts regarding the interaction, more overt behavioral signs of anxiety, an increase in somatic arousal, more time self-focusing, and, in general, fewer vocal exchanges (Bruch, Gorsky, Collins, & Berger, 1989; Melchior & Cheek, 1990). In sum, social interactions and relationships seem to be an area for which social withdrawal in emerging adulthood appears to be a significant risk factor.

Furthermore, emerging adulthood is a period of exploration for young people including in areas related to sexuality. Emerging evidence suggests that shyness influences sexual attitudes and behaviors among both young men and women. For men, shyness has been associated with more permissive sexual attitudes (e.g., the acceptability of premarital sex, noncommittal sex, and pornography) as well as increased levels of masturbation and pornography use for males (Luster, Nelson, Poulsen, & Willoughby, in press). Though these behaviors may be normative in

emerging adulthood, elevated levels of solitary sexual behavior may exacerbate existing social tendencies and/or relational deficiencies. In contrast, for women, shyness has been associated with more conservative sexual attitudes and fewer sexual partners (Luster et al., in press). Thus, this emerging line of work suggests that withdrawal might influence young people's beliefs and behaviors in areas of exploration common in emerging adulthood.

Finally, with emerging adulthood being a time marked by instability in work, relationships, education, and residential status (Arnett, 2004), some young people struggle in a number of areas, and this appears to be the case for socially withdrawn emerging adults. Again, compared to their non-shy peers, shy emerging adults have more academic struggles (Hojat, Vogel, Zeleznik, & Bornstein, 1988), experience greater loneliness in the transition to college (Mounts et al., 2006), and, in general, report lower levels of happiness (Neto, 2001), well-being (Hotard, McFatter, McWhirter, & Stegall, 1989), religious strength (Barry et al., 2013), and self-esteem and self-perceptions (Nelson et al., 2008), as well as higher levels of anxiety and depression (Nelson et al., 2008).

Taken together, these findings lend support to the notion that social withdrawal, especially shyness, may have the potential to be problematic in emerging adulthood (with some possible protective features) because of the instability, expectations for greater self-reliance, focus on exploration of beliefs and behaviors, and increased demand on individuals to engage in social interactions and relationships. However, the emerging picture is cloudy at best because nearly all of the work conducted with samples of emerging adults has used global and differing definitions of shyness. For example, some researchers have focused on the emotional component of shyness (e.g., fear; "I feel tense when I am with people I don't know well"; Mounts et al., 2006). Others have attempted to incorporate both the emotions (i.e., fear, anxiety) and cognitions associated with shyness (e.g., "I feel painfully self-conscious when I'm around strangers"; Melchior & Cheek, 1990). Still others have focused on the more behavioral components of shyness with items such as *talkative* (reverse coded), *quiet*, *outgoing* (reverse coded), and *shy* (e.g., Nelson et al., 2008).

These examples point to multiple ways in which the term *shyness* has been operationalized. However, that is just one of the murky features of studying social withdrawal in emerging adulthood. There is also a range of behaviors studied in emerging adulthood that reflect different forms of social withdrawal, or in other words, different reasons for withdrawing. For example, there is evidence that whereas some individuals may remove themselves from social settings due to fear and wariness, others do so out of social disinterest or unsociability (Nelson, 2013). Often, operational definitions do not tap these potential differences in the reasons for withdrawing from social settings. For example, studies that take a more global approach to the study of withdrawal (i.e., operationalizing shyness as *talkative* (reverse coded), *quiet*, *outgoing* (reverse coded), and *shy*; e.g., Nelson et al., 2008) fail to capture the potential differences in the motivations for withdrawing.

Also, different perspectives and terms are often employed for overlapping constructs when assessing different types of withdrawal. For example, Barry et al. (2013) employed the term *asocial* to capture any withdrawn behaviors not driven by fear or anxiety. Often those who are shy or engage in social withdrawal are labeled as introverts or low sociable in the personality literature (Briggs, 1988; Cheek & Buss, 1981; Eisenberg, Fabes, & Murphy, 1995; Jones & Briggs, 1984). It is important to note that though shyness may incorporate similar behavioral characteristics to those who are introverted or low sociable, they are unique constructs because they differ in motivations. Introverts and those who are low sociable are characterized by a preference for solitary activity, but these individuals likely experience minimal difficulty interacting with others when required (Buss & Plomin, 1984; Eysenck, 1956). On the other hand, shy individuals may have a strong preference for social activity but are restrained by their experiences of fear and anxiety (Henderson & Zimbardo, 2001). Those who are introverted may specifically desire social environments that are low in stimulation, whereas individuals who are shy may be desirous of stimulation equal to that of extroverts (Henderson, Zimbardo, & Carducci, 2010). Taken together, though various perspectives, including the personality literature, have often used the terms *asocial*, *introvert*, *low sociable*, and *shy* as interchangeable and they may have some overlap, these terms are not synonymous (Briggs, 1988).

In sum, the study of social withdrawal in emerging adulthood suggests that social withdrawal may be of developmental concern, but there are numerous conceptual issues that require further clarification in order to better understand the implications of past work and to guide future work. Specifically, the extant work has often (i) taken global approaches to the study of withdrawal, (ii) assessed different aspects (i.e., emotional, behavioral, or cognitive) of specific constructs (e.g., shyness), (iii) used a variety of terms for similar constructs (e.g., asocial, introverted), and/or (iv) failed to account for the motivations behind the behaviors.

In order to bring greater clarity and organization to the study of social withdrawal in emerging adulthood (and also adolescence), it might be useful to employ the approach-avoidance models of social withdrawal (Asendorpf, 1990, 1993; Gray, 1972) described previously (i.e., shy, unsociable, avoidant) as they are useful in understanding *why* individuals (i.e., motivations) may withdraw from social settings. Indeed, recent work in emerging adulthood suggests that this is a useful and informative framework for better understanding how various forms of social withdrawal might be linked to various correlates and outcomes in emerging adulthood.

Specifically, Nelson (2013) found that shyness, avoidance, and unsociable behaviors were identifiable as three distinct forms of social withdrawal in emerging adulthood and found that each one was uniquely related to indices of maladjustment. Shy individuals (high approach and high avoidance motivations) struggled with self-worth, fear of negative evaluations from others, depression, social comparisons, suicidal ideations, and emotional dysregulation. Avoidant (low approach and

high avoidance motivations) individuals also reported problems in regard to self-worth, depression, self-harm, suicidal ideations, and emotional dysregulation. Also, both shy and avoidant individuals reported lower-quality relationships with best friends, romantic partners, mothers, and fathers compared to the individuals in the study's comparison group. Interestingly, there were very few differences between the unsociable and comparison groups. The unsociable (low approach and low avoidance motivations) individuals reported higher levels of depression than the comparison group but otherwise did not differ from the control group on any other indicator of internalizing or relationship problems.

These distinctions underscore the conceptual and empirical differences between the groups and, therefore, underscore the need to understand and study differences between forms of social withdrawal in emerging adulthood based on approach-avoidance motivations. Indeed, continued use of global measures of withdrawal will mask what appear to be important differences in the development of individuals who withdraw from social settings but who do so for very different reasons. Given the unique features of emerging adulthood, it is critically important that future work examine the correlates and outcomes of each form of social withdrawal in the third decade of life.

For example, in striving to become more autonomous and self-reliant, emerging adults are required to take on greater responsibility in acting for themselves with many important tasks and contexts requiring social interactions (e.g., dating, hanging out in groups, work environments, apartments/dorms, classrooms, and possible religious or volunteer organizations). Therefore, there may be serious ramifications for individuals who choose not to or are unable to successfully interact with others during emerging adulthood. For instance, social withdrawal in all of its forms might have ramifications in individuals' pursuit of an education. It is possible that some shy and avoidant individuals do not enroll in college because their avoidance motivations prevent them from doing so. For those who do enroll, fear or avoidance tendencies might keep them from raising questions or otherwise participating in class, seeking help from professors, or participating in resume-building activities (i.e., clubs, internships, mentored activities) that would enhance their college experience.

Another important aspect of emerging adulthood is the changing nature of relationships with peers, romantic partners, and parents. There is evidence that social withdrawal is linked to lower relationship quality in all of these areas (i.e., friends, romantic partners, and parents; Barry et al., 2013; Nelson et al., 2008), but, again, most of this work employs global ratings of shyness rather than subtypes of withdrawal. Work is needed to examine various aspects of relationships (quality, satisfaction, communication, sexuality, empathy, etc.) for each form of social withdrawal. Indeed, the trajectories of relationship development and maintenance might vary depending on the motivations for withdrawing. For example, for shy individuals, researchers might investigate whether or not their approach motivation leads them to seek out and enter romantic relationships, but then their avoidance

motivations contribute (i.e., less empathy, communication, self-disclosure; Luster, Nelson, & Busby, *in press*) to their experiencing more low-quality relationships than their more sociable peers. Furthermore, it will be important to learn how unsociable individuals form and maintain romantic relationships when they do not have a strong motivation to be with other people. In general, various motivations for withdrawal might impact, among other issues related to romantic relationships, whether or how often one dates and cohabits and beliefs about and timing of marriage.

Subtypes of withdrawal might also influence parent-child relationships. Emerging adults often report a desire to see their relationships with their parents mature into one of equals (e.g., Nelson et al., 2007). Hence, there is little if any evidence that the parent-child relationship diminishes during emerging adulthood; instead, it changes and matures. However, there is little if any work examining the association between subtypes of withdrawal and various aspects of the parent-child relationship including relationship quality, parental knowledge, or parenting styles. It would also be important to understand whether various motivations for withdrawing from social settings might lead some individuals to remain at home with their parents for longer. Although media depictions of those who live at home with their parents often portray these individuals as being more socially inhibited, there are no studies that have examined how different forms of withdrawal might be related to various living arrangements including remaining at home with parents. In sum, emerging evidence seems to suggest that there is reason to be concerned about the risk factors that exist in emerging adulthood for those who withdraw from social interaction, especially avoidant and shy individuals, but points to the possibility that there might be a number of adaptive features as well especially for unsociable emerging adults. This underscores the need for future work to explore for both adaptive and maladaptive correlates and outcomes related to shy, avoidant, and unsocial withdrawal in emerging adulthood.

Conclusion

Taken together, there is much work to be done to better understand the developmental trajectory of individuals who engage in various forms of social withdrawal. Adolescence is a unique period characterized by biological, cognitive, and social changes, and emerging adulthood is unique as young people strive to become self-reliant, autonomous individuals. The nature of relationships, exploration, identity development, instability, and other features of both developmental periods raise concern about the developmental trajectories for those who may choose to withdraw from or, due to fear, struggle with peer relationships and social interactions. Therefore, the study of social withdrawal in adolescence and emerging adulthood deserves much more developmentally informed theoretical and empirical attention.

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Introversion, Solitude, and Subjective Well-Being

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Solitude is primarily a momentary experience, but it is also clear that some people are more prone to experience or desire solitude. The commonly discussed personality dimension of introversion–extraversion describes this difference between people. *Introverts* tend to be reserved, timid, and quiet; *extraverts* are more social, talkative, and bold. Extraverts also tend to be happier (Wilson, 1967). As much as the prototypical *very happy person* might seem quite extraverted, some also wonder if this is really true. Couldn't the quiet bliss of some tea (caffeine-free) and a good book rival the lurid excess of an all-night party? Perhaps introverts are equally happy, but keep it inside, less available for all to see. In this chapter we explore personality differences in propensities for solitude, focusing on the dimension of introversion–extraversion, and its link with psychological well-being.

Overview of Introversion–Extraversion

Popular conceptions of introversion and extraversion are often attributed to Jung, but empirical personality research on the topic has a history that is distinct from these. Beginning in the 1940s, Hans Eysenck (Eysenck & Eysenck, 1985) distinguished a dimension of introversion–extraversion from neuroticism–stability, noting that psychological distress seemed independent of active sociability or lack thereof. He developed his personality model both theoretically and empirically. That is, he developed a physiological theory of traits, suggesting that extraversion results from chronic *understimulation*; thus, extraverts seek compensatory stimulation in risky, social, and generally active behavior. In contrast, introverts meet their stimulation needs much more easily and can become overstimulated in highly social contexts, thus preferring quieter activities. Eysenck also employed the

statistical tool of factor analysis to organize traits and develop questionnaire measures. These analyses revealed which narrower traits clustered together in the introversion–extraversion domain (e.g., sociability, assertiveness, activity, sensation seeking) and also which characteristics were more distinct, deriving another broad trait of neuroticism (anxiety, guilt, shyness) and later psychoticism (antisocial, impulsive, creative).

Other researchers began with natural language yet arrived at similar conclusions regarding the major dimensions of personality. The lexical hypothesis assumes that important traits will occur more frequently in language; they will have many synonyms and occur in many languages (John, Angleitner, & Ostendorf, 1988). Early work by Allport and Odbert (1936) literally scoured the English dictionary for every trait-descriptive adjective and then honed a seminal list of personality characteristics. Various researchers then reduced, amended, and clustered them and then used factor analysis (of personality ratings using the adjectives) to determine which tended to co-occur in people (see Goldberg, 1993 for a review of this history). There has been some variation within, and disagreement with, this approach (Block, 1995, 2010), but most personality psychologists now accept that about five broad factors – extraversion (introversion), emotional stability (neuroticism), agreeableness, conscientiousness, and openness – define personality trait space. Most important for our purposes, the trait of introversion–extraversion appears again. In fact, virtually every attempt at comprehensively describing personality includes a similar dimension. Assessment tools and theoretical explanations sometimes disagree about specific narrower subtraits (as we discuss in more detail in a later section), but the general construct of introversion–extraversion is ubiquitous (see Wilt & Revelle, 2009 for a general review of extraversion).

Viewing introversion–extraversion in the context of these comprehensive taxonomies (i.e., Eysenck's or the “Big Five”) underscores the vast breadth of the trait. The construct encompasses a substantial portion of the entire personality trait space. Narrower traits or facets each contribute to this *super trait*. Despite our focus at the broadest level, it is often useful to study these narrower traits as they can offer additional nuance (see many other chapters in this volume). For example, whereas people who are *shy* desire more social contact while being thwarted by anxiety, people who are *unsociable* seem content with their low levels of social contact. Both shy and unsociable people would score high on introversion. Some distinction might still be made at the level of broad traits, however. Anxiously shy people would also score high on neuroticism whereas merely unsociable people would not. Introversion is statistically and conceptually independent of trait neuroticism – some introverts are prone to negative emotions (a defining feature of neuroticism), but a roughly equal number do not share this propensity. There is nothing about introversion that necessarily suggests increased anxiety, yet some introverts also have it. Constructs that overlap with introversion (e.g., social anxiety, shyness, loneliness, sensitivity, social anhedonia) can be differentiated. Other broad traits (e.g., neuroticism) can be helpful, but narrower or more

dynamic constructs (e.g., anxious attachment) ultimately offer more nuance. Introversion is broad; there are many ways to be introverted.

In addition, rather than the categorical types that the terms *extravert* and *introvert* imply, empirically minded personality psychologists see introversion–extraversion as a continuous dimension with a relatively normal distribution (most people fall near the middle). Linguistic convenience leads us to use these *type* words when we actually mean the full dimension. Also, it is a single bipolar dimension, so associations with introversion are exactly opposite of associations with extraversion. Thus, for example, if we write “Extraverts tend to like spicy food,” readers should understand that we actually mean that people who score higher on the dimension of extraversion like spicy food more than people who score lower, or *introverts*; we might describe the same finding as “Introverts tend to dislike spicy food.”

A primary conceptual characteristic of introversion is increased experience of solitude. There is considerable empirical support for this notion. For example, at the level of onetime self-reports, broad trait introversion is correlated with narrower scales that directly assess the preference for solitude (Burger, 1995; Long, Seburn, Averill, & More, 2003). Other studies have asked research participants to estimate how much time they spend in solitary or social activities, and again results support the idea that introverts spend more time in solitude (e.g., Argyle & Lu, 1990; Leary, Herbst, & McCrary, 2003). Such global self-reports likely suffer from recall biases, but the day reconstruction method attempts to minimize bias by keeping recall short term and concrete. Here, research participants break a specific recent day into about 15 episodes and then answer questions about each episode. This creates something much closer to an actual average of how time was spent compared to a single global question. This improved technique confirms that introverts report more time alone (Srivastava, Angelo, & Vallereux, 2008).

Further eliminating the possibility of recall bias, the experience-sampling method requires subjects to report what they are doing *in the moment* multiple times a day. Averages across such reports again suggest that introverts spend less time in social activities (Asendorpf & Wilpers, 1998; Lucas, Le, & Dyrenforth, 2008). Taking things a step further, experience can be sampled via objective audio recording and then coded by people blind to participants’ dispositions, rather than relying on self-reports. This sampling method once again found that introverts spend more time alone and speak less than extraverts (Mehl, Gosling, & Pennebaker, 2006). Thus, we can be quite confident that introverts are indeed more prone to solitude.

Despite this confidence, the effect sizes in this research are not enormous, and they tend to get smaller as methods go from global reports to specific behavior counts. Accordingly, although introverts may typically spend more time alone compared to their more extraverted counterparts, it is also worth considering that people deviate from their average or preferred behavior frequently (Fleeson, 2001). For example, situational demands (e.g., a job) or other personal goals (e.g., getting a date) might require dispositional introverts to *act* extraverted, and vice versa. Research suggests that this happens frequently. Average (trait) differences in

behavior are robust, but momentary variation is also substantial (Fleeson & Gallagher, 2009). Much of the research we review in the following sections focuses on trait-level differences and thus addresses the issue of whether people who spend comparatively more time in solitude (introverts) tend to be more or less happy than those who spend less time in solitude (extraverts). This, however, is a slightly different question than whether or not moments of solitude are themselves enjoyable or whether some people enjoy solitude more than others.

A Closer Look at the Links Between Introversion and Happiness

At the broad level of analysis, there is fairly robust evidence that people scoring higher on extraversion report higher levels of happiness; introverts are less happy (DeNeve & Cooper, 1998). Despite this, our introverted academic colleagues, friends, and family bristle at this idea. Here we consider their objections and evaluate relevant empirical evidence. Although we ultimately conclude that introversion is indeed associated with lower levels of happiness, our review also provides a more nuanced view of this association.

Objection #1: Happiness measures are biased toward extraverts

Defining happiness can be tricky, and this objection suggests that the way we assess happiness accounts for its association with extraversion. If happiness questionnaires assess only the exuberance of parties rather than the contentment of quiet walks, they would be biased to a more extraverted form of happiness.

This objection is plausible as happiness is a multifaceted construct (Kim-Prieto, Diener, Tamir, Scollan, & Diener, 2005). One part of happiness is certainly affective, consisting of emotional well-being, hedonic balance, or experiencing many pleasant and few unpleasant emotions over time. Beyond emotional experience, most happiness researchers also include a more cognitive assessment that things are *going well*, or life satisfaction. At the empirical level, affective and cognitive measures are related but also somewhat distinct (Lucas, Diener, & Suh, 1996). The combination of hedonic balance (sometimes split between positive and negative emotions) and life satisfaction is often termed subjective well-being. This hedonic approach to happiness is sometimes contrasted with a broader eudaimonic approach. In the eudaimonic tradition, psychological well-being is viewed more broadly to include adaptive personal characteristics. For example, Ryff's (1989) psychological well-being inventory assesses autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. Although some question the usefulness of considering these eudaimonic indicators as happiness *per se* (Kashdan, Biswas-Diener, & King, 2008), they are the kinds of things our introverted objectors often mention as more important than *extraverted happiness*.

There are good reasons to think that the association between happiness and introversion–extraversion might depend on the particular operationalization of happiness, and some widely used measures may indeed favor extraverts. Although there are many ways to organize emotional experience, personality psychologists often use a two-dimensional affect circumplex model (Larsen & Diener, 1992). This conceptual space is defined by a dimension that distinguishes pleasant from unpleasant feelings and a second dimension that varies in terms of arousal. A very popular measure of affect, the PANAS (Watson, Clark, & Tellegen, 1988), rotates these dimensions 45° in assessment. Thus, positive affect captures activated pleasant feelings (enthusiastic, excited, alert), whereas negative affect captures activated unpleasant feelings (nervous, upset, irritable).

The PANAS may favor finding an association with extraversion because of the activation component. For example, manipulating extraverted behavior in the lab leads most directly to activated pleasant feelings, along with lesser degrees of arousal and merely pleasant feelings (McNiell, Lowman, & Fleeson, 2010). Trait extraverts often show increased emotional reactivity to positive incentive mood inductions, but this too appears primarily in activated pleasant feelings (Lucas & Baird, 2004; Smillie, Cooper, Wilt, & Revelle, 2012). In addition, when asked which emotions they would ideally like to feel, introverts tend to choose lower arousal and somewhat less pleasant emotions (Rusting & Larsen, 1995). Turning to actual experience, approach motivation (BAS), a trait similar to extraversion, moderates the within-person correlation between pleasantness and arousal (Kuppens, 2008). That is, high-approach people (extraverts) have a positive correlation between arousal and valence in momentary feelings, whereas low-approach people (introverts) have a negative correlation (i.e., introverts feel better when they feel less aroused). Thus, if happiness is defined solely as activated positive affect, introverts may not even want to be happy (at least as much as extraverts). Indeed, the correlation between extraversion and pleasant affect tends to be stronger for aroused states; however, the correlation does not reverse with lower arousal pleasant states (e.g., Mitte & Kämpfe, 2008; Rusting & Larsen, 1995; Tsai, Knutson, & Fung, 2006; Zelenski & Larsen, 1999). Moreover, two important meta-analyses confirm that the pure pleasantness dimension (moderate arousal) is clearly correlated negatively with introversion but that the magnitude is somewhat smaller compared to activated pleasant affect (Lucas & Fujita, 2000; Steel, Schmidt, & Shultz, 2008). In the largest and most recent meta-analysis, Steel et al. (2008) reported a small correlation with negative affect, suggesting that extraversion might even predict more low-arousal positive feelings (e.g., relaxed or content, the pole opposite high activated unpleasant affect in a circumplex model). Thus, the particular type of pleasant affect seems to moderate the strength of the extraversion–happiness link, but still no specific affects favor introversion.

Considering other aspects of happiness (e.g., life satisfaction, meaning), we still fail to find evidence that introverts are happier. For example, our objecting introverts often tell us that they have meaning in their lives, that they are satisfied,

and that this is more important than ecstasy. The data, however, suggest that even on these measures, introverts score lower than extraverts. For example, introverts score lower than extraverts across all scales of Ryff's (1989) psychological well-being inventory (Abbott et al., 2008; Cooper, Okamura, & McNeil, 1995). More comprehensively, meta-analyses show a clear positive association between life satisfaction and extraversion (DeNeve & Cooper, 1998; Lucas & Fujita, 2000; Steel et al., 2008). Steel et al. investigated a *quality of life* category of happiness that included the Ryff scales and similar others and again found a positive association with extraversion. Thus, we conclude that the association between extraversion and happiness cannot be fully explained by biases in the definition or measurement of happiness.

Objection #2: Extraversion measures are biased toward happiness

This objection notes that some models/measures of extraversion actually include positive emotions as items or facets (e.g., the NEO Personality Inventory-Revised). With this in mind, it is perhaps unsurprising that they correlate with happiness, particularly the emotional facets of happiness. In the *extreme form* needed to refute the idea that introverts are less happy, this objection suggests that including positive affect confounds measurement, thus obscuring the *true* association. A less extreme form must concede that positive affect is, in fact, a part of extraversion, thus also conceding an association between happiness and extraversion. The strong form is difficult to defend, however, because decades of factor analyses support the idea that people who experience more positive affect also tend to be social, active, and assertive (i.e., they also have the other facets of broad extraversion). Thus, based on the logic of factor analysis alone, we would expect that other facets of extraversion would correlate with positive affect whether it is viewed as part of the broad construct or as a criterion variable. In other words, removing positive affect from a broader extraversion measure should not substantially alter that broader measure's association with happiness (see Steel et al., 2008, p. 140, for examples).

Turning to the data, it appears possible that a construct akin to positive emotionality could be the common core that links facets of extraversion with subjective well-being. For example, facets like sociability and assertiveness predict life satisfaction considerably worse than cheerfulness or positive emotion (Schimmack, Oishi, Furr, & Funder, 2004). Nonetheless, the extent to which positive emotionality is explicitly included in measures of broad extraversion does not seem to influence the correlations with happiness very much. For example, the two meta-analyses that explored this issue found that the NEO (which includes a positive emotions facet) and the Eysenck Personality Questionnaire (EPQ) (which does not) correlate with various happiness indicators (positive affect, life satisfaction, quality of life, etc.) very similarly (Lucas & Fujita, 2000; Steel et al., 2008). Interestingly, however, the Eysenck Personality Inventory, which differs from the EPQ by including a substantial impulsivity component, tends to correlate with

happiness indicators significantly less strongly than the EPQ or NEO. Thus, the particular facets of introversion–extraversion can have some influence on the magnitude of the happiness link. That said, we cannot conclude that a positive affect *confound* explains the association. Rather, valid overlap between the constructs of extraversion and well-being requires theoretical explanations (as we discuss in a later section).

Objection #3: Introverts are happier in cultures that aren't so individualistic

This objection does not fully refute the idea that introverts report less happiness, but it suggests a boundary condition. That is, much of the research on extraversion and happiness is conducted in Western cultures that prize individualism and assertiveness (particularly the United States); the pattern might be different in cultures that place greater value on thoughtfulness, passivity, and quiet reflection (see Averill & Sundararajan, Chapter 6, this volume). Furthermore, introverts in individualistic cultures might be happier if people just stopped expecting them to act more extraverted.

Turning to the data, this objection has some merit, but cannot be true in its strongest form. That is, no culture appears to produce introverts that report more happiness than their extraverts. However, cultural differences appear to moderate the strength of the extraversion-happiness association. For example, Lucas et al. (1996) found a positive correlation between extraversion and positive affect across 39 different cultures, yet they also found that social situations were more rewarding in individualist cultures. Similarly, Fulmer et al. (2010) reported that extraversion predicted life satisfaction, positive affect, self-esteem, and overall happiness more strongly in cultures that tended to have higher levels of average extraversion. In other words, having a personality that fit the culture was associated with higher subjective well-being. The particular manifestation of introversion might also be important. For example Chen, Wang, and Cao (2011) found that, among Chinese children, shyness predicts happiness whereas unsociability predicted unhappiness. They explain that the social inhibition of shyness is valued, whereas a diminished interest in connecting with others violates cultural norms (though these associations may also change along with Chinese culture over time; see Chen, Cen, Li, & He, 2005).

Other data suggest that the particular operationalization of happiness might be important. That is, extraversion may predispose people to experience positive affect regardless of culture, but the satisfaction that follows might depend on cultural factors (Schimmack, Radhakrishnan, Oishi, Dzokoto, & Ahadi, 2002). Consistent with this idea, Hong Kong Chinese and Asian Americans seem to value low-arousal pleasant affect, whereas Anglo-Americans view high-arousal pleasant affect as ideal (Tsai et al., 2006). Although extraverts experience more high-arousal positive affect across all these cultures, the discrepancy in ideal affect enhances or diminishes overall well-being.

Objection #4: Introverts have fewer, but stronger, friendships – enough to create happiness

This objection assumes that good interpersonal relationships are a primary cause of happiness and that introverts' superior relationships cause them greater happiness. We have already reviewed sufficient evidence indicating that introverts are less happy than extraverts, and thus, this objection must be false in its strong form. However, it is worth further considering the links among introversion, social relationships, and happiness.

First, introverts do have friends and do engage in social activities. Moreover, introverts appear to enjoy socializing as much as, if not more than, extraverts (Fleeson, Malanos, & Achille, 2002; Lucas et al., 2008; Srivastava et al., 2008). Introverts are not necessarily *shy*; social anxiety is much more related to trait neuroticism. Moreover, they have social skills equal to extraverts', though some contexts may obscure those skills (Lieberman & Rosenthal, 2001). In addition, strong interpersonal relationships appear important to happiness. Diener and Seligman (2002) concluded that such relationships were likely the only necessary (but still not sufficient) condition for extreme happiness. The happiest people had stronger friend, family, and romantic relationships. However, both the quality and the *quantity* of social interactions were important. The happiest people also reported spending the least time alone and the most time with their family, friends, and partners in daily reports. This result was corroborated by another study that coded momentarily sampled audio recordings (Mehl, Vazire, Holleran, & Clark, 2010). The study also found that happy people had more substantive conversation and less small talk, but introversion–extraversion did not explain the difference. We have already reviewed evidence suggesting that introverts spend more time alone, and thus extraverts likely derive more benefit from their larger quantity of social interaction.

It also seems that, contrary to the intuitions of our objectors, extraverts may have higher-quality social relationships. The association with quality is weaker and less consistent than with quantity, but there are some suggestions. For example, in a longitudinal study of new university students, introverts consistently (i.e., over many time periods) perceived less support from their peers (Asendorpf & Wilpers, 1998). On the other hand, introversion–extraversion was not significantly associated with conflict in these relationships. Other research suggests that introverts report lower global relationship quality and that introversion is correlated with avoidant and insecure attachment styles, a suboptimal profile (Noftle & Shaver, 2006; see also Mikulincer & Shaver, Chapter 3, this volume). Attachment appeared much more important to relationship satisfaction than extraversion, but the data make it very hard to argue that introverts have better relationships than extraverts. Additionally, other factors such as agreeableness, emotional stability, and conscientiousness appear more important to romantic relationships than introversion–extraversion (Botwin, Buss, & Shackelford, 1997; Kelly & Conley, 1987). Thus, despite some associations, it appears that the *quantity* of social

relationships and time spent socializing likely contributes more to the difference between introverts' and extraverts' happiness than differences in the *quality* of those social relationships.

Objection #5: C'mon?!? My introvert friend and I are happy

By this point in our review, the data seem pretty clear: extraverts are happier than introverts. Nonetheless, many introverts seem happy (cf. Hills & Argyle, 2001); how can this be? The answer is relatively straightforward. Most people are happy (Diener & Diener, 1996), most of the time (Zelenski & Larsen, 2000). That is, even very disadvantaged people report a hedonic balance and sense of satisfaction that is above the midpoint of measurement scales. Moreover, pleasant emotions are by far the most frequent in momentary experience. Thus, the research we have reviewed suggests not that introverts are miserable, but simply that they are somewhat less happy than the very happy extraverts. In addition, many other factors beyond trait extraversion predict happiness. As a single predictor, extraversion does well compared to other predictors and is often described as one of the best (Diener, Suh, Lucas, & Smith, 1999), explaining as much as 28% of the variance in positive affect (disattenuated, Steel et al., 2008). That said, trait *neuroticism* may be even stronger, especially for some (un)happiness indicators (see Vittersø & Nilsen, 2002), and the interaction between introversion and neuroticism may further add substantial predictive power (Lynn & Steel, 2006). In sum, most introverts are somewhat happy, but it seems possible that they could become happier like their more extraverted friends.

Why Does Introversion–Extraversion Predict Happiness?

Understanding what causes differences in introversion–extraversion may also suggest reasons for why the trait predicts happiness. At a broad level, both traits and happiness are quite (though far from completely) heritable and likely have common genetic sources (Eid, Riemann, Angleitner, & Borkenau, 2003; Weiss, Bates, & Luciano, 2008). That is, the same genes may contribute to both personality and happiness. A few theories of extraversion suggest physiological causes that might stem from genetic variations and lead to differences in behavior. For example, Eysenck (Eysenck & Eysenck, 1985) argued that extraverts were cortically under-aroused or less sensitive to external stimulation. Further assuming an optimal level of arousal, he suggested that their bold, outgoing, lively approach to life provided the stimulation they require, whereas introverts' quieter demeanor helped avoid overstimulation. Eysenck's explanation is much broader but helps explain why extraverts might seek out pleasant social situations more than introverts, that is, because such situations tend to be arousing. Although the exact physiological mechanism that Eysenck proposed (cortical arousal) is probably

incorrect, the notion that greater participation in social activity might cause extraverts' higher happiness remains influential. Suggesting a slightly different cause, extraverts' social participation and resulting enjoyment may stem from being noticed; extraverts thrive on social attention, and their enthusiastic demeanor may help attract it (Ashton, Lee, & Paunonen, 2002). Regardless of the particular reason, extraverts do spend more time in social situations. However, it is less clear whether this social interaction causes their happiness or whether their happiness causes social interaction.

In studies using day reconstruction and experience-sampling methods, the amount of time spent in social situations partially mediated the association between trait extraversion and happiness (Lucas et al., 2008; Srivastava, et al., 2008). This suggests that extraverts might be happier, in part, because they socialize more. Despite similar results, these authors diverge on how persuasive they find the partial mediation. Both agree, however, that social participation seems unlikely to fully account for extraverts' happiness. Other research has used experimental methods with short-term manipulations and extrapolated results to personality implications. For example, Fleeson et al. (2002) found that asking participants to act extraverted produced substantially more positive affect than asking them to act introverted, suggesting that sociability might cause happiness. However, the instructions were broader than sociability, so it is possible that other aspects of extraverted behavior (e.g., assertiveness, activity) instead produced the positive affect. In addition, experimentally inducing positive moods seems to create feelings of sociability and preferences for social situations (Whelan & Zelenski, 2012a), demonstrating that the reverse causal direction is also possible. That is, happiness, or something like it, may cause sociability or extraversion.

This possibility is consistent with another prominent collection of theories suggesting that the causal core of extraversion is reward sensitivity or a propensity for positive affect more directly (see Carver, Sutton, & Scheier, 2000; Elliot & Thrash, 2002; Zelenski & Larsen, 1999). For example, Gray (Gray 1981; Gray & McNaughton, 2000) suggested that the conceptual personality space defined by extraversion and neuroticism derived from two independent brain systems that produce approach and avoidance motivation. Individual differences in the strengths of these systems created the more observable traits of extraversion and neuroticism respectively. Accordingly, extraverts are more likely to notice and respond vigorously to reward cues in the environment and likely experience more positive affect as a result. Consistent with this view, extraverts respond to positive mood inductions with more positive affect than introverts (Larsen & Ketelaar, 1991), particularly when pursuing incentives (Smillie et al., 2012). In addition, extraverts tend to select pleasant rather than social situations when these factors vary independently (Lucas & Diener, 2001), and reward sensitivity may link the other facets of extraversion better than sociability (Lucas et al., 1996, but cf. Ashton et al., 2002). Moreover, as our knowledge of relevant neurophysiology improves, it appears largely consistent with the general idea of a reward system being important to

extraversion, for example, a role for dopamine (Depue & Collins, 1999) and areas of the brain involved in reward processing and positive affect being associated with extraversion (e.g., Canli, Sivers, Whitfield, Gotlib, & Gabrieli, 2002; DeYoung et al., 2010; Hermes, Hagemann, Naumann, & Walter, 2011).

Slightly different than the reward reactivity view, it is also possible that extraverts simply have higher baseline positive affect, largely regardless of situational variation (Gross, Sutton, & Ketelaar, 1998; Lucas & Baird, 2004). This is not to say that they experience no hedonic variability, but that their average *set point* tends to be higher across most situations. Most reactivity studies have been conducted in laboratory settings, and it is difficult to operationalize and assess reward reactivity in daily life. That said, introverts enjoy social interactions about as much as extraverts (Lucas et al., 2008; Srivastava et al., 2008), arguing against a *social reactivity* view (Argyle & Lu, 1990). Said another way, extraverts report more positive affect than introverts even when alone.

From a more cognitive perspective, part of the happiness difference between introverts and extraverts might be explained by differences in interpretation or mood regulation. That is, introverts may be less prone to notice or seek out pleasant situations and experience and less likely to maintain positive feelings when they occur. Consistent with this idea, extraverts maintain pleasant moods longer, while introverts maintain unpleasant moods longer, following positive and negative laboratory mood inductions respectively (Hemenover, 2003). Extraverts also maintained their pleasant moods better than introverts when confronted with an ambivalent mood induction (i.e., with both pleasant and unpleasant aspects; Lischetzke & Eid, 2006). Additionally, questionnaire data support the idea that mood maintenance ability, as an individual difference, partially mediates the association between extraversion and subjective well-being (Kämpfe & Mitte, 2010; Lischetzke & Eid, 2006). Extraverts also seem to choose pleasant stimuli or situations more, at least in some contexts. For example, Tamir (2009) suggested that pleasant moods might be more useful to extraverts and showed that they chose positive tasks and stimuli when they anticipated a future effortful task. That is, extraverts were more likely than introverts to upregulate mood, perhaps because they believed positive moods would help their performance. Independent of current mood states, extraverts also display positive cognitive biases (Rusting, 1998; Zelenski 2008). For example, extraverts rate the likelihood of positive future events as higher (Zelenski & Larsen, 2002), evaluate hypothetical events more positively (Uziel, 2006), interpret ambiguous homophones more positively (Rusting, 1999), and write more positive story completions than introverts (Rusting). In short, extraverts appear more prone to positive thoughts, and this might help them seek out and maintain pleasant moods. Of course it is also possible that frequently experiencing happiness helped shape extraverts' positive cognitive biases over time.

A final explanation suggests that social pressures, stigma, subtle discrimination, and so on might contribute to introverts' diminished well-being, particularly in more extraverted societies (cf. Cain, 2012). Interestingly, introverts in US samples

do not see themselves as any less *normal* than extraverts, but extraverts do see themselves as more unique than introverts do (Wood, Gosling, & Potter, 2007). Although examples of introverts having difficulty fitting in are easily imagined (e.g., parties, group work, public speaking), it is unclear whether they outnumber examples of extraverts having difficulty conforming to situational norms (e.g., libraries, individual projects, yoga). Clearly more empirical work is needed to assess the validity of a stigma explanation.

Conclusions and Directions for Future Research

In sum, it is clear that extraversion predicts happiness. Although the strength of this association depends somewhat on how happiness and extraversion are defined, the general link remains robust. Many potential explanations for extraverts' higher happiness exist, and it seems likely that more than one could be correct. Future research will be useful in further developing these process explanations. At present, social participation, reward reactivity, set point, and mood maintenance views are all somewhat supported. There is considerably less support for the ideas that extraverts fit social situations better or enjoy social situations more than introverts. In fact, virtually everyone seems to enjoy socializing more than spending time alone.

With this in mind, it seems useful to ask the question: would introverts be happier if they acted more like extraverts? Traits and their links with happiness are fairly stable over time (Abbott et al., 2008; Costa & McCrae, 1980), but there is some nontrivial change too (Roberts & DelVecchio, 2000). Moreover, changes in trait extraversion (and neuroticism) seem to co-occur with, and may even precede, changes in happiness (Boyce, Wood, & Powdthavee, 2013; Scollon & Diener, 2006). In the short term, introverts are clearly capable of extraverted behavior and, in fact, exhibit it quite often (Fleeson & Gallagher, 2009). Moreover, when introverts act extraverted in their daily lives, they experience more positive affect, just as extraverts do, and this pattern holds across contexts (Fleeson et al., 2002); introverts are not just enjoying dancing boldly while alone in their apartments. Even when instructed to act extraverted in lab settings, introverts still report substantially more enjoyment compared to when instructed to act introverted or when they receive no instructions (McNiel & Fleeson, 2006; Zelenski, Santoro, & Whelan, 2012). It is possible that hidden costs mitigate the happiness benefit of acting extraverted, but these costs have been elusive in empirical work. For example, when instructed to act extraverted, introverts do not experience concurrent negative affect, show indications of self-regulatory depletion (Zelenski et al., 2012), or report greater effortfulness (Gallagher, Fleeson, & Hoyle, 2011). In fact, trait introverts even report feeling more authentic when they behave extraverted compared to when they behave introverted (though only if you ask them in the moment; they retrospect the opposite; Fleeson & Wilt, 2010; Whelan & Zelenski, 2012b).

Thus, the evidence to date suggests that acting extraverted is both possible and potentially beneficial for trait introverts. An important caveat is that the costs of this *counter-dispositional* behavior have not been assessed over the long term (cf. Little, 2008). It remains plausible that prolonged periods of extraverted behavior would drain trait introverts or that the negative consequences do not appear until after time has passed.

Finally, as much as extraversion, both as a trait and momentary behavior, seems to promote positive affect, we also recognize that there are other important things in life and other *trade-offs* that come with being more or less introverted. For example, introverts appear to more easily regulate their behavior; extraverts suffer cognitive and emotional deficits when asked to act introverted (Gallagher et al., 2011; Zelenski et al., 2012). Taking an evolutionary perspective, Nettle (2006) suggests that extraverts benefit from having more sexual partners and exploration than introverts but that they also suffer because of their risks (e.g., with injuries, family instability). In addition, introverts do better on problem-solving tasks (e.g., Moutafi, Furnham, & Crump, 2003) and academic knowledge tests (Rolphus & Ackerman, 1999). Our purpose here is not to review all the ways introverts outperform extraverts, but rather to acknowledge via a few examples that being extraverted is not necessarily better than being introverted. Extraversion is, however, clearly more conducive to happiness, and thus trait introverts might seriously consider adding a little more extraverted behavior to their days.

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Social Approach and Avoidance Motivations

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Belongingness is a central human need (Baumeister & Leary, 1995). Lack of social bonds or their low quality has a causal impact on well-being, health, and even mortality (Birditt & Antonucci, 2007; Cohen, Gottlieb, & Underwood, 2000; House, Landis, & Umberson, 1988). Given this tremendous importance, it is essential for people to have satisfying social relationships. However, individuals differ in their ability to initialize social interactions and maintain social ties. We take a motivational approach to explain why some individuals are socially successful and others are not. More specifically, we focus on the dispositional motivation to approach positive social outcomes, such as acceptance and intimacy, and the dispositional motivation to avoid negative social outcomes, such as rejection and loneliness. The former dispositional motivation is typically called *social approach motivation*, whereas the latter one is typically called *social avoidance motivation* (McClelland, 1985).

Social approach and avoidance motivations are two fundamental motivational dimensions that differ in the cognitive representation of the end state that is to be approached or avoided. In social approach motivation, behavior is directed by a positive (i.e., desirable) end state, whereas in social avoidance motivation, behavior is directed by a negative (i.e., undesirable) end state (Elliot, Gable, & Mapes, 2006). Most social situations are ambiguous (Baldwin, 1992) and can be interpreted in a positive or a negative way. For example, a smile from a colleague can be interpreted as an invitation to interact or as sarcasm. Individual differences in social approach and avoidance motivations affect the interpretation of and reaction to social situations like these.

In this chapter, we will demonstrate processes that underlie the positive and negative outcomes of social approach and avoidance motivations. Taking a developmental perspective, we will explore how these processes might change across the lifespan. Finally, we will discuss the implications of the research on

social approach and avoidance motivations for interventions to prevent social isolation and the possible developmental specifics of such interventions.

Approach and Avoidance as Two Fundamental Systems

The idea that there are an appetitive system that regulates responses to potentially rewarding stimuli and an aversive system that regulates responses to potentially punishing stimuli has a long history in many psychological domains such as in research on affect (positive and negative affect, Watson & Tellegen, 1985), personality (extraversion and neuroticism, Eysenck, 1963), cognitive evaluation (evaluation of positive and negative attributes, Cacioppo, Gardner, & Bernston, 1997), neurophysiology (cerebral asymmetry, Davidson, 1992), and motivation (behavioral activation and inhibition system, Gray, 1982; discrepancy-reducing and discrepancy-enlarging system, Carver & Scheier, 1981). Some researchers supposed that the distinction between appetitive and aversive systems is fundamental and innate (Carver, Sutton, & Scheier, 2000; Elliot & Covington, 2001), an assumption that has been also supported by empirical evidence (Gable, Reis, & Elliot, 2003). As Gable and colleagues put it: "...this basic distinction may serve as a general organizing construct underlying a variety of more specific dispositional processes in the areas of emotion, motivation, and personality" (p. 369).

One of these specific dispositional processes in the area of motivation refers to social approach and avoidance motivations. It seems that social approach and avoidance motivations share commonalities with other constructs of the appetitive and aversive system but are not identical. For example, Nikitin and Freund (2011) found that social approach motivation is moderately correlated with extraversion and behavioral activation system, whereas social avoidance motivation is moderately correlated with neuroticism and behavioral inhibition system. The main differences between the constructs might lie in their focus. Whereas behavioral activation and inhibition or extraversion and neuroticism have a more general focus on (social) incentives and threats, social approach and avoidance motivations focus on what drives peoples' behavior, cognitions, and emotions in interpersonal situations characterized by possible acceptance and rejection (for a more elaborate discussion on similarities and differences between motivation and personality, see Zelenski, Sobocko, & Whelan, Chapter 11, this volume).

Social Approach and Avoidance Motivations and Related Constructs

Social approach and avoidance motivations are not only part of the fundamental appetitive and aversive systems; they are also associated with other constructs in psychology. For instance, social approach and avoidance motivations have a long

history in the shyness literature (Lewinsky, 1941). Shyness has been typically characterized as a motivational approach-avoidance conflict: "A person is motivated to approach another person, but this approach tendency is inhibited" (Asendorpf, 1990, p. 721).

Rejection sensitivity is another construct that overlaps with social avoidance motivation. Similar to social avoidance motivation, rejection sensitivity is part of the general aversive motivational system (Downey, Mougios, Ayduk, London, & Shoda, 2004). Further, there are similarities in experience and behavior. Rejection sensitive are people "who anxiously expect, readily perceive, and overact to rejection" (Downey & Feldman, 1996, p. 1327), which is also true for high social avoidance motivation (see Gable & Berkman, 2008). Moreover, rejection sensitivity has been defined in terms of "generalized negative social expectation: fear and apprehension that interactions with others will result in rejection, discomfort, and suffering" (Mehrabian, 1994, p. 98). Sensitivity to rejection is thus the core of social avoidance motivation as the anxiously expected rejection is the negative end state that is to be avoided. Not surprisingly, rejection sensitivity and social avoidance motivation are often used synonymously (Elliot et al., 2006; Nikitin & Freund, 2010b).

Finally, although social avoidance motivation is associated with similar behavior and experience as social anxiety disorder (such as being shy when meeting new people or being withdrawn in unfamiliar social settings; Stein & Stein, 2008), social avoidance motivation does not reach the diagnostic criteria for social anxiety disorder. The main difference between social avoidance motivation and social anxiety disorder might be thus the difference in the intensity of the associated experience and behavior.

Historical Roots of the Research on Social Approach and Avoidance Motivations

Individual differences in approach and avoidance motivations have been investigated in different domains, mainly in the domains of achievement (Elliot & Church, 1997), power (Veroff, 1992), and affiliation (Gable, 2000). Two of the first researchers to differentiate between approach and avoidance in the affiliative domain were Mehrabian and Ksionzky (1970). Whereas initial research on affiliation was based on the assumption of a single dimension of dispositional affiliation (e.g., Bass, 1967), Mehrabian and Ksionzky argued that it is difficult to integrate the diverse findings reported in the literature on affiliation into a single framework. They therefore proposed two dimensions of affiliative attributes that in their view provided a more satisfactory integration: generalized positive social expectations and behaviors (i.e., social approach motivation) and generalized negative social expectations and behaviors (i.e., social avoidance motivation).

The considerable research based on this distinction has shown that social approach and avoidance motivations are largely independent of each other and that they exhibit theoretically different (and not simply inverse) patterns of relationships with social experience and behavior (see Mehrabian, 1994, for a summary of the research). For instance, social approach motivation was found to be positively associated with judged similarity and compatibility with others, favorable impressions of strangers, self-disclosure, confidence, and positive interactions with others. This positive behavior is probably the reason why people with high social approach motivation are more liked by others than those with low social approach motivation (see Mehrabian, 1994): They are described as friendly, affectionate, sincere, cooperative, and popular (McAdams & Powers, 1981). In contrast, social avoidance motivation was found to be negatively associated with assertiveness, leadership, competition performance, confidence, and ability to deal with threat and hostility and to be positively associated with submissive social behavior (Mehrabian, 1994). Although people with high avoidance motivation do not have less social interactions than others, they report low popularity (Mehrabian, 1994), dissatisfaction with close social relationships (Downey, Freitas, Michaelis, & Khouri, 1998), and feelings of loneliness (Cutrona, 1982; Gable, 2006).

More recent research on dispositional approach and avoidance motivations has focused on the cognitive, behavioral, and emotional processes that underlie the association between dispositions and their consequences (e.g., Gable & Berkman, 2008). In the next few sections, we will discuss these processes and how they mediate the association between social approach and avoidance motivations and their social and emotional outcomes. We will start by discussing the contexts in which the processes might take place.

Establishing and Maintaining Social Relationships as a Function of Social Motivations

Previous studies have found that social approach motivation has positive consequences and social avoidance motivation has negative consequences for social success in samples of strangers (Nikitin & Freund, 2010b), in acquaintances like students taking the same class (McAdams & Powers, 1981), in friends (Gable, 2006), and in romantic relationships (Downey et al., 1998). This evidence suggests that these dispositional motivations have an impact on establishing as well as maintaining social relationships.

The process of establishing new social contacts is accompanied by uncertainty and risk (Neuberg, 1996). As avoidance motivation is associated with the avoidance of undesired end states, it involves a state of vigilance to ensure against losses and, therefore, leads to risk-averse behavior (Crowe & Higgins, 1997). As a consequence, social avoidance motivation leads people to decide against participating in a new social situation and to prefer to miss the chance of establishing a new social

relationship than expose themselves to possible failure (Eiser & Fazio, 2008). It seems that it is mainly due to the fear of negative evaluation by others. As Beck and Clark (2009) found, social avoidance motivation was related to a preference for social situations that provide no evaluation from others over social situations that do provide such evaluative information. In contrast to social avoidance motivation, social approach motivation is positively associated with relationship initialization. As Nurmi and colleagues (Nurmi, Toivonen, Salmela-Aro, & Eronen, 1996) reported, approach-oriented social strategies lead to success in initiating peer relationships.

The process of maintaining social relationships is accompanied by behaviors related to persistence and intensifying one's relationship (e.g., Johnson & Rusbult, 1989; Van Lange et al., 1997). People with high attachment anxiety toward their romantic partner (which is positively related to social avoidance motivation, Nikitin & Freund, 2010b) tend to avoid the conflicts and rejection they fear in their romantic relationships (Gable & Impett, 2012). In contrast, people with high attachment avoidance orientation (which is negatively related to social approach motivation, Nikitin & Freund, 2010b) are inclined to pursue fewer approach goals in their romantic relationships. Approach goals such as increasing intimacy are likely to involve an augmented level of closeness with which people high in attachment avoidance orientation may feel uncomfortable and therefore try to avoid (Gable & Impett, 2012). In line with these findings, engaging in sex due to avoidance motivation (e.g., to avoid disappointing one's partner) was found to be negatively associated with interpersonal well-being and detrimental to the maintenance of relationships over time. On the other hand, engaging in sex due to approach motivation (e.g., to make one's partner feel good) was positively associated with personal and interpersonal well-being and had positive effects on the maintenance of relationships (Impett, Gable, & Peplau, 2005). In addition, in a short-term longitudinal study of dating couples, Impett et al. (2010) found that individuals who were high in approach motivation were rated as more satisfied and responsive to their partner's needs than people who were low in approach motivation. Also, people who scored high in avoidance motivation were rated as being less satisfied and responsive than those who scored low in avoidance motivation. Moreover, Impett and colleagues found that it was particularly dissatisfying to be in a relationship with a partner who was merely focused on avoiding negative outcomes in the relationship.

In summary, social approach and avoidance motivations are influential in establishing as well as maintaining social ties. However, it has yet to be systematically tested whether the cognitive, emotional, and behavioral processes underlying the effects of social approach and avoidance motivations are context independent or context related. As we do not have any assumptions about substantial differences between familiar and unfamiliar social contexts with respect to the processes of social approach and avoidance motivations, we will handle both contexts equally. However, we should keep in mind that we do not know whether all of the processes found in one context are also applicable in the other.

Cognitive, Emotional, and Behavioral Processes of Social Approach and Avoidance Motivations

Cognitive processes

Perception and interpretation of social stimuli. With respect to attentional and perceptual processes, social avoidance motivation is related to enhanced processing of negative information. A study on the startle reflex showed that social avoidance motivation is positively associated with greater attention (i.e., potentiated eyeblink startle magnitude) to pictures with rejection themes (Downey et al., 2004). The authors interpreted this finding as an automatic activation of the defensive motivational system by rejection cues. Similarly, Gomez and Gomez (2002) found a positive relationship between avoidance motivation and enhanced processing of negative information in a word fragmentation task, in a word-recognition task, and in a free word-recall task. Finally, using a gaze-time paradigm, Nikitin and Freund (2011) showed that, for both young and older adults, avoidance motivation was positively associated with gaze preference for angry faces and negatively associated with gaze preference for happy faces.

As for interpretational processes, Strachman and Gable (2006) demonstrated that avoidance motivation is related to an emphasis of potential threats in the environment. In two studies, avoidance motivation was associated with better memory for negative information and a negatively biased interpretation of ambiguous social cues. Similarly, Nikitin and Freund (2010a) showed that social avoidance motivation predicts how ambiguous facial expressions are interpreted. More specifically, social avoidance motivation was positively associated with the interpretation of ambiguous (masked) faces as angry faces and negatively with the interpretation of ambiguous faces as happy faces. The authors believe that cognitive processes like those examined in the study mediate the effects of social avoidance motivations on socially relevant outcomes as most social situations are ambiguous with regard to social acceptance and rejection (e.g., Fingerman & Lang, 2004) and dispositional factors influence how the situation is interpreted (Caspi & Moffitt, 1993). When social avoidance motivation results in a negatively biased interpretation of ambiguous social cues, people high in avoidance motivation might feel easily rejected (see Levy, Ayduk, & Downey, 2001). These findings are in line with cognitive models of anxiety (Ouimet, Gawronski, & Dozois, 2009). Encountering a threat-relevant stimulus activates threat-related concepts that facilitate interpretation of the stimulus as threat. The activated concepts enhance attentional engagement with the stimulus, which in turn increases the activation of threat-related associations and impedes attentional disengagement from the stimulus. In consequence, the threatening nature of the stimulus intensifies. Cognitive processes associated with anxiety might be the driving force of the negative consequences of social avoidance motivation.

In contrast, social approach motivation only seems to play a marginal role in the interpretation of positive and negative social information (Nikitin & Freund, 2010a; Strachman & Gable, 2006). However, some studies have demonstrated that approach motivation is related to positive reproductions and interpretations of neutral statements (Gomez & Gomez, 2002; Strachman & Gable, 2006). One proposed mechanism by which people high in approach motivation engage in more positive events is thus by seeing potential social rewards in neutral stimuli (Strachman & Gable).

Attribution of social success and failure. In addition to attentional and interpretational factors of social information processing, the attribution of social success and failure might serve as another cognitive mediator between social motivations and their consequences, particularly future social behavior. Schoch, Nikitin, and Freund (2011) suggested that social motivation influences not only whether a social situation is experienced as a success or a failure but also what the social success or failure is attributed to. In a social scenario study, they found that dispositional approach and avoidance motivations have different effects on the attribution of experienced social success and failure: Social approach motivation was related to adaptive attributions after scenarios of social acceptance (i.e., internal-global-stable attribution of social acceptance), while avoidance motivation was related to maladaptive attributions after scenarios of social rejection (i.e., internal-global-stable attribution of social rejection). These results were interpreted in terms of expectations. Previous attribution research has shown that expected outcomes are more often attributed to internal and stable factors, while unexpected outcomes are likely to be attributed to external and variable factors (e.g., McMahan, 1973). As social approach motivation is related to the expectation of social success (Mehrabian, 1994), social success is attributed to internal and stable factors. On the other hand, social avoidance motivation is related to the expectation of social failure (Mehrabian, 1994), which might explain the attribution of social failure to internal and stable factors.

The attribution of previously experienced social situations should further influence specific expectations for future social situations (Schoch et al., 2011). Whether or not we enter a new social situation might depend on how we attribute previously experienced social success and failure. In support of this suggestion, Cutrona (1982) showed in a transition study with students who were starting college that students who became chronically lonely believed that their loneliness was their own fault. They blamed their loneliness on undesirable, unchangeable aspects of their personality. This kind of maladaptive attribution is typical for people high in social avoidance motivation and may lead to the fact that other reasons for difficulties in their social life such as external factors (e.g., living in on an impersonal campus) are disregarded. In line with these findings, previous research has shown that people who are generally fearful that others will reject them often have strong negative expectations about novel social interactions (e.g., Maddux, Norton, & Leary, 1988). As a result, individuals

who anticipate significant distress tend not to pursue novel social encounters (Rapee & Heimberg, 1997). In conclusion, people who score high on avoidance motivation seem to generalize from a single experience of rejection to experiences with other potential partners. This, in turn, leads them to view novel partners as sources of social threat rather than as sources of affiliation. Maner, DeWall, Baumeister, and Schaller (2007) found that the tendency for rejected people to perceive a novel interaction partner as nice and friendly was only pronounced among individuals low in fear of negative evaluation. In contrast, rejected individuals who were high in fear of negative evaluation did not view a novel social partner in a socially optimistic light. These individuals did not exhibit similar signs of wanting to restore social bonds after experiences of rejection and, in some cases, even seemed to view new partners with negative attitudes such as skepticism, fear, or disdain (Maner et al., 2007).

Behavioral processes

We have already discussed that the selection of social situation is influenced by social approach and avoidance motivations. However, social avoidance motivation is not related to the frequency of positive or negative social events (Gable, 2006). Although individuals with high avoidance motivation do not experience negative social events more frequently than others do, they report them to be more important when they occur (Gable, 2006). Therefore, Gable suggested that approach motivation is linked to social outcomes because it is associated with increased exposure to positive social events, whereas avoidance motivation is related to social outcomes because it is associated with more intense reactions to negative social events when they inevitably occur.

Focusing on behavior in social situations, social avoidance motivation is related to passive and inhibited behavior, avoidance of eye contact, and reduced verbal output in social interactions (Ayduk, May, Downey, & Higgins, 2003; Nikitin & Freund, 2010b). Furthermore, avoidance motivation is related to standing on the periphery of a group (Rapee & Heimberg, 1997). According to Rapee and Heimberg, these avoidance-oriented behaviors can facilitate a self-fulfilling prophecy. Avoiding eye contact, reduced verbal output, and standing on the periphery might be viewed by others as disinterest in social interaction. This, in turn, could explain why highly avoidance-motivated individuals are judged less positively by others.

On the other hand, social approach motivation is associated with self-confident and active approach behavior in social situations (McAdams, 1992). More specifically, approach motivation is positively related to the duration of speech in social interactions, the involvement of all group members in spontaneous and friendly exchange, positioning oneself closer to others, smiling more, and showing more eye contact (McAdams, 1992; Nikitin & Freund, 2010b). As a consequence of this approach-related behavior, Mehrabian and colleagues found that people high in approach motivation are more liked by others than people low in approach

motivation. The self-confidence and friendliness of approach-motivated individuals seem to spill over to their social partners (Mehrabian, 1994).

Emotional processes

As social approach motivation is associated with attention and interpretation processes that benefit positive social information, active approach behavior, and social success, one can assume that it leads to positive emotions in social situations. In contrast, social avoidance motivation is associated with attention and interpretation processes that benefit negative social information, passive vigilant behavior, and social failure. Thus, it might lead to negative emotions in a social situation. These assumptions are supported by a study on approach and avoidance social motivation and friendship goals. Elliot et al. (2006) found that social approach motivation predicted approach goals, and approach goals, in turn, predicted high subjective well-being (measured by positive and negative affect and life satisfaction in the past few days). In contrast, social avoidance motivation predicted avoidance goals, and avoidance goals, in turn, predicted loneliness, the frequency of negative social interactions, and the impact of negative relational events on well-being. Similarly, Nikitin and Freund (2010b) found that social approach motivation was positively associated with positive emotions such as happiness and negatively related to negative emotions such as nervousness in social interactions. In contrast, social avoidance motivation was positively related to nervousness.

Interplay of social approach and avoidance motivation

So far, we have reported empirical findings on the consequences of social approach and avoidance motivations separately. As mentioned earlier, approach and avoidance motivations are largely independent. However, approach and avoidance motivations can co-occur. How does this co-occurrence affect social cognition, behavior, and emotion? Nikitin and Freund (2008) suggested that when both approach and avoidance motivations are high, they should result in equally high sensitivity to positive and negative incentives. Consequently, activation of the opposing characters of these two motivational tendencies should lead to behavioral as well as emotional ambivalence. In line with this suggestion, Nikitin and Freund (2010b) showed that social approach and avoidance motivations interacted in predicting cognitions, emotions, and behavior. In a social interaction study, the co-occurrence of high approach and high avoidance motivation was associated with both high arousal and high positive emotions. Furthermore, it predicted control over the situation and eye contact while listening. The authors concluded that individuals high in both approach and avoidance motivations are dependent on the acceptance of their interaction partners and, therefore, are highly engaged and make a great effort to succeed in social contexts. They are happy to be able to socialize but also aroused because they fear the rejection of others. These findings

are in line with previous research. For instance, Mehrabian (1994) found that dependency on others was related to high approach and high avoidance motivation. Dependent people are friendly and outgoing individuals who also feel that events and/or others influence their lives. This suggests that, when approach and avoidance motivations co-occur, both positive and negative consequences result. Further evidence for the ambivalent experience resulting from the co-occurrence of approach and avoidance motivations comes from research on shyness, which can be described as an approach–avoidance conflict (Asendorpf, 1990; Coplan, Prakash, O’Neil, & Armer, 2004), or from the joint subsystems hypothesis of behavioral activation and inhibition system (Corr, 2002). Taken together, the interplay of approach and avoidance motivations has been found to be associated with intense and ambivalent experiences and behavior.

The Origins and Development of Social Approach and Avoidance Motivations Across the Lifespan

Biological substrates

Social approach and avoidance motivations do not tend to be an emphasis of genetic research, although there do seem to be biological substrates of social approach and avoidance motivations with genetic origins. Biological tests of (social) approach and avoidance motivations are based on frontal electroencephalographic (EEG) asymmetry (Davidson, Taylor, & Saron, 1979). Frontal EEG asymmetry has been used *inter alia* as an index of approach and withdrawal (i.e., avoidance) motivation (Davidson, 1995). According to the approach–withdrawal model, increased activation in the left frontal cortex is associated with increases in appetitive, approach-related behavior. The approach system includes emotions like joy, interest, and anger. Increased right frontal activation is related to increases in defensive, withdrawal-related behavior. The withdrawal system includes emotions like fear and disgust. In addition to using frontal EEG asymmetry as a state measure, researchers have also investigated its use as a trait measure of people’s tendency to respond in a motivationally biased manner (e.g., Hagemann, Naumann, Thayer, & Bartussek, 2002). The approach–withdrawal theory of frontal EEG asymmetry proposes that people with greater resting right frontal activation have stronger withdrawal/inhibitory tendencies and that those with greater resting left frontal activation are more vulnerable to experiencing stronger approach tendencies (Davidson, 1995). Resting EEG asymmetry is highly stable over time (Hagemann et al., 2002).

Studies that examined the role of frontal EEG asymmetry in infant temperament found that young children with right frontal EEG asymmetry were more likely to exhibit social withdrawal and behave in a socially maladaptive manner when interacting with unfamiliar peers (e.g., Fox, Henderson, Rubin, Calkins, & Schmidt,

2001; Fox et al., 1995). This pattern of frontal EEG asymmetry can be identified in infants as young as 9 months of age, and it predicts social withdrawal or reticence in preschool- and school-age children. In addition, children who display stable patterns of behavioral inhibition over time also exhibit stable right frontal asymmetry (Fox & Reeb, 2008).

Regarding specific brain regions, behaviorally inhibited individuals show heightened amygdala activation in response to novel and threatening stimuli (Fox, Henderson, Marshall, Nichols, & Ghera, 2005) and enhanced activity in the striatum in response to rewards and punishments (Helfinstein, Fox, & Pine, 2012). It seems that the amygdala activation is particularly linked to attentional processes (enhanced sensitivity to novel and threatening stimuli), whereas the activation of striatal structures is particularly linked to avoidance behavior associated with behavioral inhibition (Helfinstein et al., 2012).

Environmental influences

We know little about the developmental origins of social approach and avoidance motivations (Fox & Reeb, 2008). Heritability of frontal EEG asymmetry seems relatively low (less than 30% of the variance; Anokhin, Heath, & Myers, 2006). Thus, environmental factors may play a substantial role in the development of EEG asymmetry. One of the most prominent environmental factors may be the quality of maternal care. For instance, Hane and Fox (2006) found that infants who received high-quality maternal care displayed decreased right frontal activation as compared to those who received low-quality maternal care. The researchers found that infants receiving low-quality maternal care showed more fearfulness, less positive joint attention, and greater right frontal EEG asymmetry than those receiving high-quality maternal care. The pattern of fearfulness, low sociability, and right frontal EEG asymmetry found in the low-quality maternity care group has been identified in infants displaying negative reactivity to novelty and behavioral inhibition during the early years of life (Fox et al., 1995; Fox et al., 2001). However, the direction of the relationship is not clear: Infants' negativity may also influence the quality of mother–infant interaction as has been reported in the developmental literature (e.g., Crockenberg & Acredolo, 1983).

In fact, a growing body of literature indicates that temperament and maternal behavior act in concert to shape development (e.g., Calkins, 2002; Hane, Cheah, Rubin, & Fox, 2008). For instance, Hane et al. (2008) observed the behavior of children during play with unfamiliar peers at the age of four and seven. In addition, mothers and their 7-year-old children were observed during structured and unstructured activities. Maternal positivity and negativity differentially influenced the development of social withdrawal in childhood: Maternal negativity was associated with poor social functioning in children who had an established history of social withdrawal, whereas maternal positivity was associated with better social outcomes for these children. Similarly, Coplan and colleagues found that the

relationship between child's social withdrawal and maladjustment was moderated by mother's personality and parenting style (Coplan, Arbeau, & Armer, 2008). These findings suggest that generalized levels of maternal positivity and negativity moderate the relationship between temperamental predisposition and overt expressions of social avoidance motivation.

Developmental (in)stability in childhood

The aforementioned findings suggest that environmental factors, such as the quality of maternal care, may buffer or amplify the temperamental predisposition to develop social avoidance motivation. In line with the behavioral findings, EEG asymmetry also seems to change as a result of experiential factors. For instance, Fox et al. (2001) found that children who had originally displayed a right frontal bias and had become less inhibited over time displayed a change from right to left frontal asymmetry. The authors screened 4-month-old infants for temperamental patterns (motor reactivity and affect expression patterns) thought to predict behavioral inhibition and selected a subsample that was identified as displaying high motor reactivity and high negative affect in response to novelty. This group was followed over the course of 4 years, and slightly over a quarter of them were found to display a pattern of continuously inhibited behavior. A similar number of infants were no longer inhibited at the age of four. The remaining children showed no discernable pattern over time. In addition, infants who remained inhibited over the 4-year period exhibited stable right frontal EEG asymmetry, while infants who changed exhibited a shift from left to right frontal EEG asymmetry.

Kagan and Snidman (1991) found that the initial disposition to approach or avoid unfamiliar events at age 4 months was related to fearful behavior a year later. Their study also provided partial support for the argument that inhibited and uninhibited children belong to qualitatively different groups rather than representing extremes on a single dimension. The combination of high motor activity and frequent crying at 4 months best predicted high levels of fear later on. Children who showed high levels of motor activity but no distress were much less fearful. Similarly, children who were low in motor activity but very irritable were more fearful than infants who displayed both low levels of motor activity and minimal crying. These findings are in line with the idea of independent approach and avoidance motivational systems.

More recent studies growing out of the two-factor model of inhibition (Asendorpf, 1990) have explored the interplay of social approach and avoidance motivations in childhood (see Coplan & Rubin, 2010; Rubin, Burgess, & Coplan, 2002). Asendorpf (1990) differentiated between children who are socially withdrawn because they experience an approach–avoidance conflict and children who are socially withdrawn because they are socially disinterested (i.e., low in approach motivation). This differentiation was supported by empirical evidence. Interestingly, the consequences of social withdrawal seem to be negative regardless

of the underlying motivation. Coplan and colleagues (Coplan et al., 2013) found that all socially withdrawn children report negative peer relationships. The authors conclude that socially withdrawal behaviors – irrespective of its origin – appear to be a marker for social difficulties.

Regarding the role of maternal care for social withdrawal, social withdrawal based on the approach–avoidance conflict seems to be associated with either low authoritative parenting (low warmth, reasoning, and democratic participation) or overprotectiveness (being anxious and intervening) (Coplan et al., 2004). In other words, too little and too much parental care might lead children to develop shyness characterized by an approach–avoidance conflict probably because in both cases children do not learn to cope with interpersonal situations (because of either too much or too little parental regulation). Social disinterest (or low approach motivation) is unrelated to parental behavior but associated with maternal social goals. Mothers who place less importance on children's sociability and peer relations have children who are socially disinterested (Coplan et al., 2004). Although the causality is unclear, these findings support the assumption that social approach motivation and approach–avoidance conflict might have origins in different environmental factors.

Developmental (in)stability beyond childhood

Adolescence and young adulthood. As discussed in previous sections, dispositional social approach and avoidance motivations in childhood have a genetic basis and are the result of an uninhibited or inhibited temperament, respectively, and environmental factors such as the quality of maternal care. It seems that inhibited infants are at a slightly higher than normal risk for the later development of some form of anxious symptomatology. For instance, behavioral inhibition assessed via maternal report throughout infancy and early childhood was associated with four times increased risk for social anxiety disorder in adolescence (Chronis-Tuscano et al., 2009; see also Essex, Klein, Slattery, Goldsmith & Kalin, 2010). Conversely, college students who reported high levels of social anxiety remembered being inhibited when they were young children (Mick & Telch, 1998). Behavioral inhibition in childhood predicted only social anxiety, not generalized anxiety. These data suggest that a childhood history of behavioral inhibition may be more strongly associated with adult social anxiety than other types of anxiety.

Thus, behavioral and physiological features of behavioral approach and avoidance are moderately stable from infancy into early adolescence. However, this might especially be the case for extreme groups (Pfeiffer, Goldsmith, Davidson, & Rickman, 2002). Infants who have extreme levels of dispositional approach and avoidance motivations remain more stable than those with moderate levels. In the middle of the distribution, the development of approach and avoidance motivations is characterized more by change than by stability (Pfeiffer et al., 2002).

Middle adulthood and old age. To date, very little is known about the development of social approach and avoidance motivations beyond young adulthood. There is some support in the literature for the assumption that interindividual differences in motivation in general may be relatively stable across the lifespan. In two surveys, Veroff, Reuman, and Feld (1984) investigated the stability of social motives. Although the authors found some social role-related differences, the strength of the motives was remarkably similar across age groups. Similarly, in a longitudinal study on motive development, Franz (1994) found evidence for both stability of and change in motives across middle adulthood.

However, individual differences can be operationalized either quantitatively or qualitatively (Caspi & Moffitt, 1993). Quantitative differences are related to differences between individuals on a single trait dimension (i.e., mean differences). Differences like these were discussed in the previous paragraph. Individuals can also differ with respect to how frequently they exhibit trait-related behaviors, cognitions, and emotions. In other words, the qualitative differences address the question concerning how well traits predict trait-related outcomes. There are good reasons for expecting either stability, an increase, or a decrease in the impact of social approach and avoidance motivations on social outcomes across adulthood. Older adults show greater motivation to regulate their emotions (e.g., Gross et al., 1997); their emotion-regulation efforts thus seem to override the effects of disposition, which speaks for a decrease in the impact of social approach and avoidance motivations on social outcomes across adulthood. This hypothesis contradicts the hypothesis that the effects of disposition become stronger over time due to cumulative processes (Impett et al., 2010). Finally, the hypothesis that the effects of disposition remain stable over time is based on Neugarten's (1964) notion of the institutionalization of personality, which assumes that personality traits and their interaction with the social environment stabilize with age (see Nikitin, Burgermeister, & Freund, 2012).

There is some initial support favoring the stability hypothesis over the two change hypotheses with respect to the impact of social approach and avoidance motivations on social outcomes across adulthood. In a study with young and older adults, Nikitin and Freund (2011) found that self-reported avoidance motivation predicted how emotional faces were processed irrespective of age. In both young and older adults, avoidance motivation was positively associated with gaze preference for angry faces and negatively associated with gaze preference for happy faces. Age did not moderate the effect of avoidance motivation. Thus, the influence of avoidance motivation on gaze preference appears to remain relatively stable from young to older adulthood.

It seems that other factors than chronological age influence individual differences in the expression of dispositions across adulthood. Caspi and Moffitt (1993) suggested that individual differences tend to be magnified when individuals experience profound discontinuities in their lives. Preexisting cognitive schemas exert a powerful and pervasive influence on our interpretation of new experiences by helping us to categorize and organize the changing events as we attempt to

assimilate new and unpredictable events into existing cognitive and action structures. Thus, it appears that person-related variables continue to exert an important influence on social outcomes well into old age and are even accentuated during transitions into new social situations (Nikitin et al., 2012).

Conclusions and Future Directions

In this chapter, we discussed social approach and avoidance motivations, their underlying processes, and developmental specifics. Distinguishing social approach and avoidance motivations and their possible cognitive, emotional, and behavioral concomitants and consequences helps us to describe and explain different patterns of behavior and experience in social situations across the lifespan.

Future research needs to address how maladaptive cognitive, emotional, and behavioral concomitants of social avoidance motivation could be altered in order to reduce social failure and loneliness. Previous intervention studies indicate the effectiveness of targeting cognitions and beliefs that lie at the heart of interpersonal patterns. Walton and Cohen (2007), for example, developed an experimental intervention aimed to increase people's expectations of acceptance. Changing people's expectations of acceptance had significant positive effects on self-confidence, resilience, and even academic success. In line with these findings, Aronson, Fried, and Good (2002) demonstrated in an intervention study that college students who learned about the malleability of personal attributes (such as intelligence) showed a higher valuation of their courses and studies, enhanced enjoyment thereof, and higher grade-point averages. The intervention mentioned earlier follows in the footsteps of earlier attribution interventions that changed people's explanations of events and thereby their reactions to them (e.g., Försterling, 1985). According to Dweck (2008), these interventions all speak to the effectiveness of targeting cognitions, which play an important role in challenge seeking, self-regulation, and resilience. Further, changing self-theories, or cognitions about oneself, appears to result in important real-world changes in how people function. For example, individuals who think that their shyness is malleable as compared to individuals who see their shyness as unchangeable view social situations as learning opportunity, are less likely to avoid social interactions, and report less negative consequences of their shyness (Beer, 2002). Moreover, cognitive interventions have been found to be successful in changing many of the personality traits that are often thought to be relatively stable across adulthood, such as sociability (e.g., reach out to others) or negative affectivity (e.g., positive vs. negative reactions to setbacks) (Dweck, 2008). Based on these findings, we would suggest interventions that focus on changing people's cognitions about social situations in order to reduce social failure and loneliness.

Changing people's cognitions alone may not be sufficient to bring about a stable change in behavior. Thus, behavior should also be addressed in interventions. One

of the most direct modes of intervention would be to use our knowledge about the behavior associated with social approach motivation (such as actively approaching others, talking to others, engaging in self-disclosure) and to apply it to the development of training programs for socially avoidant individuals. Thinking about how interventions should look and which strategies should be learned, we do not claim that approach cognitions, emotions, and behaviors are always adaptive, whereas avoidance cognitions, emotions, and behaviors are always maladaptive. Imagine that you wanted to have a fun evening with your new colleagues. Now imagine a different situation, namely, one in which you had to bring up a difficult topic with a friend. Would you behave the same way in both situations? Probably not. In other words, there are situations in which avoidance goals and means are more adaptive and others in which approach goals and means are more appropriate. It would therefore make sense to also include discrimination tasks in interventions that teach people to discriminate between social situations in which approach strategies are more appropriate than avoidance strategies and vice versa. In a second step, as mentioned earlier, the intervention should provide training in appropriate approach and avoidance strategies as well as focus on cognitive aspects.

Moreover, future studies should systematically investigate when across the lifespan such training programs would be most successful and meaningful. As the influence of social approach and avoidance motivations on social outcomes has been found to be relatively stable across the lifespan, interventions might be important in both young and older age. However, there are substantial differences between young and older adults in their motivational focus. With increasing age and decreasing resources, people are more motivated to avoid losses instead of striving for gains (Freund & Ebner, 2005). The switch in motivational focus also changes the adaptivity of approach and avoidance strategies, with approach strategies becoming less and avoidance strategies becoming more adaptive for goal pursuit (see Freund & Ebner, 2005, for a summary). This should also be true for the social domain. As older adults are particularly motivated to maintain their established social relationships (Antonucci, Fiori, Birditt, & Jackey, 2010), social avoidance behaviors should become more adaptive with increasing age. In contrast, young adults are particularly motivated to establish new social relationships (see Carstensen, 1992; Nikitin & Freund, 2008). The adaptivity of social approach behaviors might therefore be highest in young adulthood and continuously decrease across adulthood. Thus, although the importance of social approach and avoidance motivations is not diminished in older adulthood, the strategies that are adaptive for young and older adults might differ.

Taken together, social approach and avoidance motivations are influential in different contexts (new as well as established social relationships) and at different ages (young as well as older adulthood). Furthermore, dispositions appear to foster individual stability in times of social instability such as in social transitions. There are substantial cognitive, behavioral, emotional, and neuropsychological

differences between social approach and avoidance motivations, suggesting that the motivations are theoretically different and not simply inverse. Moreover, the motivations interact in predicting social outcomes. To date, we know less about the processes and development of social approach motivation than about social avoidance motivation. This discrepancy in the research is probably based on the fact that the consequences of social avoidance motivation, unlike those of social approach motivation, are detrimental for the individual. However, learning more about the processes and development of social approach motivation would help us to understand what leads to well-functioning and satisfying relationships. This knowledge could be applied in future interventions to prevent social isolation.

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Ostracism and Solitude

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Ostracism – being ignored and excluded – is a social phenomenon that occurs in myriad cultures and contexts among humans (Williams & Nida, 2011) and also among all social animals (e.g., Goodall, 1986). Records throughout human history reveal ritualized ostracism, ranging from prehistorical tribal humans (Boehm, 1999) to the ancient Greeks and to modern-day Amish communities (Williams, 2001). Institutional practices such as incarceration, excommunication, political exile, and even the disciplinary practice of giving children *time-outs* are also examples of ritualized ostracism (Williams, 2001, 2009). Many instances of ostracism, however, are not ritualized; they include any instance in which individuals perceive themselves to be ignored and excluded and can be as seemingly trivial as not receiving eye contact from a stranger (Wesselmann, Cardoso, Slater, & Williams, 2013).

Evolutionary theory offers an explanation for the robustness of ostracism in human society and its occurrence within groups of other social animals. Social scientists have argued that ostracism served useful functions in evolutionary past (Gruter & Masters, 1986; Kerr & Levine, 2008; Kurzban & Leary, 2001; Williams, 2009). Groups of humans and other social animals use ostracism as a form of social control to deal with deviant or burdensome group members, thus strengthening the group by motivating individual members to obey norms and to contribute to the collective (Boehm, 1999; Gruter & Masters, 1986; Kurzban & Leary, 2001; Ouwerkerk, Kerr, Gallucci, & Van Lange, 2005; Williams, 2001; Zippelius, 1986). A scientific study of ostracism can take two perspectives – a study of the functions of ostracism (e.g., Wesselmann, Wirth, Pryor, Reeder, & Williams, 2013) or studying the experience of being ostracized (Williams, 2009). In this chapter, we focus on the research examining the perspective of individuals who are ostracized. We first review a theoretical model of studying the effects of ostracism and discuss data that support this model. Next, we discuss new areas of

studying ostracism that are in their infancy but offer exciting new directions for researchers. Finally, we propose that ostracism research should consider situations in which individuals *self-ostracize*, voluntarily removing themselves from social interactions as a way to seek solitude.

Overview of Ostracism

Ostracism has received substantial attention in social psychology over the past two decades. The terms ostracism, social exclusion, and rejection are often used synonymously in the extant research, even though there are debates about their similarities and differences (Smart Richman & Leary, 2009; Williams, 2009). For our purposes, *rejection* is defined as an explicit declaration that the target is not wanted; *social exclusion* is when the target is kept apart from others; and, finally, *ostracism* is when the target is ignored and excluded by others (Williams, 2007). Most of the debates about these constructs have been theoretical with little empirical evidence to suggest differential effects (cf. Molden, Lucas, Gardner, Dean, & Knowles, 2009). We acknowledge these debates but choose to use the term *ostracism* throughout this chapter for simplicity when discussing various programs of research.

Ostracism is a painful event that the majority of individuals experience in minimal forms daily and often in meaningfully important forms at least once in their lives (Nezlek, Wesselmann, Wheeler, & Williams, 2012; Williams, 2009). Anecdotally, most individuals can probably recall at least one instance of being ostracized from a childhood peer group (see Nesdale & Zimmer-Gembeck, Chapter 8, this volume). Ostracism can occur in three main modes of interaction – physical, social, and cyberostracism (Williams, Cheung, & Choi, 2000). *Physical* ostracism involves being separated physically from the others (e.g., incarceration, exile). *Social* ostracism involves being ignored and excluded while in the physical face-to-face presence of others (e.g., the *silent treatment*). *Cyberostracism* occurs via electronic media where recognition and communication is anticipated but does not occur within an expected time frame (e.g., ignored email, texts). Most empirical research has focused on the latter two modes of ostracism.

Ostracism can be psychologically harmful to the target, leading to impaired self-regulation (Baumeister, DeWall, Ciarocco, & Twenge, 2005; Oaten, Williams, Jones, & Zadro, 2008), self-perceived dehumanization (Bastian & Haslam, 2010), and decreased cognitive ability (Baumeister, Twenge, & Nuss, 2002), and provokes immediate negative physiological responses (e.g., heightened cortisol, cardiovascular difficulties; Dickerson & Kemeny, 2004; Gunnar, Sebanc, Tout, Donzella, & van Dulmen, 2003; Josephs et al., 2012; Moor, Crone, & van der Molen, 2010). Furthermore, fMRI data demonstrates that ostracism activates the dorsal anterior cingulate cortex (dACC), the same brain region associated with physical pain (Eisenberger, Lieberman, & Williams, 2003; Onoda et al., 2010). Ostracism also

increases negative moods and threatens individuals' satisfaction of four basic human needs: belonging, control, meaningful existence, and self-esteem (Williams, 2001, 2009).

Williams's Temporal Model of Ostracism

Williams (2009) posits that individuals' experiences of ostracism have a temporal structure, with personality and situational factors having differential effects over time. Williams's model has three stages: reflexive (Stage 1), reflective (Stage 2), and resignation (Stage 3).

Reflexive stage

Humans likely evolved to detect the slightest cues of ostracism, which helped them forestall or avoid permanent expulsion (Leary, Tambor, Terdal, & Downs, 1995; Wesselmann, Nairne, & Williams, 2012; Williams, 2009). After individuals detect these cues, their reflexive responses are characterized by immediate pain and threatened need satisfaction. Typical research on the immediate effects of ostracism uses self-report scales to measure need threat and negative affect, but others have used physiological and brain activity measures as well (Dickerson & Kemeny, 2004; Eisenberger et al., 2003; Gunnar et al., 2003; Josephs et al., 2012; Moor et al., 2010; Onoda et al., 2010).

The reflexive effects of ostracism have been observed to occur regardless of whether the mode of ostracism is social (Williams & Sommer, 1997) or cyber (Smith & Williams, 2004; Williams et al., 2000; Williams et al., 2002). Even simple nonverbal cues, such as lack of eye contact, are sufficient to threaten need satisfaction and increase negative mood (Wirth, Sacco, Hugenberg, & Williams, 2010). A recent field study demonstrated that pedestrians who were given an *air-gaze* (i.e., having someone look in their direction, but looking just past them as if they didn't exist) by a passerby felt decreased social connection (Wesselmann, Cardoso, et al., 2012). Other research suggests simply observing the ostracism of another individual can elicit vicarious distress in the observer (Masten, Eisenberger, Pfeifer, & Dapretto, 2010; Wesselmann, Bagg, & Williams, 2009). The power of ostracism is not limited to current occurrences; data suggest that need threat occurs when individuals recall a past ostracism episode (Chen, Williams, Fitness, & Newton, 2008) or imagine a future episode (Chen & Williams, 2012)!

Ostracism's reflexive effects have been resistant to moderation by several individual differences and situational factors (Williams, 2009; cf. Boyes & French, 2009; Hawley, Williams, & Cacioppo, 2011; Wirth, Lynam, & Williams, 2010). Ostracism still threatens need satisfaction when participants are told the ostracism was unintentional or even planned by the experimenters (Eisenberger et al., 2003; Zadro, Williams, & Richardson, 2004). Ostracism also hurts when it could be considered

desirable to be ostracized, such as when the ostracizers are members of a hated out-group (i.e., the Ku Klux Klan; Gonsalkorale & Williams, 2007), when ostracism is financially rewarding (van Beest & Williams, 2006), or when ostracism decreases participants' chances to *die* in a game akin to cyber *Russian Roulette* (van Beest, Williams, & van Dijk, 2011).

Reflective stage

Williams's (2009) reflective stage of ostracism focuses on the recovery of an individual's threatened basic need satisfaction, and this can begin within minutes after the initial effects of ostracism occur (Goodwin, Williams, & Carter-Sowell, 2010; Wirth & Williams, 2009). Research on the reflective stage has investigated both the personality and situational factors that influence recovery and behavioral responses facilitating recovery.

Factors influencing recovery. Research has demonstrated that group membership of the ostracized individual (and of the sources of ostracism) can affect recovery need satisfaction. Wirth and Williams (2009) found that ostracized participants who made attributions to a temporary group membership (i.e., minimal group assignment) recovered from ostracism quicker than participants who made attributions to a permanent group membership (i.e., gender). Goodwin et al. (2010) extended research on permanent group membership, demonstrating that ostracized participants who interpreted the treatment as racism had slower recovery than participants who did not make this attribution. Zadro, Boland, and Richardson (2006) focused on how personality differences (i.e., social anxiety) influenced recovery from ostracism and found that ostracized participants who had higher levels of social anxiety demonstrated less recovery after a 45-min period than those participants who had lower levels of anxiety. These researchers suggested rumination hinders recovery.

Behavioral responses. Williams (2009; Williams & Wesselmann, 2010) argues that individuals' behavioral responses in the reflective stage serve to fortify threatened need satisfaction (see also Leary, Twenge, & Quinlivan, 2006). Research has found two main types of responses to ostracism: pro- and antisocial behavior. Several studies suggest ostracized individuals may respond prosocially as a way to become re-included. Ostracized individuals have been more likely to work harder on a collective group task (Williams & Sommer, 1997), conform to group norms (Williams et al., 2000), focus on strategies for re-inclusion (Molden et al., 2009), demonstrate increased compliance (Carter-Sowell, Chen, & Williams, 2008), and show interest in joining new groups (Maner, DeWall, Baumeister, & Schaller, 2007) compared to included individuals.

Ostracized individuals are also more likely to emulate a cooperative group member (Ouwerkerk et al., 2005), engage in nonconscious behavioral mimicry (Lakin & Chartrand, 2005; Lakin, Chartrand, & Arkin, 2008), and show improved

attention to social information (Bernstein, Young, Brown, Sacco, & Claypool, 2008; Gardner, Pickett, & Brewer, 2000; Pickett, Gardner, & Knowles, 2004; Sacco, Wirth, Hugenberg, Chen, & Williams, 2011) compared to included individuals. Interestingly, ostracized individuals also show an increased tendency to respond antisocially, regardless as to whether or not the target of their behavior was involved in the ostracism (Buckley, Winkel, & Leary, 2004; Riva, Wirth, & Williams, 2010; Twenge, Baumeister, Tice, & Stucke, 2001; Warburton, Williams, & Cairns, 2006; Williams, 2001).

How do researchers reconcile these paradoxical responses to ostracism? Williams (2009) argues that the specific type of behavioral response to ostracism corresponds to the main type of need individuals are motivated to fortify. Prosocial responses should focus on fortifying *inclusionary* needs (i.e., belonging and self-esteem), and aggressive responses focus on fortifying *power/provocation* needs (i.e., meaningful existence and control). Williams's argument has not been tested directly, but several experiments provide indirect evidence. First, Warburton, Williams, and Cairns (2006) demonstrated that ostracized participants who had their need for control restored did not aggress any more than included participants; ostracized participants not given control restoration replicated the typical ostracism → aggression effect (Twenge et al., 2001). Subsequent research demonstrated that the link between the need for control and aggressive responses to ostracism can be bidirectional. Wesselmann, Butler, Williams, and Pickett (2010) found that participants who were treated negatively during a group discussion were able to anticipate their subsequent ostracism, and these participants aggressed less than participants who were treated positively and then unexpectedly ostracized.

Other research offers support for Williams's (2009) proposed link between inclusionary needs and prosocial behavior. Twenge et al. (2007) found that ostracized participants who were either reminded of positive social relationships or had a pleasant interaction with an experimenter behaved less aggressively than participants who were not given these opportunities. Even small amounts of inclusion in a group context help individuals recover from ostracism, reducing their need for subsequent aggression (DeWall, Twenge, Bushman, Im, & Williams, 2010). Bernstein et al. (2010) provided the strongest evidence for the link between inclusionary needs and prosocial responses. They found that participants' needs for belonging and self-esteem mediated the link between ostracism and an individual's desire to interact with potential sources of affiliation.

Resignation stage

Finally, Williams (2009) argues that if individuals experience ostracism chronically, then they decline into the *resignation* stage. Individuals in this stage may find that their attempts to restore their need satisfaction or forestall future ostracism are futile. Thus, these individuals should experience an acceptance of these lost needs and suffer extreme outcomes: alienation (need to belong), depression (self-esteem), learned

helplessness (control), and unworthiness (meaningful existence). This third stage of Williams's temporal model has received little empirical study, but preliminary evidence suggests that consistent exposure to ostracism can lead to extreme consequences. Individuals enduring chronic ostracism (and the silent treatment) responded to advertisements for interviews, and they reported feelings of alienation, depression, giving up, and feeling worthless. Additionally, many reported eating disorders, suicidal ideation, and even suicide attempts (Williams & Zadro, 2001; Zadro, 2004).

Methods to Examine Chronic Ostracism

Chronic ostracism and resignation

Williams's (2009) resignation stage is the newest stage in the theoretical understanding of experiencing ostracism – thus, it represents the largest area for future research. We propose that future research should approach a scientific study of the resignation stage and its consequences using multiple methods. Psychological science favors experimental methods, but this type of research may prove difficult, because researchers ethically and practically cannot ostracize human participants for an extended period of time. We suggest that research using animal models may offer a fruitful avenue for experimental research on chronic ostracism. Animal models have been useful in studying the effects of chronic stress in humans, particularly because many of these effects cannot be studied ethically or practically in human participants.

One animal model – the prairie vole – is a useful model to compare with humans because voles are social animals that form socially monogamous pair-bonds, engage in biparental care of offspring, and have stress reactions similar to humans (Grippo, 2009). A common stress manipulation in research using this animal is to isolate the vole socially for 4 weeks – this manipulation is similar to the concept of *physical ostracism* in humans (Williams et al., 2000). This research demonstrates that isolated voles are more likely than included voles to show depression-like symptoms (Grippo, Cushing, & Carter, 2007) and learned helplessness (Grippo, Wu, Hassan, & Carter, 2008); each of these is a theorized outcome for chronic ostracism in humans (Williams, 2009). Research using animal models does have limited generalizability to human participants, and future research programs should combine these methods with human participant studies to elucidate fully the phenomena of chronic ostracism.

One potential method for studying chronic ostracism in humans is to measure individual differences in chronic ostracism and assess its correlation with its theorized negative outcomes (i.e., alienation, depression, helplessness, and meaninglessness). These studies could be conducted using various measures. Nezlek et al. (2012) utilized event-contingent daily diaries to assess the frequency with which ostracism occurs in participants' daily lives. This study did not assess any

outcomes related to chronic ostracism, but future researchers could utilize event-contingent diaries to assess this research question.

Other researchers have developed individual difference measures of chronic ostracism that could also be used to predict theorized negative outcomes (Carter-Sowell, 2010; Saylor et al., 2012). These measures have thus far been utilized in both children and college student samples, but may be used to assess potential links between chronic ostracism and its theorized outcomes in members of groups that traditionally are marginalized in mainstream society, such as the elderly or infirm individuals in institutionalized care (Goffman, 1961), persons with mental illness (Farina, 2000; Feldman & Crandall, 2007), and homeless individuals (Hulme, 2000). Research on each of these groups argues that they experience ostracism, both in their interpersonal relationships and by society in general.

Another potential group that would be fruitful for studying chronic ostracism is incarcerated individuals. Incarceration can be considered an institutional form of ostracism (Williams, 2001; Zippelius, 1986). In addition to protecting society from potentially dangerous individuals, an acknowledged function of prisons is to isolate inmates from society, thus motivating them to reflect on their misconduct and reform (Smith, 2008). It is plausible that this explicit isolation causes feelings of ostracism. This isolation is analogous to the *punitive* ostracism, which is focused on punishing the targets to force them to correct undesirable behavior or to eject them from the group (Wesselmann, 2011; Williams, 1997).

However, individuals in prison have frequent daily contact with guards, fellow inmates, and even visitors (Arrigo & Bullock, 2008). These daily interactions may be enough to temper the effects of ostracism (see DeWall, Twenge, et al., 2010; Twenge et al., 2007) and prevent these individuals from progressing to the resignation stage. The increasingly common practice of prolonged solitary confinement may offer the clearest insight into the nature of chronic ostracism in a prison setting. Solitary confinement typically consists of isolating a prisoner in a small room with no items. Prisoners are only permitted to leave their cells to shower and exercise in isolation and are entirely dependent on guards for all of their physical needs. Solitary confinement can last for a few months or even years (Arrigo & Bullock, 2008). The lack of human contact, combined with an inability to engage in any purpose-driven or meaningful activity, likely represents a severe and chronic threat to prisoners' basic needs.

Research suggests solitary confinement has adverse effects on individuals' mental health. Individuals in solitary confinement are more depressed (Haney, 2003), more likely to commit suicide (Haney & Lynch, 1997), and quicker to reoffend after being released (Lovell, Johnson, & Cain, 2007) compared to those in the normal prison population. Further, the longer an individual is in solitary confinement, the more severe their mental health outcomes (Grassian & Friedman, 1986). These negative mental health effects are exacerbated when confined individuals do not know how long the isolation will last (Toch, 1992). Not only do the mental health outcomes for solitary confinement support Williams's (2009) hypothesized outcomes for chronic ostracism, but individuals who face chronic

ostracism often do not know how long it will last either (Williams, 2001). Research on the effects of solitary confinement shares the same problems as extant research on chronic ostracism in that it is correlational in nature. Nevertheless, researchers should explore possible patterns of mental health improvement as confined prisoners reenter the normal prison population and when they are eventually re-included in society.

Interventions for chronic ostracism

Because of harmful consequences of chronic ostracism, research should also investigate potential interventions for individuals who find themselves in the resignation stage. No direct studies have been conducted on treating these individuals, but there are studies that suggest fruitful treatment methods. Recent research demonstrates that individuals who take regular doses of *acetaminophen* experience dampened negative effects of ostracism in a laboratory setting (DeWall, McDonald, et al., 2010), and other research suggests *oxytocin* (a social-affiliative hormone) can reduce the harmful effects of isolation in prairie voles (Grippo, Trahanas, Zimmerman, Porges, & Carter, 2009). These studies suggest biochemical interventions may be developed to help individuals cope with chronic ostracism.

There may be other interventions for chronic ostracism that would not require individuals to ingest biochemical treatments, especially if there are practical or ethical reasons to avoid these methods. Previous research has found that being reminded of positive social relationships or even symbolic relationships (e.g., parasocial relationships) can help individuals recover from the harmful effects of ostracism (Gardner, Pickett, & Knowles, 2005; McConnell, Brown, Shoda, Stayton, & Martin, 2011; Twenge et al., 2007). Other research has suggested that religious/spiritual beliefs may also serve to help individuals fulfill the needs thwarted by ostracism (Aydin, Fischer, & Frey, 2010; Epley, Akalis, Waytz, & Cacioppo, 2008; Wesselmann & Williams, 2010). An important caveat must be stated – religion/spirituality likely is only useful as an intervention for individuals who already hold these beliefs and only for individuals who hold beliefs that their deity is inclusionary (van Beest & Williams, 2011). Further, the potential balm religion/spirituality provides to chronically ostracized individuals may be exploited by cults or other dubious organizations (Wesselmann & Williams).

Finally, social networking media provides potential for developing interventions for chronic ostracism. Research suggests that social networking web sites, email, and other modes of electronic-based communication have afforded individuals the opportunity to form meaningful interpersonal relationships regardless of time or geographical limitations (Bargh & McKenna, 2004; McKenna & Bargh, 1999). These media also afford individuals opportunities to overcome obstacles that normally inhibit them in face-to-face interactions, such as stigma, social anxiety, loneliness, or lack of social skills (McKenna & Bargh, 1998, 1999; Peter, Valkenburg & Schouten, 2005; Reid & Reid, 2007; Sheeks & Birchmeier, 2007). It is possible that individuals who experience chronic ostracism in other aspects of their lives could seek out

relationships via these media to fortify their threatened needs. A potential downside to this approach is that chronically ostracized individuals may also experience ostracism in these media, thus exacerbating their problems (Wesselmann & Williams, 2011).

“I Want To Be Alone”: Self-Ostracism/Being Alone

As Greta Garbo has often been quoted, sometimes people want to be alone. When do individuals choose to ostracize themselves from social situations? Do individuals who choose to be alone and isolate themselves from others still experience feelings of being ignored and excluded, or does the individual's agency in this situation render ostracism's negative effects moot? Further, are there situations where too much inclusion can be aversive, making self-ostracism an attractive alternative?

One reason for wanting to be alone is to prevent anticipated ostracism or rejection. Indeed, one defining characteristic of *rejection sensitivity* (Downey & Feldman, 1996) is to avoid social situations because of fear of further rejection. Defensive ostracism (Williams, 1997, 2009) occurs when someone ostracizes others as a preemptive attack on becoming similarly ostracized by others. This motivation for *self-ostracism*, of course, puts the individual in a downward spiral of separation and exclusion and probably quickens the transition into the resignation stage. This form of avoidance may not always be irrational and counterproductive, however. Because individuals may choose solitude over social interactions when the anticipated social interactions are predicted to be unpleasant (Fox, 1980), they may be happier and experience less stress than they would in the unpleasant interaction. The line between functional and dysfunctional would seem to be the extent to which individuals *accurately* assess the likelihood of unpleasantness or whether they *over-anticipate* rejection and unpleasantness.

But a more adaptive and healthy reason for seeking solitude is that individuals may choose to be alone because it affords beneficial contemplative or spiritual thoughts and behaviors and may facilitate creative endeavors (Long & Averill, 2003; see also Averill & Sundararajan, Chapter 6, this volume). As Henry David Thoreau wrote, “I've never found the companion that was so companionable as solitude” (1983, p. 180). Most of the research on motives for solitude has been conducted with young children and found that some motives are related to simple disinterest in socializing at that moment and others relate to shyness and fear of negative social interactions (Bowker & Raja, 2011; Coplan & Armer, 2007; Coplan, Prakash, O’Neil, & Armer, 2004; Galanaki, 2004).

We recently investigated the motives for solitude in college students. We asked 176 undergraduates to list as many situations as they could think of for when someone would want to be alone (i.e., no social contact with anyone either in person or over electronic media, such as cell phones or the Internet). They listed 955 different reasons, and we created ad hoc categories based upon patterns that emerged in their answers (Table 13.1; full data are available from first author).

Table 13.1 Survey of solitude-seeking situations

<i>Category</i>	<i>Total frequency</i>	<i>Subcategory</i>	<i>Frequency</i>
Negative event induced	272	Death of family/friend	73
		Negative event with significant other	52
		Trouble/bad news	45
		Frustration	39
		Avoiding unpleasant social interaction	28
		Relational conflicts	26
		Loneliness	6
		Miscellaneous	3
Concentration	206	Study/work/concentration	106
		Deep thought	62
		Religion related (e.g., prayer)	38
Emotion	194	Depression	100
		Anxiety	39
		Anger	33
		Annoyance	7
		Miscellaneous negative emotions (e.g., guilt, regret)	10
		Miss someone/homesick	4
		Happiness	1
Personal time	88	Exhaustion	34
		“Alone time”	25
		Relaxation	22
		Too much social interaction	7
Privacy	81	Sleeping	46
		Private behaviors (e.g., personal grooming, confidential activities)	31
		Illegal activities	4
Activity	73	Entertainment (e.g., movies, music, hobbies)	41
		Physical exercise	21
		Travel	5
		Eating	3
		Driving	2
		Shopping	1
Disease/illness	36		
Dispositional preference	5		

The most common category of reasons was *negative event induced*, followed by *concentration-related* activities, and *emotions* (predominately negative). These data support the idea that individuals may desire solitude when an anticipated social interaction may be unpleasant (Coplan et al., 2004; Fox, 1980) and suggest that the

occurrence of an unpleasant social interaction may also increase the desire for solitude. The data also suggest that individuals may seek solitude to engage in contemplative behaviors (Long & Averill, 2003), but the majority of reasons participants listed involved negative social interactions or emotions.

These research questions may have interesting implications for chronic ostracism as well. Some groups of individuals actively choose to self-ostracize for extended periods of time and, at least anecdotally, do not experience the theorized negative outcomes for chronic ostracism. An example group of individuals that choose this option may loosely be called *hermits*. There is a dearth of psychological research on hermits, who are defined typically as people who choose to live in solitude and avoid social interactions (Hodgetts et al., 2010). The scant research that exists suggests these individuals actively choose to avoid social connections, sometimes due to previous traumatic social experiences (Jones, 2006; Paul, 2011). These individuals will often report finding solace in religious practices or parasocial relationships (Conley, 1994; Hodgetts et al., 2010; Paul, 2011). There has been no systematic study of the psychological implications of these practices, so it is difficult to confirm whether the activities these individuals use to supplant traditional social interactions actually satisfy their psychological needs or if this is simply their biased perceptions. Regardless, this is a fruitful area to both examine a potential boundary condition for the effects of chronic ostracism and explore the psychology of an understudied group.

Summary

Ostracism – being ignored and excluded – is a painful event that the majority of individuals will endure minimally on a daily basis and in more meaningful ways at least once in their lives. Individuals have *reflexive* reactions to ostracism, characterized by social pain, and immediate distress and threat to the basic needs of belonging, control, self-esteem, and meaningful existence. Ostracized individuals then enter the *reflective* stage, characterized by attributions and appraisals about the ostracism episode, and attempts to recover basic needs satisfaction. Individuals who find their attempts to recover consistently thwarted by chronic ostracism enter the *resignation* stage. Empirical research has focused on the first two stages, but the resignation stage remains largely unexplored, except through in-depth interviews. The ultimate goal of this chapter was to generate future directions in ostracism research, particularly on the resignation stage. We suggested several potential research methods for future research in this area. We also recognize that people often choose to withdraw from social circumstances – a type of self-ostracism. We proposed that some individuals do this to defend against negative social interactions, whereas others choose solitude for self-reflection and self-discovery, an intrapersonal process that promotes strength and resilience. We presented exploratory qualitative data that support these proposed motives for self-ostracism and made suggestions for future research.

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Social Isolation among Older People

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One of the oldest areas of research in the social sciences centers on the fundamental importance of social organization and connections through family and social institutions to society (Durkheim, 1897/1951). Social isolation, the consequence of loosening or disintegrating social connections, was also one of the founding questions in the study of older adults in the mid-twentieth century (Cumming & Henry, 1961; Rosow, 1967). An assumption underlying research on older persons is that individuals are particularly vulnerable to social isolation as they age because of the impact of predictable events associated with social and physical aging. Such events include transitions out of the work role into retirement, from marriage into widowhood, and from parenthood to *empty nest* as well as the transition from vitality to declining health, disability, and even dependence. Another assumption is that social integration (the state of being connected to others) is a fundamental determinant of health, not only among older adults (Rowe & Kahn, 1997) but across the life course (Berkman, Glass, Brissette, & Seeman, 2000; Cohen, 2004; House, Umberson, & Landis, 1988; Link & Phelan, 1995).

In a review of the literature on social integration and aging more than a decade ago, Pillemer and Glasgow (2000) concluded that although social integration is a theme of great importance in later life and is associated with health and well-being, the majority of older adults in the twenty-first century will not be threatened by its disintegration or social isolation (2000, p. 41). Nevertheless, they predicted that certain subgroups of the older population would be more at risk for social isolation than others. Such subgroups include the non-married, childless, and geographically isolated, as well as those with fewer social and economic resources. Wethington, Moen, Glasgow, and Pillemer (2000) argued for the application of the life course perspective from sociology (Elder, Johnson, & Crosnoe, 2003) and longitudinal research designs to identify adults at risk for social isolation in old age,

as well the development of more theory-based experimental interventions to help prevent or mitigate social isolation among vulnerable older people.

Over the ensuing decade, research on social integration and social isolation, as well as related concepts such as social engagement, social support, solitude, and loneliness, has proliferated in the field of gerontology (e.g., Krause, 2011). A number of summative reviews of interventions designed to reduce social isolation among older people have also been published (Cattan, White, Bond, & Learmouth, 2005; Dickens, Richards, Greaves, & Campbell, 2011; Findlay, 2003; Sabir et al., 2009), as well as a formal meta-analysis that reviewed interventions to prevent or mitigate loneliness across the lifespan (Masi, Chen, Hawkley, & Cacioppo, 2011).

The increase in research interest is due to several factors: (i) the increasing proportion of older people worldwide; (ii) the relatively smaller numbers of younger adults available as caregivers for older people in developed nations; and (iii) the concern that baby boomers (i.e., born between the years of 1946 and 1964), who have smaller social networks (McPherson, Brashears, & Smith-Lovin 2006), less likelihood of being married (Lin & Brown, 2012), and fewer children than immediately preceding generations, may become a vulnerable cohort in their old age, reliant on services because family support will be less available than for previous generations of older people (Pillemer & Glasgow, 2000).

New research, much of it based on developmental theories such as the life course perspective on health (e.g., Herzman & Power, 2003) and socioemotional selectivity theory (Carstensen, 1992), has increasingly focused on the factors that predict risk of social isolation among older people. Despite the good reasons for concern about the well-being of the baby boomers as they age, there is a theoretical and empirical consensus that social isolation is not an inevitable part of aging.

In the 1960s and 1970s, a theoretical debate took place about the typical social relations of older people and their preference for engaging in social relationships. Two diverse views were proposed: *disengagement* (Cumming & Henry, 1961), or voluntary distancing from social roles and relationships as adults approach old age, and *continuity* of social relations, or continued engagement in meaningful roles despite changes in health and mobility (Rosow, 1967). This debate has been resolved by empirical studies that have tended to support the continuity perspective. Most older people remain engaged in relationships and work actively to maintain meaningful relationships and activities (e.g., Krause, 2011; Pillemer & Glasgow, 2000). Engagement in social activities and productive roles is one of the three components of the Rowe and Kahn (1997) perspective on successful aging. In their formulation, the state of social isolation is viewed as an indicator of unsuccessful aging, rather than normal aging. Maintaining social relationships, moreover, is generally viewed as a contributor to continued health and well-being, as well as the norm for aging adults.

Moreover, despite changes in family structure over the course of the twenty-first century, intergenerational relationships in families remain strong and important, even over long distances. The majority of older adults are involved in

the lives of their children and grandchildren (Pillemer & Suitor, 2008), and there remains an expectation of reciprocity of care across generations. Thus, concerns about weakening family bonds may be overblown, although we would note that there is still good reason to be concerned about the availability of children and grandchildren to care for older adults in the future given demographic trends.

Progress in both theory and research has differentiated the concept of social isolation into multiple components. Researchers have distinguished the concept of objective social isolation (or lack of social connectedness and engagement) from perceived social isolation (the sense of feeling disconnected) and the state of loneliness (Cornwell & Waite, 2009b). The health impacts of social isolation and loneliness on physical health have also been studied (e.g., Luo, Hawkley, Waite, & Cacioppo, 2012). Thus, in the second decade of the twenty-first century research, researchers can predict with somewhat more confidence what the negative impacts of social isolation and loneliness may be and which older people are more likely to suffer those impacts. The emergence of Carstensen's theory of socioemotional selectivity (Carstensen, 1992; Carstensen, Fung, & Charles, 2003) is also relevant to understanding social isolation and its effects. Carstensen and colleagues propose that as people age, they become increasingly influenced by awareness of a limited time horizon. This awareness leads them to maximize social and emotional gains and minimize risks. As a result, they become more selective in the relationships in which they are willing to invest, preferring those social ties that are the most rewarding and deemphasizing relationships that are conflictual, disruptive, or unreliable (Carstensen; Carstensen et al.). For this reason, a simple decrease in social relationships may not be negative, but instead an indicator of selective investment in more rewarding relationships.

In this chapter, we review population trends; discuss measurement and theories in the field of social integration and social isolation in gerontology; summarize findings on the prevalence of social isolation and loneliness; highlight important new findings from the literature on social isolation, loneliness, and health; and comment on future directions in research, including important gaps that need to be addressed.

Population Trends

The health and longevity revolution of the twentieth century has resulted in longer average lifespans (Vallin & Meslé, 2009) and better medical control of some chronic diseases (Crimmins & Beltrán-Sánchez, 2010). Most people would characterize this as a societal success story. Unprecedented expectations for good health and economic independence in older age – well beyond the conventional retirement age of 65 – have resulted in a number of social changes for older people. In the United States, 27% of older people (aged 65 and older) lived alone in 2009 (US Census Bureau, 2011). The proportion of older adults living alone tends to increase

with age because of the higher probability of widowhood. Recent American Community Survey data indicate that whereas at age 65–74, 63% of adults are married, at age 90–94, 17.9% are married (He & Muenchrath, 2011). Many older adults are living alone despite developing health problems and disabilities. Of American adults aged 90 or above, 37.3% lived alone in their household even though a substantial proportion of Americans that age suffer from a disability (more than 80%, increasing to over 90% for those past the age of 95) (He & Muenchrath, 2011).

The number of older adults living alone has been met with both anticipation and concern. It is clear from disparate fields of research in gerontology, such as research on intergenerational relationships (Sechrist et al., 2012) and residential moves and transitions (Krout & Wethington, 2003), that the majority of older people prefer their independence and to remain in their own homes as long as possible. This preference arises not only from desires for privacy and familiar surroundings but also from strong social forces favoring living alone throughout the lifespan such as the availability of amenities in urban areas, increased income and income support for older people which facilitates *aging in place*, and support at a distance from family members (Klinenberg, 2005, 2012). Residential communities, home maintenance products and services, and assistive and other communication technologies have made it possible for older adults to remain living independently longer than previous generations of older adults. The busyness of their children, many of whom lead dual-earner households where time is perceived to be scarce, may also be a deterrent for combining households across generations, as well as the relative scarcity of children in comparison to previous generations.

Measuring Social Isolation: Definitional Issues

Much of the existing research on social isolation focuses on living alone (for a review, see Sabir et al., 2009), yet researchers working in the area of social isolation among older people have long contended that living alone does not equal isolation (although living alone is certainly a risk factor for isolation; see de Jong Gierveld, 1987). However, an important question to ask is whether living alone or with another older person represents a threat to future health. The answer from recent research would suggest that the answer is *no*, with some important qualifications. The rise of solo and dual-aging households in the United States is not necessarily threatening to the social integration of many older people.

As is consistent with much existing literature, we define social integration broadly as an individual's entire set of relationships and connections to others (Berkman et al., 2000; House et al., 1988; Pillemer, Moen, Wethington, & Glasgow, 2000). Thus, we include participation in social roles and groups as well as the number of social ties, friendships, and family relationships, a decision consistent with research on social networks and health (e.g., Fiori, Antonucci, & Cortina,

2006; Hessler, Jia, Madsen, & Pazaki, 1995). We define social isolation as the state of having limited or no social interaction with family, friends, neighbors, organized groups, or community members (Berg & Cassells, 1992).

Measures used frequently in the literature to assess social integration and social isolation include the Lubben Social Network Scale (Lubben et al., 2006) and the Berkman-Syme Social Network Scale (Berkman & Syme, 1979). These two scales measure interaction and frequency of contact with many levels of the social network: family, neighborhood, and community.

Social integration thus encompasses being embedded in social, neighborhood, and community groups as well as having closer relationships from which one derives functional social support (e.g., emotional, affiliative, instrumental, and tangible support). To consider social integration from the point of view of the older person, *aging in place* in a neighborhood, which could be labeled as a risk for social isolation if the older person is living alone, can also be construed as a way to maintain social integration, assure access to immediate social support from friends and neighbors, and prevent social isolation (Wiles, Leibing, Guberman, Reeve, & Allen, 2012). Solitary living is preferred among many older people (Klinenberg, 2012; Wiles et al., 2012) and may have limited impact on well-being until a crisis arises that requires response and adaptation beyond individual coping resources (see also Cloutier-Fisher, Kobayashi, & Smith, 2011; Klinenberg, 2005).

Although researchers tend to assume (with strong justification from a risk factor perspective) that living apart from close others and family is a risk for social isolation or lack of social integration, previous research on social relationships suggests that measures of living alone are inadequate to measure social isolation. Socioemotional selectivity theory (Carstensen, 1992; Carstensen et al., 2003) suggests why living alone can be a rational choice. Other theoretical and empirical work, on the networks of older people, suggests that a more diverse set of network ties – which includes friends, neighbors, and other community members – is associated with greater satisfaction and quality of life (Fiori et al., 2006; Thoits, 2011; Vaillant, Meyer, Mukamal, & Soldz, 1998). Research on perceived social support, a key indicator of well-being and a buffer for stress situations, suggests that perceptions of feeling supported are not just associated with the close personal network, but with the larger set of network ties outside the household (Thoits, 2011). Taken together, these new developments in theory suggest that a focus on living alone as an indicator of risk may be misplaced for older people.

Indicative of a shift toward considering more broadly the different facets of social integration, a special type of perceived support – loneliness, the perception that relationships are lacking – is increasingly a target of research in the general population and older people (see Goossens, Chapter 9, this volume, and Asher & Weeks, Chapter 16, this volume, for reviews). Loneliness is defined as the “perception of being detached” from others (Biordi & Nicholson, 2008) or as the perception of not having the need for socialization or social support met by the existing network of social relationships (de Jong-Gierveld, 1987). A prototype

measure of loneliness, now approaching standard use in the American research literature, is the UCLA Loneliness Scale (Russell, 1996), either in its entirety or in a three-item subset (Hughes, Waite, Hawkley, & Cacioppo, 2004) used in larger population studies such as the Health and Retirement Survey (National Institute on Aging, 2007) and the National Health and Social Life Survey (Cornwell, Laumann, & Schumm, 2008).

How Common Are Social Isolation and Loneliness?

Estimates of the prevalence of social isolation and loneliness among older people are difficult to summarize because their measurement is not standardized. Individuals who are socially isolated or lonely are often more difficult to reach, which further complicates the assessment of prevalence (Klinenberg, 2005). A major step forward in current research is that indicators of social isolation and loneliness are now being measured separately, although research is still being published which uses incomplete or nonstandard indicators of these concepts, most particularly social isolation. When measured in the same study, it is clear that factors used to measure social isolation are often substantially, albeit not fully, correlated with loneliness (Cornwell & Waite, 2009a, 2009b). There is also agreement that social isolation and loneliness are common enough among older people, particularly among the most vulnerable to health problems, to raise concern.

There is substantial consensus among researchers that although living alone is a major risk factor for social isolation among older people, not all those who live alone are socially isolated (Rokach, 2012). Typically, social isolation is indicated by a combination of living alone and one or more factors, such as geographical or community isolation (Ortiz, 2011), lack of interaction with others (Berkman & Syme, 1979), lack of group memberships (Hessler et al., 1995), and rural versus urban residence (Perissinotto, Stojacic Cenzer, & Covinsky, 2012). Cornwell and Waite (2009b), in contrast, argue that objective measures of social isolation such as those used earlier should be labeled *social disconnectedness* (lack of contact with others) along with indicators such as social network size, social network range, frequency of interaction, household size, number of friends, attendance at group meetings, socializing with family and friends, and volunteering. They recommend limiting the use of the word *isolation* to *perceived isolation* (including not being able to open up to and rely on family, friends, and spouses; feeling a lack of companionship; feeling isolated; and feeling left out).

With such diversity in measurement, it is a challenge to compute one single prevalence estimate for "social isolation." Ortiz (2011), using multiple indicators, estimated that 17% of Americans older than 65 are "socially and geographically isolated" (2011, p. 1). The prevalence of social isolation is believed to be higher in special populations, such as those with disabilities and the *homebound*. For example, Froncillo et al. (2010), using multiple indicators of availability of support and

social interaction with family and friends, found that 25% of home-delivered meal recipients in New York City could be classified as very socially isolated, with minimal levels of social contact on a daily basis (2.1% had social contact only with the person who delivered meals).

Loneliness is often reported as both a state (see Wilson & Moulton, 2010) and a level of feelings from mild to severe loneliness or a combination of the two (Perissinotto et al., 2012). Perissinotto and colleagues found that 43% of the Health and Retirement Study (HRS) participants reported feeling lonely, ranging from relatively mild loneliness to severe loneliness (endorsing at least one of three symptoms *most of the time*). An earlier study of the HRS sample, using a one-item measure, estimated the much lower prevalence of 19% (Theeke, 2009). In a national study conducted for AARP, Wilson and Moulton (2010) reported that 35% of American adults aged 45 and older reported being lonely (using the UCLA Loneliness Scale). Somewhat counterintuitively, older adults reported lower rates of loneliness than middle-aged adults – 25% of adults aged 70 and older were classified as lonely, in comparison to 43% of adults aged 45–49.

The sample for the AARP study was a nationally representative group of adults using researcher-supplied computers to answer survey questions, which could suggest that this study may have underestimated loneliness among community-dwelling older adults reluctant to try computer technology. However, other researchers have reported similar findings in relationship to age (e.g., Hawthorne, 2008). Victor and Yang (2012) found that 7.4% of UK residents aged 60 and older reported being lonely “all or most of the time” and 18.4% “some of the time” (2012: p. 95). Fokkema and colleagues (Fokkema, de Jong Gierveld, & Dykstra, 2012) compared data from adults 50 years of age and older in 14 European countries, using one item ascertaining whether respondents felt lonely much of the time during the previous week (scored 1 for yes, 0 otherwise). Reports of feeling lonely ranged from 6.3% to 25.4%, with the higher rates tending to be in southern and eastern European countries (with some exceptions), a pattern consistent with previous research (Fokkema et al., 2012). Moreover, Dykstra, van Tilburg, and de Jong Gierveld (2005) found that loneliness increased over time in a longitudinal sample of older people.

In sum, estimates of prevalence vary because of measurement variability and age groups considered in comparative studies. Yet even the lower estimated figures suggest that social isolation and loneliness are common enough for concern and justify intervention to reduce loneliness and isolation among older people.

Who Is at Risk of Social Isolation and Loneliness in Old Age?

There is a substantial literature on factors that predict becoming socially isolated in the later years of life. As summarized by Pillemer and Glasgow (2000), the major risk factors are living alone, having fewer children, loss of contact with children

because of divorce or other family events, living far away from any child, widowhood, having a smaller social network, lack of involvement in community or volunteer activities, disability or mobility problems, living in a rural versus urban area, lack of access to public transportation, multiple chronic health conditions, and sudden or gradual loss of social roles that are outlets for purposive activity and which give meaning to life.

A literature is rapidly developing that examines risk factors for loneliness among older people. Perissinotto et al. (2012), using longitudinal data, reported that participants indicating loneliness were likely to be older (71 or more years of age), female, of lower socioeconomic status, and more impaired and to have more chronic conditions. They were also less likely to be white. These factors have all been noted previously in the literature on risk factors for social isolation (e.g., Pillemer & Glasgow, 2000). However, some typical indicators of social isolation were not strongly related to loneliness in the Perissinotto study. Although lonely older people were somewhat more likely to be living alone, most of those reporting any feelings of loneliness did not in fact live alone (Perissinotto et al.). Key factors in reporting loneliness among older people in a UK sample included being female, not being currently married, smaller household size, lower education, worse health, feeling depressed, hampered in daily activity, not being frequently in social activities, and lacking someone with whom to discuss personal matters (Victor & Yang, 2012). Fokkema and colleagues found that key factors in loneliness among older adults were not having a marital/spousal partner, low socioeconomic status, and poor health at the individual level (Fokkema et al., 2012).

In their US national study of loneliness in adults aged 45 and over, Wilson and Moulton (2010) did not report on household composition or the proportion of older adults living alone and the relationship of living alone to feelings of loneliness. But their findings are consistent with others in the literature. The married were least likely to be lonely in comparison to those who were unmarried. Lower-income people were more likely to be lonely. Those who were lonely were less likely to attend religious activities, to volunteer, to take part in community activities, or to report a hobby. Those people classified as lonely reported being reluctant to approach or interact with other people when they felt lonely. They were also more likely to sleep, watch TV or use the Internet, and go out alone when they felt lonely (Wilson & Moulton, 2010).

Another health-related risk factor is increasingly acknowledged to compromise social integration: chronic pain. Pain is a debilitating and pervasive health problem, particularly among older adults. Although estimates of prevalence vary from study to study, they suggest that up to 50% of all community-dwelling older people live with chronic pain (Helme & Gibson, 2001). Researchers and clinicians acknowledge that pain conditions affect not only the older person but also the family and social network. The negative consequences of chronic pain include diminished quality of life, depression, and social withdrawal (e.g., Jakobsson, Klevsgard, Westergren, & Hallberg, 2003).

Pain is implicated in social isolation for several reasons. First, a considerable body of research substantiates the link between chronic pain and family discord, revealing that chronic pain conditions may contribute to family conflict and to negative relationship quality (Riffin, Sutor, Reid, & Pillemer, 2012). Thus, extended family members may be motivated to withdraw from the individual in chronic pain. Second, individuals in chronic pain have been found to *self-isolate* due to embarrassment about displaying pain symptoms (Smith & Osborn, 2007). Third, pain often limits mobility and therefore the ability to pursue an active social life (Zhu, Devine, Dick, & Prince, 2007). Thus, with the aging of the population, the increased prevalence of chronic pain may place additional older people at risk of isolation.

Impact of Social Isolation and Loneliness on Health and Well-Being

Not only do declining health, disability, and pain pose a risk for social isolation and loneliness: both social isolation and loneliness are hypothesized to affect physical health and well-being over the lifespan. Loneliness has been found to have a unique relationship to health and well-being even when more objective measures of social isolation are included in predictive models, such as living alone, marital status, number of active social roles, network size, and number of social relationships (Cornwell & Waite, 2009b). Loneliness and social isolation are also associated with physiological indicators of health and with medical outcomes.

For example, Perissinotto et al. (2012) found that loneliness was associated prospectively with declines in mobility, increases in dependence for activities of daily living, and mortality over a prospective 6-year period in the US Health and Retirement Survey. The effect of loneliness held even when controlling for more objective indicators of social isolation, specifically living alone and urban versus rural residence. Cacioppo, Hawkley, and colleagues, in multiple studies, have reported that loneliness was associated prospectively with decreased or disturbed sleep, less effective inflammatory control, and disrupted health behaviors (Hawkley, Burleson, Bernstson, & Cacioppo, 2003; Hawkley, Masi, Berry, & Cacioppo, 2006; McDade, Hawkley, & Cacioppo, 2006). Hackett, Hamer, Endrighi, Brydon, and Steptoe (2012) found, using the Whitehall II cohort in England, that loneliness was a predictor of stress-related inflammatory and neuroendocrine function indicators among women, indicating that loneliness may dysregulate the inflammatory and neuroendocrine systems in women. Loneliness has also been connected prospectively with the risk of developing Alzheimer's disease (Wilson et al., 2007).

But objective social isolation is also related to poorer health. In a prospective study, Heffner, Waring, Roberts, Eaton, and Gramling (2011) found that social isolation, defined objectively using a version of the Berkman-Syme (1979) index, was related to increased risk for coronary heart disease (C-reactive protein) and

heart disease mortality in two studies, with the more socially isolated showing more than twice the odds of death from heart disease than the more socially integrated middle-aged adults over a 15-year period.

Even when loneliness is measured and controlled in analyses, indicators of social isolation can uniquely contribute to health outcomes. For example, Shankar, McMunn, Banks, and Steptoe (2011) found that both a multi-item measure of social isolation (not living with a partner, less than monthly contact with family and friends, and lack of group contacts) and loneliness were related prospectively to health behavior and physiological factors related to the development of cardiovascular disease. The authors suggested that loneliness and social isolation operate through different pathways on health, with both associated with physical inactivity and other risky behaviors (e.g., smoking), while social isolation was associated with physiological markers such as blood pressure, fibrinogen levels, and C-reactive protein levels.

Are the Baby Boomers More at Risk for Social Isolation and Loneliness as They Age?

Although social isolation and loneliness are not perfectly correlated, it is important to note that the indicators of social isolation are still significant risk factors for loneliness across the life course. It is also the case that events such as widowhood, loss of other close family members, and worsening health problems are prospectively associated with loneliness (for a review, see Pillemer & Glasgow, 2000). Moreover, loneliness increases as older adults age (Dykstra et al., 2005), and this appears due to events that occur more frequently among older people, such as widowhood. Thus, cohort studies of the American population, focusing on the marital behavior and living arrangements of Americans, are important sources of predictive data on the potential for loneliness and social isolation as the baby boomers age. Lin and Brown (2012) examined demographic trends among baby boomers that will likely change the landscape of living arrangements for older adults in the future. The rising rate of divorce among baby boomers and the geographical mobility of children and older adults suggest that more adults will be living alone as they reach retirement age. Further, the fact that baby boomers on average had fewer children than their own parents means that fewer children will be available to provide help and care.

However, there are mitigating trends. Better health means baby boomers will live longer and independently in their communities and that they are likely to be productive contributors to social life rather than dependent on social services. Rising living standards have lifted housing quality, and the spread of universal design (Steinfeld & Maisel, 2012) suggests that older people who can afford it will invest in home furnishings that support independent living for a longer period of time.

Yet it is important to note that such developments are benefiting more highly educated people and that less educated people may be falling behind (Olshansky et al., 2012). Older people with fewer socioeconomic resources, such as education

and income, have less access to benefits (Ortiz, 2011) and formal sources of support. Greater longevity means longer retirements and more distance from meaningful social roles that have defined adult life. Those of lower socioeconomic status may experience more distance from those roles.

Another changing factor is intergenerational relationships within the family. Increasing longevity among older people implies that a larger number of middle-aged and even older people have living parents. As we have noted, parent-child relationships continue over the course of life, with implications for the health and well-being of both generations (Sechrist et al., 2012). Earlier fears expressed in the gerontological literature that children and parents become more distant over time are unfounded; modern communication and transportation systems and increasing use of social media and other Internet-based communications may be a powerful counter to social isolation and even loneliness in later life.

Future Directions in Research

The goal of this chapter was to lay out the current state of theory and research on social isolation and loneliness among older adults and to forecast the future, both for research and for future cohorts of older adults. In the beginning of this chapter, we stated that research and theory on social isolation and loneliness have moved toward the view that older adults do not inevitably draw away from social engagement, although the type of social engagement may change in order to compensate for increasing health problems, leaving or losing important social roles, and perceiving more restricted time horizons. We also stated that research and theory have progressed beyond relying on relatively crude measures of social isolation (e.g., living alone) to a more multidimensional understanding of dimensions of social isolation, including perceived social isolation and loneliness.

An important point of our chapter is the bidirectional nature of the relationship between health and social isolation and loneliness. Not only might declining health increase social isolation and loneliness, but also social isolation and loneliness may be potent predictors of declining physical and cognitive health. As well, the social environment – objective factors such as living alone and a small social network – is an important risk factor for developing social isolation.

Yet the impact of these environmental and social factors is likely to be very dependent on individual life history, social context, and perhaps even public policy. There are subgroups of older people who are more vulnerable to developing social isolation and subsequently loneliness. Subgroups that we believe are more vulnerable to developing social isolation and loneliness are:

Older women – Although men are living longer and fewer women are living alone in 2012 than in previous decades (Kreider, 2011), older women are at risk because of their lower rates of remarriage. Coupled with their average lower incomes

compared to men and continued dependence on Social Security for income, living alone is a significant risk factor for social isolation as women age.

Older people who provide care to other older people (particularly spouses and the children of very old people) – The demands of caregiving affect physical health, well-being, and social interactions. According to the most recent National Long-Term Care Survey, 52% of those who provide care to their spouses are aged 75 or older (Houser, Gibson, & Redfoot, 2010).

Non-married baby boomers – Because of lower marriage and remarriage rates, a higher rate of divorce that has persisted over time (Lin & Brown, 2012), and a smaller number of children, baby boomers will enter old age with fewer strong family contacts.

Lower-income older people – The well-documented lack of saving among lower-income baby boomers means that they will not have economic resources to pay for services and technology to compensate for increasing disability and remain socially engaged (Ortiz, 2011). Even wealthier baby boomers, because of the 2008 financial crisis and Great Recession, may be retiring with fewer resources than expected, and this will challenge their ability to adapt (Rosnick & Baker, 2010).

Older adults with smaller social networks – Social networks decrease in size the longer a person is past retirement. Older people report less daily social interaction and contact (Cornwell, 2011).

Older adults who lack community engagement – Rates of volunteering remain low, especially among older adults, despite strong evidence that community engagement is beneficial (Morrow-Howell, 2010).

Despite the progress of the last decade in understanding social isolation among older adults and its prevalence, causes, and consequences, there remain two pressing issues in the research literature: (i) lack of standardized measurement and (ii) the relative paucity of theory-based interventions to reduce social isolation and loneliness.

An important issue is the lack of standardization of measures of social isolation. The social connectedness measures developed by Cornwell and Waite (2009a, 2009b) are a step forward. The increasing use of structured questions about loneliness in national and local surveys is also a step forward, but the measure needs to be applied more consistently. It is often hard to estimate the prevalence of loneliness and its impact because researchers do not always distinguish occasional or mild feelings of loneliness (state) from a persistent state of loneliness (trait), which may have clinical significance. Severe, persistent loneliness must be a more aversive state, but most studies do not explicitly address whether severe loneliness poses greater threat to health. Yet severe loneliness among older people would appear to be the most urgent target for intervention.

A second issue is the need for more theory-based interventions (Dickens et al., 2011; Pillemer & Suior, 2000). Intervention design would also greatly benefit from attention to different types of outcomes, specifically increasing social contact in distinction from alleviating feelings of loneliness, as evidence suggests that social isolation and loneliness may have different causes (Masi et al., 2011).

Finally, we believe that research and interventions to help prevent social isolation and loneliness among older people would benefit from more widespread use of life course theory in longitudinal studies of the population to understand how older people develop and maintain their social networks (Berkman, 2009; Wethington et al., 2000). More attention should be paid to the life course antecedents of social isolation and loneliness among older people as well the variability of settings in which older people live. The tendency toward social isolation in old age, and perhaps loneliness as well, is developed over the course of life experiences, not just events unique to the later years of life. We believe that research on the life course and social relationships strongly suggests that younger and middle-aged people would benefit greatly from education about the importance of maintaining social connections from middle age to older age. Social relationships are the foundation of successful aging.

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Part III

Solitude Across Contexts

Anxious Solitude at School

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This chapter concerns the school experiences of children who play alone at elevated rates when among peers at school primarily due to social anxiety rather than alternative reasons (i.e., unsociability or preference for solitude). We use the term *anxious solitary* to describe such children. Anxious solitary children encounter the challenges of social interaction at school more so than in any other setting. School is the primary social organizational structure that brings children in contact with peers and in which children spend a majority of their waking hours (Larson, 2001). Likewise, schools bring children in contact with teachers, who (after parents) are the adults who typically have the most responsibility for guiding children's development and with whom children spend the most time. More broadly, schools construct a temporal rhythm for children in which classmates and teachers are reshuffled into different classrooms on a regular basis (often annually), and children progress from one school to another as they develop, thus imposing a rhythm on the formation and termination or waxing and waning of school-based relationships and classroom-based peer structures and interaction patterns (Spangler Avant, Gazelle, & Faldowski, 2011). Classrooms also vary widely in the level of emotional support which they provide to children (Pianta, La Paro, Payne, Cox, & Bradley, 2002). Thus, schools are not simply a place to study child development because they are where children can be found. Rather, schools engineer the context and temporal rhythm of children's development in myriad ways. In this chapter we first frame relations between anxious solitary children and their school environments in terms of contemporary developmental theory, and then we review the literature on peer, teacher, and broader school environment influences on the development of anxious solitary children.

Anxious Solitary Children: Individual–School Environment Relations from a Developmental Perspective

Anxious solitary children are conceptualized as wanting to play with their peers (having normative social approach motivation) but relatively seldom engaging with peers because of fear that they may behave incompetently and be treated poorly by peers (Gazelle & Ladd, 2003). These fears are also characterized as high social avoidance motivation (Asendorpf, 1990) or social evaluative concerns. This conflict between normative social approach and high avoidance motivation is manifested at school in relatively high rates of reticent behavior: solitary onlooking (watching other children play without joining) and solitary unoccupied (wandering aimlessly, staring into space) behavior (Coplan, Arbeau, & Armer, 2008). In addition to reticent behavior, anxious solitary children display shy, verbally inhibited, socially hesitant behaviors (Spangler & Gazelle, 2009). The term anxious solitude is used in this chapter when reviewing both research on this construct and components of this construct (e.g., shyness).

Anxious solitary children as heterogeneous integrated systems

Although anxious solitary children share this common affective–behavioral profile, they also differ from one another in many ways. In order to understand differential vulnerability among anxious solitary children to social, emotional, and academic difficulties at school, it is essential to conceive of the child as an integrated multidimensional system (e.g., including observable social behavior, and less observable levels of social cognition, emotional processes, psychophysiological systems involved in responses to stress, and genetic variation), consistent with a Developmental Science perspective. According to an overarching Developmental Science theoretical framework, development is conceptualized as resulting from the dynamic interaction of multilevel forces both within the child and external to the child (Magnusson & Cairns, 1996). This emphasis on multiple levels within the child encourages researchers to understand how the child functions as an integrated system in which the impact of a single child characteristic, such as anxious solitude, on the child's interactions with the school environment can only be understood in the context of other aspects of the child system. Although considering all within-child levels of variation mentioned earlier is beyond the scope of the current chapter, we will consider heterogeneity among anxious solitary children in social behavior, inhibitory control, and linguistic skill.

Anxious solitude may impact the child's peer relations differentially in the context of other child social behavioral characteristics (e.g., agreeableness, aggression; Gazelle, 2008). In one study examining multiple dimensions at the social behavioral level, anxious solitary children who demonstrated externalizing and attention-seeking behaviors were highly excluded and victimized by peers at school, whereas

those who were agreeable had positive peer relations (Gazelle). Likewise, aggressive compared to nonaggressive anxious solitary children have consistently been found to experience more pronounced peer exclusion and victimization across multiple investigations (Bowker, Markovic, Cogswell, & Raja, 2012; Gazelle & Ladd, 2003; Ladd & Burgess, 1999). We would expect such social behavioral differences among anxious solitary children to contribute to differences in the quality of their relationships with teachers as well, although such patterns have yet to be investigated to our knowledge. However, one investigation suggests that teachers rate anxious solitary children with advanced versus average to low language skills as more dependent (Rudasill, Rimm-Kaufman, Justice, & Pence, 2006). This may occur because this subgroup of anxious solitary children uses their linguistic skills to initiate interactions with teachers.

Additionally, evidence supports poor inhibitory control (i.e., ability to display acceptable behavior by resisting the temptation to commit a forbidden act) as a specific pathway to increasing anxious solitude over the course of middle childhood (Booth-LaForce & Oxford, 2008). Children who displayed this trajectory also experienced elevated peer exclusion at school. These findings are compatible with the characterization of some solitary children as immature relative to age-mates (Rubin, 1982; Rubin & Mills, 1988). It may be that both attention seeking and poor inhibitory control are tapping related constructs which peers are likely to perceive as immaturity.

Additional characteristics did not fully account for the extent that anxious solitary children experienced peer difficulties – rather, it was the combination of anxious solitude and attention-seeking or externalizing behaviors that corresponded with more peer difficulties than the additive effects of either characteristic alone (Gazelle, 2008). This may occur because anxious solitude makes children vulnerable (i.e., easy to mistreat, unlikely to defend themselves or to have friends who will defend them) in the eyes of their peers and additional aversive characteristics motivate peer mistreatment (Gazelle, 2008; Hodges, Malone, & Perry, 1997). It is in this manner that children function as integrated systems, and the impact of single characteristics on the child's interactions with the school environment cannot be fully understood when viewed in isolation. Greater research attention is needed to understand how heterogeneity among anxious solitary children affects their relations with teachers and broader school environments.

Anxious solitary children as differentially sensitive to school environments and school environments as differentially supportive

Given anxious solitary children's concerns about their social competence and negative treatment among peers, they may find school and the frequent interactions with peers that this setting demands particularly challenging. Indeed, as detailed in a following section, compared to other children, anxious solitary children experience heightened peer difficulties at school on average. A Developmental Science model

of development suggests both (i) that children enter their school environments with functional styles that differentially equip them to adjust to the demands of their particular school environment and (ii) that school environments differ in the demands they make on children and the support they offer children in adjusting to these demands (Pianta et al., 2002), as detailed in the section on school environments at the end of this chapter. Both of these observations lead to a more specific conceptualization of school influences on child development which emphasizes the interaction between the individual child and their school environment.

Child \times environment models of development are designed to explain why children with certain vulnerabilities, such as a propensity to withdraw from social interaction with peers, successfully adjust to some environments but demonstrate difficulties in others (Magnusson & Stattin, 2006). Such models are related to diathesis \times stress models of psychopathology which similarly describe how child vulnerabilities result in psychopathology primarily in the context of stress (Abramson, Alloy, & Metalsky, 1988). These models frame developmental outcomes as a joint function of the child's vulnerabilities and strengths and the stress and support offered by the school environment. Consequently, anxious solitary children's adjustment to school can be construed as resulting from a dynamic interaction between their functional style and the treatment they receive from peers, which subsequently feeds back to the child in a manner that can either exacerbate or ameliorate their social fear and solitary behavioral tendencies.

Anxious solitary children's current functioning as a reflection of past peer experiences

Contemporary developmental theory describes joint child and environment contributions to development, and it is ultimately acknowledged that the child and environment are fused (i.e., not able to be completely separated). This occurs, for example, when anxious solitary children's current functioning reflects their experiences in prior environments. For instance, anxious solitary children who habitually experience peer difficulties at school compared to those who do not demonstrate more emotional upset and more sustained cardiac stress responses over time when they encounter a new peer challenge at school (Gazelle & Druhen, 2009). This pattern suggests stress reactivity may not simply be a reflection of temperament but rather may also be acquired when anxious solitary children regularly encounter difficulties with their classmates.

Anxious solitary children's adjustment to environmental change: school transitions

Throughout this chapter, we review research on anxious solitary children's adjustment at school not only in general but also specifically during school transition periods when research on transitions in anxious solitary children is available. School transitions are of particular interest because they provide a unique opportunity to

study the capacity for change in anxious solitary children's adjustment across often contrasting pre- and post-transition school environments. Such cross-contextual comparisons are particularly important for understanding the contributions of the child versus the environment to development. Additionally, because school transitions typically bring previously unacquainted youth into contact with one another, they provide the opportunity to observe processes of relationship formation and the emergence of potentially novel interaction patterns.

Peer Relations of Anxious Solitary Children at School

Research on children's peer relations is typically conducted in school contexts, yet school context is often overlooked as an influence of children's peer relations. As we review the research literature on anxious solitary children's peer relations, we highlight the influence of school context where possible, particularly emphasizing the ways in which school organization (e.g., reshuffling children and teachers into different classrooms on an annual basis) prompts children to form new interpersonal relations. We first focus on group-level peer treatment of anxious solitary children (e.g., exclusion, victimization) and then focus on anxious solitary children's dyadic peer relationships (i.e., friendships).

Group-level peer relations

Peer difficulties and their early emergence. Anxious solitary children, on average, have been found to suffer from peer relations difficulties at school, including poor acceptance and elevated peer rejection, as well as poor peer treatment, including both peer exclusion and victimization (e.g., Gazelle, 2008; Gazelle & Ladd, 2003; Gazelle et al., 2005; Prakash & Coplan, 2007). Exclusion indicates that a child is left out of peer activities. This can occur directly (e.g., "You can't sit here," "You can't play with us") as well as indirectly (e.g., a child is not approached at recess). Peer victimization indicates that a child is targeted for various forms of mistreatment, such as name-calling and physical abuse. Peer exclusion stands out as demonstrating a particularly robust relation with anxious solitude at school. Observations of children's naturalistic play at recess indicate that anxious solitary children encounter peer exclusion far more often than peer victimization and that exclusion is most often indirect (Gazelle, 2008). Although early research suggested that anxious solitary children did not experience elevated levels of peer difficulties until third grade (8 years of age; Younger, Schwartzman, & Ledingham, 1985, 1986), multiple contemporary investigations indicate that anxious solitary children encounter peer difficulties as early as kindergarten and preschool (Gazelle & Ladd, 2003; Hart et al., 2000).

Although the argument is often made that anxious solitary boys, compared to girls, demonstrate more peer relations difficulties and other adjustment difficulties (e.g., Coplan, Gavinski-Molina, Lagace-Seguin, & Wichmann, 2001), sex differences

in the adjustment of anxious solitary children are dependent upon age and the criterion of interest. Evidence suggests that anxious solitary boys experience more elevated peer difficulties than anxious solitary girls in early middle childhood (although anxious solitary children of both sexes demonstrate elevated peer difficulties in comparison to their same-sex peers; Gazelle, 2008; Gazelle & Ladd, 2003), whereas children of both sexes experience similarly elevated peer difficulties in early adolescence (Gazelle & Rudolph, 2004; see also Blöte, Bokhorst, Miers, & Westenberg, 2011; Miers, Blöte, & Westenberg, 2010). This may be because shyness is more discrepant with male sex norms emphasizing self-assertion and dominance in early middle childhood, but the ability to take social initiative is expected of both sexes in adolescence (Gazelle & Rudolph, 2004).

The process of becoming mistreated by peers. Knowledge about processes through which anxious solitary children become disliked, excluded, and victimized by peers stems from both experiments and field-based research in which continuity and change in peer relations is tracked over time (several grades in school). Research based on videotaped speeches suggests that young people detect anxious social behavior in unfamiliar peers very rapidly (within 2 min) and report low desire to interact with them as a consequence (Blöte et al., 2011; Miers et al., 2010). However, observational studies of anxious solitary children's interactions with familiar versus unfamiliar peers reveal that even though unfamiliar children liked anxious solitary children less than other children after a 1 hr-long play session, they victimized them less than familiar peers over five consecutive play sessions and this contributed to improvements in anxious solitary children's social behavior over this period of time (Gazelle et al., 2005). Thus, peer mistreatment is likely to evolve more slowly than attitudinal dislike. Because children may be reluctant to mistreat others when negotiating relations in a new social group, anxious solitary children may have a window of opportunity to experience positive peer interactions (or at least the absence of negative interactions) when encountering unfamiliar peers (Shell, Gazelle, & Faldowski, 2014).

Consistent with these temporal patterns driven by familiarity, our research has indicated that temporal patterns of peer exclusion are strongly influenced by annual classroom transitions in which children are reshuffled into classrooms within the same school. Exclusion is lowest in the fall at the beginning of each new school year as peer groups are being formed and then increases across the school year (Spangler Avant et al., 2011). This suggests that children are most likely to engage in exclusion after their peer groups have been established in order to avoid the addition of (or eliminate) members they think might (or do) unfavorably alter group dynamics. Exclusion may be less likely to occur earlier in the formation of peer groups because children may sense that it is risky to exclude a peer when there is no firm consensus about who belongs to their peer group and they are not yet confident that other children will support their actions.

Again consistent with temporal patterns driven by peer familiarity, in our recent research we have found that peer exclusion and victimization decreased dramatically

on average at the transition to middle school when social groups were not yet established but exclusion subsequently increased moderately during the first 2 years of middle school as adolescent's peer groups became well established (Shell et al., 2014; see also Paul & Cillessen, 2003). Most importantly, this pattern was particularly beneficial for adolescents high versus low in anxious solitude, who experienced greater relative decreases in exclusion and victimization at the middle school transition (despite elevated exclusion in both elementary and middle school; Shell et al.). These findings are in contrast to past investigations which have framed youths' internalizing problems and academic adjustment after school transitions as at risk (Coplan & Arbeau, 2008; Hirsch & Rapkin, 1987; Talwar, Nitz, & Lerner, 1990). Thus, our findings indicate that anxious solitary youth are likely to experience a substantial decrease in exclusion and victimization when they transition to a new school context in which their peers are forming new peer relationships and they are largely freed of their prior reputations, but are likely to experience the return of somewhat elevated exclusion as time passes and peer groups become solidified. This suggests that timing intervention for anxious solitary youth just before and during school transitions could produce a synergy between the natural affiliative dynamics of peer groups at this time and the skills the anxious solitary individual brings to this situation.

Behavioral and emotional consequences of peer mistreatment. Consistent with a child \times environment perspective, when anxious solitary children encounter peer exclusion at school, they demonstrate more stability or increase in anxious solitude (Booth-LaForce & Oxford, 2008; Gazelle & Ladd, 2003; Oh et al., 2008) and elevated depressive symptoms over time (Gazelle & Ladd, 2003; Gazelle & Rudolph, 2004). Peer exclusion may heighten the stability of anxious solitude in part because exclusion confirms anxious solitary children's social fears (Gazelle & Ladd, 2003). Consistent with this possibility, other research also supports bidirectional, mutually exacerbating relations between exclusion, victimization, and social anxiety over time (Siegel, La Greca, & Harrison, 2009). Moreover, consistent with the helplessness–hopelessness model of the relation between anxiety and depression (Alloy, Kelly, Mineka, & Clements, 1990), exclusion may transform anxious solitary children's concerns that they will not be able to effectively respond to peer mistreatment if it should occur (helplessness), into certainty that they will be mistreated by peers and the continued feeling of inefficacy in their ability to change this situation (hopelessness; Gazelle & Ladd, 2003; Gazelle & Rudolph, 2004).

Examining continuity and change in anxious solitary behavior and the internalizing problems of anxious solitary youth around school transitions is of particular importance because these periods of self-reorganization prompted by environmental change could result in either exacerbation of difficulties or positive change. On the one hand, it could be that anxious solitary children experience the challenge of forming new relationships with peers and teachers as particularly stressful, thus prompting the intensification of their anxious solitude

post-transition (Coplan & Arbeau, 2008). On the other hand, it could be that the collective process of renegotiating peer relations and being freed of previous reputation and peer status that occurs post-transition produces social opportunities that are particularly helpful for anxious solitary children, thus prompting improvement in anxious solitude post-transition.

One recent study documented a dramatic decrease in anxious solitude at the middle school transition. This decrease occurred for children on average but was particularly pronounced for children who had demonstrated elevated anxious solitude immediately prior to the transition (Shell et al., 2014). This decrease in anxious solitude may be driven by the corresponding dramatic decrease in peer exclusion and victimization that occurred at the transition. Another investigation yielded compatible findings in which children who demonstrated decreased anxious solitude across the middle school transition from fifth to eighth grade also demonstrated declining peer exclusion and victimization across this period (Oh et al., 2008). In contrast, children who experienced increased peer exclusion and victimization after the transition demonstrated modestly increased anxious solitude during this period. These patterns are consistent with those documented during non-transition periods in which elevated peer exclusion predicted heightened stability of anxious solitude over time (Gazelle & Ladd, 2003). Collectively these patterns support the notion that peer difficulties reinforce anxious solitary children's social fears and thus maintain or exacerbate their anxious solitude.

Because internalizing symptoms typically increase during adolescence (Angold & Rutter, 1992), they might be particularly likely to be exacerbated by transitions to middle and high school. The middle school transition, more than other time periods, has been associated with elevated rates of depression, anxiety, and physical symptoms for children on average (Barber & Olsen, 2004; Chung, Elias, & Schneider, 1998; Tram & Cole, 2006). The impact of transitions on anxious solitary youth's internalizing symptoms in particular has yet to be investigated. On the one hand, decreased peer mistreatment after a school transition may promote emotional health. On the other hand, the difficulty of making new friends and meeting the increased demands for mature behavior and academic achievement may contribute to internalizing problems. Anxious solitary children are at elevated risk for internalizing symptoms in general (Gazelle & Ladd, 2003; Gazelle, Workman, & Allan, 2010; Rubin & Mills, 1988), and research is needed into their emotional adjustment during transition periods.

Dyadic-Level Peer Relations: Friendship

Friendship quantity and stability. Research is somewhat mixed in regard to whether anxious solitary children have normative numbers of reciprocated friendships at school. Some researchers have found that anxious solitary children are as likely as other children to have a single, stable reciprocated best friendship (Rubin, Wojslawowicz, Rose-Krasnor, Booth-LaForce, & Burgess, 2006). However, research

on quantity of reciprocated friendships indicates that attention-seeking and externalizing anxious solitary children have fewer reciprocated friends than normative children (less than one on average), whereas other anxious solitary children enjoy as many reciprocated friendships as normative children (more than one but fewer than two friends on average; Gazelle, 2008). Although some researchers question whether having more reciprocated friendships is a sign of better adjustment, friendlessness is a concern when considering groups that have less than one friend on average. Furthermore, friendlessness and friendship instability have been found to predict increasing anxious solitude in early adolescence (Oh et al., 2008). Additionally, having more close friends has been shown to attenuate the relation between social anxiety and loneliness and peer victimization (Erath, Flanagan, Bierman, & Tu, 2010). Even friends in different grades at school have been found to protect anxious solitary boys (but not girls) from peer victimization (Bowker & Spencer, 2010).

Nonetheless, compared to other children's friendships, anxious solitary children's friendships may provide less protection from victimization. Anxious solitary children's friends are likely to be behaviorally similar to themselves (i.e., withdrawn and victimized; Rubin, Lynch, Coplan, & Rose-Krasnor, 1994; Rubin, et al., 2006), and there is evidence that friends who are anxious solitary provide little protection against peer victimization (Hodges et al., 1997). Taken together, although anxious solitary children, on average, appear to enjoy comparatively less benefits of friendship than other children, their friendships nonetheless appear to be somewhat beneficial. Additionally, agreeable anxious solitary children enjoy ample friendships (Gazelle, 2008), and it may be that the quality and benefits of these friendships are better than would be suggested by average patterns for anxious solitary children.

Friendship quality. Both anxious solitary children and their friends rate the quality of their friendships to be poor relative to the friendships of control children (Rubin et al., 2006; see also Schneider, 2009). Specifically, anxious solitary children reported low companionship; both anxious solitary children and their friends reported low help, guidance, and overall friendship quality; and anxious solitary children's friends reported low intimate exchange and conflict resolution. Similarly, a separate study found that anxious solitary children's friends perceived their reciprocated friendship to be less close and helpful than did the anxious solitary child (Schneider, 1999). These patterns suggest that many anxious solitary children are relatively passive even within reciprocated friendships (Schneider, 2009) and point toward the need for relationship skills to be incorporated into interventions for these children. It is also important to keep in mind these friendship patterns may stem from the qualities of children who become friends with anxious solitary children (Gazelle & Spangler, 2007). Thus, it may be important to address anxious solitary children's conceptions of what makes a good friend in the context of intervention.

The process of forming friendships. Children and adolescents must develop new friendships with unfamiliar peers after school transitions, and this appears to be

particularly challenging for anxious solitary youth, who are less likely than others to approach peers (Asendorpf, 1990). There is research indicating that anxious solitary students take longer to establish new friendships after the transition to college, although they eventually obtain approximately equivalent numbers of friends (Asendorpf, 2000; see also Asher & Weeks, Chapter 16, this volume; Bowker, Nelson, Markovic, & Luster, Chapter 10, this volume). These delays in forming positive social relationships continue into adulthood. For example, men who were shy in childhood married and started families later than men who were not shy, although they eventually achieved these milestones (Caspi, Elder, & Bem, 1988; Kerr, Lambert, & Bem, 1996). This delay in forming new relationships may occur not only because of anxious solitary individual's hesitancy to approach others but also because they do not easily have ongoing interactions which permit them to get to know others and for others to get to know them. There is evidence that anxious solitary youth cope with this delay in post-transition friendship formation by maintaining pre-transition friendships (Asendorpf, 2000). More is known about delayed friendship formation in anxious solitary adults than youth. Research is needed into these processes and their potential emotional consequences (e.g., loneliness) at earlier school transitions.

Taken together, many anxious solitary children encounter difficulties with both group-level and dyadic peer relations at school. However, when anxious solitary children encounter positive peer relations, this supports their positive adjustment at school. Similar patterns have also been found in anxious social children's relations with teachers.

Teachers' Relationships with and Perceptions of Anxious Solitary Children

Teachers, after parents, are the adults who typically have most responsibility for guiding children's development in social and emotional as well as academic domains. However, the quality of anxious solitary children's relationships with teachers may influence the extent that they benefit from the guidance that these adult figures can provide.

Teacher-child relationships

Teacher-child relationships are typically evaluated via teacher report on three dimensions: closeness (warmth and positive communication), conflict (tension, hostility, and frequent disputes), and dependency (overreliance on the teacher; Pianta, Hamre, & Stuhlman, 2003). Teachers report that their relationships with anxious solitary versus other children are less close and less conflictual on average (Arbeau, Coplan, & Weeks, 2010; Rudasill, 2010; Rudasill & Rimm-Kaufman, 2009; Rydell, Bohlin, & Thorell, 2005). There is also some evidence to suggest that

teachers see their relationships with anxious solitary children as more dependent than those with other children (Arbeau et al., 2010). These qualities of relationships mirror those of anxious solitary children's relationships with their friends (particularly low closeness as reported earlier) and parents (insecure ambivalent attachment; Sroufe, Fox, & Pancake, 1983).

This similarity in children's parent and teacher relationships is consistent with evidence that insecure parent-child attachments are associated with less secure teacher-child attachments (Rydell et al., 2005) and the idea that parent-child attachments form the foundation of children's expectations for other relationships (see Bukowski & Verroneau, Chapter 2, this volume). Insecure ambivalent attachment is characterized by the child's demonstration of ambivalent feelings toward the parent after a brief separation (e.g., seeking proximity with the parent but displaying anger and resisting the parent's attempts to calm them). This attachment style is associated with inconsistent parenting (e.g., inconsistent responsiveness; Ainsworth, 1979). Under these circumstances, a child may feel uncertain about whether their parent will be available for them when they are distressed. This uncertainty is thought to impede the child's exploration of the world and feeling of trust in relationships.

Consistent with this attachment framework, evidence suggests that anxious solitary children are less able than others to use teachers as a secure base for exploration (Rydell et al., 2005). Despite some evidence of dependency on teachers, anxious solitary children spend less time than other children engaging in interaction with teachers (Rudasill, 2010) and make fewer explicit bids to get the teacher's attention (Rudasill & Rimm-Kaufman, 2009). As a result, anxious solitary versus aggressive children's teacher-child interactions are less likely to be initiated by the child and more likely to be initiated by the teacher (Coplan & Prakash, 2003). Consequently, anxious solitary children may be less able to effectively communicate their needs to teachers and therefore derive less support from them.

Teacher-child relationships are not only an important resource during the time that children spend in the teacher's classroom but are also predictive of future child adjustment. In early childhood, preschoolers with less secure (i.e., less close) and more dependent teacher-child relationships were more withdrawn 5 years later (Howes, Hamilton, & Matheson, 1994). Similarly, in first grade, elevated dependency on teachers strengthened the link between anxious solitude at the beginning of the school year and asocial behavior and peer exclusion 6 months later (Arbeau et al., 2010). Thus, at a minimum, teacher-child relationships are sensitive markers of child adjustment and may well represent relational processes which influence the course of children's future development.

Teacher appraisals of anxious solitary children

Teacher interpretations of children's behavior influence the nature of their interactions with children (e.g., providing support vs. discipline; Keogh, 2003). Consequently, teacher appraisals of anxious solitary children's social and academic

competence may influence their decisions about whether to intervene and what type of intervention is appropriate. Teachers' social and academic appraisals have been assessed in two ways: via rating descriptions of hypothetical anxious solitary children or directly rating their anxious solitary students.

Social adjustment. In response to hypothetical vignettes, teachers report that there are social and academic costs associated with anxious solitude (Arbeau & Coplan, 2007; Coplan, Hughes, Bosacki, & Rose-Krasnor, 2011). Consistent with evidence from hypothetical appraisals, teachers report that their anxious solitary students demonstrate or experience more anxiety and peer exclusion (Arbeau et al., 2010; Gazelle & Ladd, 2003; Gazelle & Rudolph, 2004), more social avoidance and less prosocial behavior with peers (Flanagan, Erath, & Bierman, 2008), and more depressive symptoms (Gazelle & Ladd, 2003).

Teachers further report that they view anxious solitary behavior described in hypothetical vignettes as driven by the situation (vs. internal personality traits; Arbeau & Coplan, 2007) and as malleable (Brophy & McCaslin, 1992). Teachers report that they would use indirect, peer-focused, and social relationship-building interventions (e.g., private talks and special activities designed to encourage social engagement) to improve hypothetical anxious solitary children's peer relations (Brophy & McCaslin, 1992; Coplan et al., 2011; Evans, 2001) and changing the environment to better suit the child (e.g., encouraging peers to invite an anxious solitary child to play; Brophy & McCaslin, 1992). To our knowledge, no studies have assessed teacher-initiated intervention strategies with their anxious solitary students. However, the competing demands that teachers juggle may mean that their responses on questionnaires bear little relation to their daily actions toward anxious solitary children, despite their accurate observations of anxious solitary children's social difficulties.

Academic ability. Anxious solitude also appears to influence teachers' perceptions of academic ability (Henderson & Fox, 1998; Keogh, 2003). Teachers expect low academic performance from anxious solitary children (Arbeau & Coplan, 2007; Coplan et al., 2011) and expect them to be less intelligent than more talkative children (Coplan et al., 2011; Evans, 2001; Lerner, Lerner, & Zabiski, 1985). Similarly, teachers underestimate the intelligence of children who take longer to adjust to new situations (as anxious solitary children often do) and overestimate the intelligence of children who react positively and quickly (Gordon & Thomas, 1967). However, these expectations vary based on other child characteristics (anxious solitary children with poor verbal performance are expected to do particularly poorly; Evans, 2001), as well as teacher characteristics (more vs. less talkative teachers expect anxious solitary children to do more poorly academically; Coplan et al., 2011).

Increased academic difficulties often emerge as youth adjust to new expectations and requirements after school transitions (Rudolph, Lambert, Clark, & Kurlakowsky,

2001; Simmons & Blyth, 1987). Such patterns may be particularly strong in anxious solitary children. In kindergarten, learning goals are often focused on group socialization. For instance, participation in structured group activities is a common kindergarten socialization goal that may be particularly challenging for anxious solitary children. Consistent with this possibility, children who demonstrated temperamental risk for anxious solitude (behavioral inhibition) in infancy were less likely to speak in group and teacher-guided contexts and more likely to engage in solitary onlooking behavior in kindergarten (Rimm-Kaufman & Kagan, 2005). Furthermore, anxious solitary tendencies may contribute to avoidance of later schooling. For example, women who were shy in childhood were less likely to go to university and join the workforce than women who were not shy (Caspi et al., 1988; Kerr et al., 1996). Thus, because schooling is an inherently social activity, anxious solitude can interfere with academic and career advancement for some anxious solitary youth. This may have more to do with the social challenges that are a part of schooling rather than academic ability. Additionally, it is important to acknowledge that individual differences in anxious solitary children's academic performance have been observed. There is evidence that a subset of anxious solitary children excel academically and fare well with peer relations (Gazelle, 2008).

Because academic difficulties in anxious solitary children may arise from a poor fit between their affective-behavioral style and environmental demands, environmental changes may improve classroom participation. In kindergarten, when the same teachers used less versus more directive strategies while leading show-and-tell activities (fewer direct questions, more personal stories), anxious solitary children spoke more frequently, used more words, and took longer turns (Evans & Bienert, 1992). Thus, an approach to instruction which appeared to engender trust that the teacher would be supportive of the child's comments improved anxious solitary children's classroom participation. The improvements in anxious solitary children's behavior that were fostered by this approach may also feed back to positively influence teacher perceptions of their academic ability.

School Environment and Adjustment in Anxious Solitary Children

The quality of both pre- and post-transition school environments may influence continuity and change in anxious solitude and psychosocial adjustment during transition periods. In early childhood, anxious toddlers who either had relatively little exposure to peers because they were cared for by their parents or had a great deal of exposure to peers under less-than-optimal conditions because they attended center-based childcare with large numbers of children and staff demonstrated more anxiety at preschool entry than children who attended home-based

childcare in which they were exposed to a small peer group and had a primary childcare provider (Coplan, Findlay, & Schneider, 2010). Thus, anxious toddlers were less anxious after a transition if they had been in a pre-transition environment that provided supportive opportunities for peer interaction.

Later in childhood, post-transition classroom environments – and classroom emotional climate in particular – have been shown to differentially impact anxious solitary children's adjustment. Classroom emotional climate is a composite of ratings of the observed affective tone of the classroom, including interactions between teachers and students and among students. Although classroom emotional climate is thought to be strongly driven by the teacher, it is fundamentally a group-level construct and broader than any specific teacher-child relationship (Pianta, La Paro, & Hamre, 2008). Post-transition classroom emotional climate has been shown to moderate anxious solitary children's risk for peer difficulties. Children with an early childhood history of anxious solitude experienced more teacher-reported peer rejection and depressive symptoms (in girls) in first grade classrooms with relatively unsupportive observed emotional climates (Gazelle, 2006). However, in early adolescence, decrease in observed supportive emotional climate from elementary to middle school did not translate into increased anxious solitude or peer difficulties across this period (Shell et al., 2014). Rather, the collective renegotiation of peer relations and freeing from prior reputation and status at the middle school transition appeared to be more influential and produced decreased anxious solitude and peer difficulties. Taken together, at least during the toddler and early middle childhood period, anxious solitary children appear to be particularly affected by the quality of support they receive in school contexts.

Conclusions and Future Directions

In this chapter we have summarized current empirically-based research on social, emotional, and academic adjustment of anxious solitary children at school. We have emphasized the influence of interactions and relationships with peers and teachers and the broader emotional climate of the classroom on anxious solitary children's development. The research reviewed in this chapter demonstrates increasing emphasis on understanding (i) heterogeneity among anxious solitary children and considering how multiple attributes of the child function as an integrated system, (ii) heterogeneity in the support offered by school environments, (iii) the temporal dynamics involved in the evolution of anxious solitary children's peer relations and psychosocial adjustment over time and how these temporal patterns are shaped by schools, and (iv) the influence of relational processes that occur at school on anxious solitary children's adjustment over time. Although anxious solitary children's development has long been studied at school, the role schools play in influencing child development is now gaining research attention. In the future there is a need for increasing emphasis on the dynamic interaction

between anxious solitary children's strengths and vulnerabilities and the demands and support offered by school environments over time.

Given the common thread of relational difficulties (i.e., poor quality relationships with friends as well as other peers, teachers, and parents) apparent throughout this review, one of the overriding questions to be addressed is, "How can schools offer children a healthy model of how to relate to others?" Experiences of peer exclusion and victimization are not likely to contribute to a healthy model of one's relations with others. Beyond this minimum, further questions follow: "How can children be taught to sympathize and care for classmates?" "How can children be taught to respond to vulnerable classmates in ways that help rather than hinder?" There is a small body of research that indicates that school environments can be tailored to support the formation of positive peer relations and active engagement in classroom activities for anxious solitary children (e.g., Coplan et al., 2010; Evans & Bienert, 1992; Gazelle, 2006), and more research of this type is needed. Such efforts may have the largest impact on anxious solitary children but may well benefit most children. Thus, schools who give special consideration to providing contexts in which their most vulnerable members will thrive are likely to create safer and more inclusive contexts in which all children learn to be active members of their communities.

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Loneliness and Belongingness in the College Years

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When needs for connection to other people and to broader communities are satisfied, people experience well-being, including positive affect, adaptive motivation, and physical and mental health. When needs for connectedness are thwarted, however, negative affective, motivational, and health outcomes result (e.g., Baumeister & Leary, 1995; Maslow, 1943; Ryan & Deci, 2002; Weiss, 1973). In this chapter, we focus on two major affective outcomes of people's social experiences – loneliness and belongingness – and examine the factors that influence feelings of loneliness and belonging in college.

The experience of loneliness has been described as "a sad or aching sense of isolation" (Parkhurst & Hopmeyer, 1999, p. 58) and is thought to result from perceived or actual deficiencies in one's social relationships (e.g., Peplau & Perlman, 1982). Although transient feelings of loneliness may be normative, serious psychological and physical health problems can arise when feelings of loneliness are chronic and severe. Researchers have linked measures of loneliness with a wide range of negative outcomes, including depression (Fontaine et al., 2009), poorer quality sleep (Cacioppo et al., 2002), and poorer immune functioning (Pressman et al., 2005).

The experience of belongingness can be thought of as a positive affective state that involves feelings of comfort and security derived from the perception that one is an integral part of a community, place, organization, or institution (cf., Hagerty, Lynch-Sauer, Patusky, Bouwsema, & Collier, 1992). Feelings of belonging have been found to be related to positive motivational and achievement outcomes in the academic domain (e.g., Walton & Cohen, 2007), in addition to being a protective factor against conduct problems (Loukas, Roalson, & Herrera, 2010), depression (e.g., Sargent, Williams, Hagerty, Lynch-Sauer, & Hoyle, 2002), and suicidal ideation (Van Orden, Cukrowicz, Witte, & Joiner, 2012). Indeed, belongingness is viewed as

such an important factor in people's lives that promoting social integration – a cause of belongingness – has been identified, along with poverty eradication and job creation, as among the three goals of the United Nations Department of Economic and Social Affairs (2007).

In this chapter, drawing on the work of scholars such as Weiss (1973), Shaver and Buhrmester (1983), and Hagerty (Hagerty et al., 1992; 1993), we will offer the hypothesis that although loneliness and belongingness could be thought of as opposite ends of a single continuum, they are nonetheless distinct dimensions of psychological experience and should be studied as equally important and only partially related phenomena. We will propose that people make appraisals of their circumstances that lead to feelings of loneliness and feelings of belonging and that the dimensions used to make these appraisals are fairly distinct. As part of this argument, we will discuss a widespread assessment problem that has hindered progress in previous research, namely that assessments of loneliness and belongingness have contained diverse and confounding item content that overlaps with the hypothesized causes of each type of experience. This assessment limitation has impeded progress in studying feelings of loneliness and feelings of belonging. Our contention is that once measures of each construct are used that eliminate items asking about the causes of these feelings, it will become clear that loneliness and belongingness are distinct experiences with distinct as well as overlapping causes. We will review the available, although still limited, research examining the predictors of loneliness and belongingness in college students using highly focused measures that avoid the problem of overlapping and confounding item content. Our hope is to provide a foundation for future research that examines the connections between different forms of solitude, withdrawal, or isolation and students' feelings of loneliness and belonging. Given our focus in this chapter on the college years, we begin with a discussion of why the college years and the college context may be a particularly significant time and place for studying loneliness and belongingness.

Loneliness and Belonging in the College Context

The college years are a time when individuals are in a transitional period between the connectedness and security that can come from family and one's home community and the need to establish a sense of connectedness and identity in a new environment. Along with this transition comes a number of challenges that youth must negotiate, including finding friends and romantic partners with whom they can share their time and their thoughts, feelings, and aspirations; figuring out what topics, ideas, and goals they are passionate about and building on those interests toward a meaningful career; and finding ways to become contributing members of a larger community. As students negotiate each of these challenges, they develop new skills, competencies, and self-knowledge that will help them as they transition from college to the next, even more independent, stages of their lives. Although

many negotiate these challenges successfully, others struggle to find their niche socially or academically (for discussions of the social, contextual, and developmental features of the college environment, see, for example, Feldman & Newcomb, 1969; Pascarella & Terenzini, 1991; Strayhorn, 2012; Tinto, 1993).

One central feature of the college environment is the relatively unrestricted access to a large number of diverse peers. This access gives youth an opportunity to develop new acquaintanceships, friendships, and romantic relationships. On the other hand, though, many students are also leaving behind the closeness and familiarity that they may have enjoyed within family relationships, friendships, and romantic relationships prior to college. Maintaining existing relationships while developing new relationships formed in college can be a difficult challenge. Indeed, investing time maintaining very close relationships with friends, family, and romantic partners who may live elsewhere could actually detract from the development of new relationships in college, since students will likely have less time to participate in activities and social events with college peers. This could be true even for students who continue to live at home while attending college (according to the National Center for Education Statistics, 2010, approximately 26% of undergraduates in the United States live with parents while attending college).

In addition to providing opportunities to form new personal relationships, the college environment is structured to provide myriad opportunities for students to get involved and find their niche within the larger community. Prospective applicants who take tours of college campuses are likely to hear a student tour guide speak enthusiastically about the dozens or even hundreds of clubs, organizations, and activities the campus offers, and many colleges also provide varsity sports that engage students as fans. Students also have opportunities to explore and develop diverse academic interests and to get involved in research projects with faculty and graduate students. Taken together, these features of the college environment make college an ideal context for studying issues of loneliness and belongingness.

Theoretical Background

Needs theorists posit that human beings have certain fundamental needs that must be fulfilled in order to promote adaptive functioning. Perhaps the most widely known needs theorist is Abraham Maslow, who proposed a hierarchy of human needs (e.g., Maslow, 1943). Maslow viewed the needs for love and belonging as basic needs, not far removed from the even more basic physiological needs and the need for safety. Maslow theorized that the need for connectedness to other people must be satisfied before individuals could concern themselves with satisfying higher-order needs such as needs for esteem and self-actualization. Baumeister and Leary (1995) expanded on Maslow's conceptualization of belongingness needs and presented a wide-ranging review of the consequences of satisfied and thwarted needs for connectedness to others in the domains of emotional

experience (i.e., individuals experience positive affect when needs are satisfied and negative affect when they are thwarted), physical health (i.e., individuals experience more positive health outcomes when needs are satisfied and more negative health outcomes – including earlier mortality – when needs are thwarted), and psychological health (i.e., satisfied needs for connectedness provide a buffer against of psychopathology).

Loneliness

In addition to positing broad-based needs for connectedness to other people, needs theorists have also posited more specific needs for attachment and for social integration. Weiss (1973) argued that the thwarting of these two types of needs would be associated with different forms of loneliness (the loneliness of emotional isolation and the loneliness of social isolation). The idea of two different forms of loneliness has not been adequately tested in empirical research due to the difficulty of assessing the loneliness of emotional isolation and the loneliness of social isolation without including the hypothesized causes of each form of loneliness in the loneliness measure itself (see Weeks & Asher, 2012, for a more in-depth discussion of this issue). Still, one key contribution of Weiss's (1973) social needs perspective is that it introduces the idea of social provisions. According to Weiss, social provisions are the benefits that people derive from relationships and are the key features of relationships that promote emotional well-being. From this perspective, it is not the lack of specific relationships per se that leads to feelings of loneliness, but rather the lack of certain social provisions that are derived from those relationships.

Shaver and Buhrmester (1983) further articulated the idea that social provisions meet needs for attachment and social integration. According to Shaver and Buhrmester, attachment provisions (or what they call "psychological intimacy" provisions) include relationship features such as affection and warmth, unconditional positive regard, opportunity for self-disclosure, opportunity for emotional expression, lack of defensiveness, lack of concern for social presentation, giving and receiving of nurturance, and security and emotional support. Social integration provisions (or what Shaver and Buhrmester call "integrated involvement" provisions) include features such as the opportunity to engage in enjoyable and involving activities and projects, develop social identity and self-definition, be needed for one's skills, obtain social comparison information, have power and influence, obtain conditional positive regard, and receive support for one's beliefs and values. Rather than receiving each type of provision exclusively from dyadic relationships or from group relations, Shaver and Buhrmester argued that groups could to some degree provide psychological intimacy as well as integrated involvement provisions.

A variant within the social needs perspective, cognitive discrepancy perspectives on loneliness (e.g., Cutrona, 1982; Kupersmidt, Sigda, Sedikides, & Voegler, 1999; Peplau & Perlman, 1982) emphasize the role of subjective appraisals in the

experience of loneliness. That is, loneliness is expected to result when individuals experience a discrepancy between *desired* and *perceived* levels of social connectedness. Discrepancies can occur at the quantitative level (e.g., having fewer friends than one would like) or at the qualitative level (e.g., viewing a romantic partner as less emotionally supportive than one would like). According to this view, it is how individuals perceive their social relationships and come to recognize deficits – and not the objectively measurable social deficits themselves – that leads to loneliness.

Belongingness

Scholars from the fields of sociology, political science, community psychology, educational psychology, and nursing have contributed to the literature on belongingness and related constructs such as relatedness, social integration, psychological sense of community, and social capital (for examples, see Durkheim, 1897/1951; McMillan & Chavis, 1986; Osterman, 2000; Putnam, 2000; Ryan & Deci, 2002; Sarason, 1974; Strayhorn, 2012). Here we focus on conceptualizations of belongingness as a psychological/affective experience – a feeling derived from the perception that one is an integral part of a community, place, organization, or institution.

Bonnie Hagerty and her colleagues (e.g., Hagerty, Lynch-Sauer, Patusky, & Bouwsema, 1993; Hagerty et al., 1992) define belongingness as a psychological experience that involves viewing oneself as an integral part of a system (including relationships and organizations) or environment (including natural and cultural environments). Hagerty et al. (1992; 1993) propose that feelings of belongingness have two key components: (i) a sense of valued involvement (the experience of feeling valued, needed, and accepted in the system or environment), and (ii) a sense of fit (the person's perception that his or her characteristics are shared with or are complementary to those present in the system or environment). Their view is that, in order for a person to experience a subjective sense of belonging, perceptions of *fit* and perceptions of *value* must both be present. In addition, Hagerty et al. (1992) argue that feelings of belonging are always experienced with regard to a particular referent context (e.g., a college, workplace, neighborhood, extracurricular organization, or city). An important implication is that individuals can experience very different levels of belongingness across the different contexts that they encounter in their day-to-day lives.

Differentiating Loneliness from Belongingness

The theoretical perspectives reviewed in the previous section suggest that loneliness and belongingness, although both rooted in human needs for connectedness to other people, can be thought of as distinct constructs. Drawing from cognitive discrepancy perspectives on loneliness (e.g., Kupersmidt et al., 1999) and from Hagerty and colleagues' (1992; 1993) conceptualization of belongingness, we propose

here that one major differentiating factor between loneliness and belongingness is the kind of proximal appraisals involved in each psychological experience. For loneliness (see Peplau & Perlman, 1982), the key appraisal is whether one's social relationships are viewed as living up to one's expectations regarding factors such as having a close friend, number of friends, having a romantic partner, and receiving the expected provisions from one's relationships. For belongingness (see Hagerty et al., 1992; 1993), on the other hand, the key appraisals are whether one fits in a given context and also whether one is valued in that context. Relationships are among the many factors that can contribute to fit and value.

The second possible major differentiation between loneliness and belongingness concerns the relative degree of context specificity of each. As Hagerty and colleagues note, feelings of belonging always occur with regard to a specific referent context (e.g., school, work, or neighborhood contexts) and can potentially vary a great deal across the different contexts in which individuals live their day-to-day lives. Feelings of loneliness, although likely to vary from one setting to another, may well be less context specific since loneliness is rooted in broad-based appraisals of satisfaction or dissatisfaction with one's social life as a whole.

Unfortunately, perhaps because of a tendency to implicitly conceptualize loneliness and belongingness as opposite ends of a single continuum, there has been very little research examining the nature of the association between the two constructs, and therefore the specific hypotheses offered here await tests. Bukowski, Hoza, and Boivin (1993) were among the few to measure the constructs separately and simultaneously, but how each construct was assessed could be seen as a limiting factor in the study they reported.

Issues in the Assessment of Loneliness and Belongingness

Certain methodological limitations in previous research on loneliness and belongingness have hindered progress in the understanding of the factors that influence each psychological experience, as well as in evaluating the utility of making a conceptual distinction between the two constructs. Specifically, widely used measures of loneliness and belongingness include diverse item content that focuses on the hypothesized causes of each psychological experience, as well as feelings of loneliness and belonging themselves. This issue leads to interpretational problems when studying the causes of loneliness or belongingness (see Weeks & Asher, 2012, for an in-depth discussion of this issue with regard to loneliness).

Loneliness

There is a well-developed and fairly cohesive body of literature examining the causes, concomitants, and consequences of loneliness for individuals across the lifespan (for reviews, see Ernst & Cacioppo, 1999; Peplau & Perlman, 1982;

Weeks & Asher, 2012). However, the vast majority of this research with children, adolescents, and adults has been conducted with measures of loneliness that include item content asking about the *hypothesized causes* of loneliness as well as the *emotional experience* of loneliness. For example, the UCLA Loneliness Scale (e.g., Russell, 1996), the Illinois Loneliness and Social Dissatisfaction Questionnaire (ILSDQ, e.g., Asher, Hymel, & Renshaw, 1984), the Louvain Loneliness and Aloneness Scale for Children and Adolescents (e.g., Marcoen, Goossens, & Caes, 1987), and the Peer Network and Dyadic Loneliness Scale (Hoza, Bukowski, & Beery, 2000) contain items that ask not only about the emotional experience of loneliness (e.g., "I feel alone at school") but also about whether one has friends (e.g., "I have lots of friends in my class"), the availability of social provisions from relationships (e.g., "How often do you feel that you can find companionship when you want it?"), perceptions of social competence (e.g., "It's easy for me to make new friends at school"), and sociability (e.g., "How often do you feel shy?"). Although existing measures of loneliness have excellent internal reliability and yield scores that are stable over time, difficulties arise when researchers test hypotheses about associations between hypothesized causes of loneliness and feelings of loneliness when the hypothesized causes are built into the measures of loneliness.

Researchers who study loneliness in childhood increasingly recognize this issue. Parker and Asher (1993), in a study examining the unique contributions of peer acceptance, friendship participation, and friendship quality to feelings of loneliness, conducted key analyses with a subset of three "pure" (highly focused) loneliness items (e.g., "I'm lonely at school") from the 16-item ILSDQ to avoid the problem of potential overlap between assessments of loneliness and friendship quality. Other researchers have adopted similar strategies with three- or five-item scales focused specifically on feelings of loneliness (e.g., Gest, Welsh, & Domitrovich, 2005; Kochenderfer-Ladd & Wardrop, 2001; Ladd, Kochenderfer, & Coleman, 1997; Lavallee & Parker, 2009). Taken together, these studies replicate findings from previous research with less-focused measures.

Asher and his colleagues (Asher, Gorman, Guerra, Gabriel, & Weeks, 2013; Asher, Weeks, & McDonald, 2010) have expanded the number of pure loneliness items by asking children, adolescents, and college students about feelings of loneliness in different daily contexts (see Table 16.1 for an example). These expanded highly focused assessments have demonstrated the expected factor structure, have excellent internal reliability ($\alpha \geq .90$), yield scores that are stable over time, and, as will be discussed later, have been found to relate in expected ways to social relationship factors (Asher et al., 2013; Asher et al., 2010).

Belongingness

The literature on belongingness is less cohesive and more disparate, with a wide variety of assessments designed to measure feelings of belonging and other related constructs such as relatedness, psychological sense of community, and

Table 16.1 The Loneliness in Context Questionnaire for College Students (Asher, Weeks, & McDonald, 2010)

Class is a lonely place for me.
I am lonely in the evening.
My place of residence is a lonely place for me.
My free time is a lonely time for me.
I feel sad and alone on weekends.
I am lonely with other people.
I feel sad and alone at social events.
I am lonely during meal times.
I feel sad and alone when I am studying.
Bed time is a lonely time for me.

Note. Participants respond to items on a 5-point scale (1 = *never*, 5 = *always*).

social connectedness (see, for example, Furrer & Skinner, 2003; Lee & Robbins, 1995; Perkins, Florin, Rich, Wandersman, & Chavis, 1990). Many of these assessments contain items that ask about feelings of belonging but also include items asking about perceptions of social acceptance, perceptions of the quality of social relationships, feelings of safety, and perceptions of whether one is respected (e.g., the Psychological Sense of School Membership Scale, Goodenow, 1993; the Sense of Belonging Instrument, Hagerty & Patusky, 1995; the General Belongingness Scale, Malone, Pillow, & Osman, 2012). There are, however, researchers who have used belongingness assessments that focus exclusively on the psychological experience of belonging without including hypothesized causes. Walton and Cohen (2007, 2011) have employed single-item assessments with college students (e.g., "I belong at [name of college]"), and Bollen and Hoyle (1990) developed a six-item Perceived Cohesion Instrument to assess two hypothesized dimensions of perceived cohesion – sense of belonging and feelings of morale. The sense of belonging subscale contains three highly focused items: "I feel a sense of belonging to [referent]," "I feel that I am a member of the [referent] community," and "I see myself as part of the [referent] community." All three items ask about the same referent community, and the three items load on a single factor and have high internal reliability ($\alpha = .94$; Hurtado & Carter, 1997). Bollen and Hoyle's measure of belonging has been used in several recent studies conducted with college students (to be reviewed in a following section).

Recently, Weeks, Asher, and McDonald (2012) have developed highly focused six-item assessments of belongingness for use with children, adolescents, and young adults (see Table 16.2 for the college version of this measure). Evidence from several samples suggests that the measures developed by Weeks et al. (2012) for different age levels have excellent psychometric properties, with all items loading on a single factor, and high internal reliabilities with middle school ($\alpha = .93$), high school ($\alpha = .95$), and college ($\alpha = .91$) samples. These measures have also been shown to

Table 16.2 The College Belongingness Questionnaire (Weeks, Asher, & McDonald, 2012)

I feel like I belong at this school.
It's hard for me to fit in here.*
I feel connected to this school.
I feel welcome at this school.
This is definitely the right school for me.
I'm glad I came to this school.

Note. Participants respond to items on a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*); the item with an asterisk is reverse scored.

relate in meaningful ways to indicators of social relationship adjustment (e.g., friendship participation, friendship quality, romantic relationship participation) and to indicators of students' embeddedness in the school community (e.g., academic engagement, activity participation; Asher & Weeks, 2012).

An attractive feature of the Walton and Cohen (2007), Bollen and Hoyle (1990), and Weeks et al. (2012) measures is that each measure could be easily modified to assess feelings of belonging with regard to different referent contexts by inserting the context label in to each item (e.g., a particular school, organization, or town). This would make it possible to compare various contexts in terms of the sense of belonging they engender and to study people's connections to the various contexts of their lives.

Loneliness and Belongingness in College

In this section of the chapter, we will provide a selective review of research on the predictors of loneliness and belongingness in college students, focusing wherever possible on studies that have employed highly focused measures of each construct. The discussion that follows focuses on two constellations of factors that have been shown to be important for loneliness and belongingness – relationship processes and social-cognitive processes.

Relationship processes

Loneliness. Consistent with the view that social relationships play a key role across the lifespan (e.g., Peplau & Perlman, 1982; Shaver & Buhrmester, 1983; Weiss, 1973), loneliness research with children and adolescents has focused on peer-relationship factors (i.e., peer acceptance/rejection, peer victimization, friendship participation, and friendship quality) as predictors of loneliness. Researchers studying peer relationships in school-aged youth have often been able to collect data from students in an entire class or grade. When virtually all children participate in a study and sociometric measures are used, it becomes possible to more

comprehensively and accurately identify reciprocal friendships, as well as to obtain highly reliable measures of children's social acceptance by peers. Findings from this research indicate that low levels of acceptance by peers, victimization by peers, having fewer friends, and having lower-quality friendships are all associated with greater loneliness (for reviews, see Asher & Paquette, 2003; Bukowski & Verroneau, Chapter 2, this volume; Rotenberg & Hymel, 1999; Weeks & Asher, 2012).

When it comes to investigating these relationship factors as predictors of loneliness among college students, though, researchers face distinct challenges. Which of the many contexts that students are in (e.g., diverse classes, places of residence, organizations, clubs, activities) should be used to learn about students' social relationships? In addition, students may have only a passing acquaintance or no acquaintance at all with the great majority of their fellow students, which makes sociometric assessment difficult. A few researchers have responded to the challenge of obtaining valid assessments of social relationships in college by asking about students' social relationships in a closed system such as sorority or fraternity houses (see Paxton & Moody, 2003; Werner & Crick, 1999); however, researchers have not yet used this approach to study loneliness in college.

Furthermore, there appears to be no published research that uses highly focused assessments of loneliness to examine the predictors of loneliness for college students. Still, interesting issues have been examined in studies with college students, including research on loneliness during the transition to college. For example, Cutrona (1982) examined the contributions of quantitative and qualitative aspects of individuals' social networks in predicting feelings of loneliness across the first year. Her results indicated that features of social networks, including number of friends, frequency of contact with friends, and whether or not one has a romantic partner, were influential factors in understanding college students' feelings of loneliness. She also found that the provisions of social integration, guidance, and reassurance of worth were each associated with lower levels of loneliness for college students. Shaver, Furman, and Buhrmester (1985) built upon Cutrona's (1982) findings, examining the maintenance of pre-college social networks and the development of new social networks at college as predictors of loneliness for first-year university students. They followed students from the summer before the first year through the end of first year, studying both loneliness and satisfaction with social relationships. Shaver et al. (1985) found that pre-college relationships tended to decline in both quantity and quality, whereas new relationships tended to increase in quantity and quality across the first year. Changes in loneliness paralleled changes in social networks, with most students experiencing an increase in loneliness across the transition and through the first semester of the first year before returning close to baseline levels by the end of the first year. Interestingly, even by the end of the first year, a separate measure of satisfaction with newly developed relationships did not reach the level of pre-college relationships, nor did satisfaction with precollege relationships return to their precollege levels.

Although it is important to reemphasize that these studies have employed assessments of loneliness that contain diverse content asking about social relationship factors as well as feelings of loneliness, the studies nonetheless suggest the importance of the development and maintenance of close, high-quality relationships as a key factor in successfully negotiating the college transition. Future research on this topic should replicate these findings using highly focused assessments of loneliness.

Belongingness. A number of researchers have used Bollen and Hoyle's (1990) three-item highly focused measure to examine the connection between relationship processes and feelings of belonging among college students. Their results suggest that connections with peers in the college setting play an important role in promoting feelings of belonging for youth. In a study of college student persistence, Hausmann and colleagues (Hausmann, Schofield, & Woods, 2007; Hausmann, Ye, Schofield, & Woods, 2009) investigated the role of social relationships in promoting students' feelings of belonging across their first year in college. Hausmann et al. (2009) found that participant reports of interactions with peers – including being able to make friends, having friends who share one's values, and having friends who promote intellectual growth – were associated with higher levels of belongingness across the first year.

In another study, Locks, Hurtado, Bowman, and Oseguera (2008) found that the amount of time that students spent socializing with peers per week was predictive of their feelings of belonging in college. Additionally, the researchers found that the link between amount of time spent socializing and feelings of belonging was mediated by students' reports of positive interactions with diverse peers (i.e., how often students engaged in intellectual discussions, shared personal feelings, studied, and socialized with peers from different backgrounds). Unfortunately, since the authors did not assess the degree of positive interaction with peers in general, it is difficult to tell whether it was positive interactions with diverse peers or positive peer interactions per se that most strongly contributed to feelings of belonging in this sample.

In what appears to be the only study using sociometric nomination measures to examine the predictors of belonging among college students, Paxton and Moody (2003) examined the link between social network characteristics and feelings of belonging among members of a university sorority. They found that individuals who were central to the sorority social network and who had crosscutting ties across the network reported higher levels of belonging to the sorority. In addition, individuals who were nominated by many other sorority members as a confidant reported higher levels of belonging to the group, although this factor was less important than network centrality or having crosscutting ties. Interestingly, the number of members of the group students tried to avoid was associated with lower levels of belonging to the sorority as a whole.

In addition to relationships with peers, relationships with faculty have also been examined as potential correlates of feelings of belonging in college. Hausmann and colleagues (Hausmann et al., 2007; Hausmann et al., 2009) found that quality of

faculty–student relationships (e.g., knowing and having positive interactions with faculty outside the classroom, perceiving that faculty are interested in and care about students) was predictive of initial levels of belongingness in college; however, these associations became nonsignificant once peer-relationship factors were taken into account (Hausmann et al., 2009). Furthermore, faculty–student relationships were not predictive of changes in belongingness across the first year (Hausmann et al., 2007).

Researchers also have considered the role of parents in promoting (or detracting from) students' feelings of belonging in college. Although parents are usually not physically present in the day-to-day context of college, they still play a potentially important role in helping their children transition from the more structured, less independent realm of high school into the relatively unstructured and independent atmosphere of college. Available research suggests that parental support does play some role in promoting positive feelings of belonging across the transition to college (Locks et al., 2008; Mounts, 2004), but further research is needed to identify which specific types of support (e.g., financial versus academic versus social) are most important in helping students establish positive feelings of belonging to their university. Further research is also needed to investigate the appropriate balance of parental support and autonomy promotion as students move through their college years.

Social-cognitive processes

Loneliness. There are a number of studies that have examined the social-cognitive correlates of loneliness. However, since relatively few have been with college students, we will make reference in this section to some research conducted with children and adolescents. The few studies that have been conducted with highly focused measures of loneliness will be noted. Consistent with the cognitive discrepancy perspective on loneliness, researchers have examined the discrepancy between relationship expectations and perceptions of relationship *realities* as an important predictor of loneliness. Evidence suggests that discrepancies between desired and actual levels of social connectedness are linked to feelings of loneliness (e.g., Archibald, Bartholomew, & Marx, 1995; Kupersmidt et al., 1999; Russell, Cutrona, McRae, & Gomez, 2012).

Attributional processes and social self-efficacy perceptions have also been examined. People who attribute social failures to internal, stable causes are more likely to experience chronic or severe loneliness than are those who attribute social failures to more external, unstable causes (e.g., Anderson, Horowitz, & French, 1983; Cutrona, 1982; Renshaw & Brown, 1993; Shaver et al., 1985). With regard to social self-efficacy, Shaver et al. (1985) found that students who reported being less skillful in the domains of relationship initiation and self-disclosure also reported higher levels of dissatisfaction with their social networks and higher levels of loneliness across the first year in college.

There is also research on goals and beliefs in relation to loneliness. Jarvinen and Nicholls (1996) found that adolescents who endorsed more prosocial goals (e.g., goals associated with intimacy, nurturance, and being well-liked by others)

were less lonely than those who endorsed goals associated with dominance. They also examined how beliefs about the causes of social success relate to loneliness. Youth who believed that sincerity (i.e., being authentic) was important for peer relationships were less lonely, whereas youth who believed toughness was important for peer relationships were more lonely. In a study using a highly focused measure of loneliness, Lavallee and Parker (2009) found that 11- to 14-year-old students who held inflexible beliefs about friendship (i.e., beliefs that only one particular person can meet friendship needs) also experienced higher levels of loneliness. In a study with college students, also using a highly focused measure, Asher, Weeks, and McDonald (2012) found that various kinds of beliefs about friendship were associated with loneliness. These included, for example, the belief that friends should be exclusive, the belief that conflict is a sign that a friendship is going to fail, the belief that a friend shouldn't be forgiven if they make a mistake, and the belief that friends are replaceable.

The accuracy with which people read positive and negative feedback from others has also been studied. In a study with college students, lonely individuals were more accurate in identifying negative feedback than positive feedback, suggesting that lonely youth may indeed be more attuned to negative information in the social environment (Duck, Pond, & Leatham, 1994).

Finally, there is research on rejection sensitivity – the propensity to defensively expect rejection in social situations. Downey, Lebolt, Rincón, and Freitas (1998) advanced the hypothesis that youths' experiences of past social rejection can lead them to defensively expect, and thus become hypervigilant for, cues signaling rejection. In research on rejection sensitivity with children, the propensity to defensively expect rejection in social situations was linked to higher levels of loneliness both concurrently and over time (London, Downey, Bonica, & Paltin, 2007).

Belongingness. In an elaboration of the rejection-sensitivity model, Mendoza-Denton, Downey, Purdie, Davis, and Pietrzak (2002) have identified a process, referred to as *race-based rejection sensitivity*, linking social identity to academic performance through feelings of belonging. They posit that, based on rejecting experiences that occur as a function of membership in a stigmatized or devalued group (e.g., a minority racial or ethnic group), some individuals come to anxiously expect rejection across different contexts based on their group membership. College students who reported higher levels of race-based rejection sensitivity were found by Mendoza-Denton et al. (2002) to experience lower levels of belonging at their university (assessed with a three-item measure developed for the study), more negative race-based events in their day-to-day lives, and higher levels of alienation and feelings of rejection in response to those events than did students lower in race-based rejection sensitivity. Higher levels of race-based rejection sensitivity were also associated with greater declines in academic achievement over the first few years in college (Mendoza-Denton et al., 2002). Interestingly, preliminary evidence from a small-sample study suggests that friendships with individuals in

the ethnic/racial majority may help to provide a buffer for minority youth against the negative effects of race-based rejection sensitivity. Mendoza-Denton and Page-Gould (2008), using a six-item measure with many highly focused items, found that African American undergraduates who were high in race-based rejection sensitivity tended to report higher levels of belonging to and satisfaction with the university when they had more majority-ethnicity friendships (controlling for number of friends of minority ethnicity).

Recent research by Walton and Cohen (2007, 2011) has focused on understanding the processes through which social identities interact with situational factors to affect achievement. Walton and Cohen (2007) postulated a social-cognitive phenomenon called *belonging uncertainty*, which can occur when members of a stigmatized group (e.g., African Americans in a predominantly European American educational context) question whether they belong in a particular social environment. Belonging uncertainty is the result of a person-context interaction in which an individual whose social identity (e.g., race/ethnicity, gender) could be the basis of negative treatment becomes vigilant to belonging-related cues in situations in which their identity is activated. This vigilance to threat (i.e., to cues that one does not belong) can then inhibit task performance if the identity threat is confirmed and the individual cannot or does not want to cope with the threat (Cohen & Garcia, 2008). The difference between belonging uncertainty and race-based rejection sensitivity is that belonging uncertainty is thought to occur as a function of the situations in which individuals find themselves, whereas race-based rejection sensitivity is thought to be an individual difference factor that leads some individuals to be more likely to experience feelings of belonging uncertainty across contexts.

As part of their interest in the phenomenon of belonging uncertainty, Walton and Cohen (2007, 2011) posited that students from historically underrepresented groups on a predominantly majority-group campus might question whether they belong. To launch a social-cognitive “preemptive strike,” they carried out a brief attributional reframing intervention that encouraged students to attribute feelings of not belonging to unstable causes (i.e., being a first-year college student). A random sample of African American students were told – in materials ostensibly prepared by older students on campus – that it is normal for newly arriving students to feel like they don’t belong on campus but that this feeling would pass with time. Walton and Cohen’s simple but powerful intervention was found to alleviate the negative educational and health effects of belonging uncertainty for African American students both soon after the intervention and at the end of their four years in college.

Emerging Research on Loneliness and Belongingness as Distinct Constructs

In this chapter we have proposed that loneliness and belongingness should be thought of as distinct constructs with both overlapping and distinct causes. We have also described highly focused measures that should make it possible to assess

feelings of loneliness and belonging without including items that assess the causes of loneliness and belongingness. In support of these ideas, we conclude here by briefly describing a recently completed four-year study which used our new measures to learn about the correlates of loneliness and belonging with a large sample of college undergraduates (see Asher & Weeks, 2012).

In this study we found that items assessing loneliness and items assessing belongingness loaded on distinct, though correlated, factors (Asher et al., 2010). In addition, there were distinct predictors of loneliness and belongingness. Specifically, although friendship factors, including having friends and having high-quality friendships, were found to be important for protecting against feelings of loneliness and for promoting feelings of belonging, there was a broader class of factors reflecting Hagerty and colleagues' (1992; 1993) concepts of fit and value that were more strongly associated with feelings of belonging than with feelings of loneliness (Weeks et al., 2012). For example, with regard to fit, being highly academically engaged (i.e., excited and passionate about one's academic work) and being a "big fan" of the university's varsity sports were each associated with higher levels of belongingness but were less strongly associated with loneliness. With regard to value, feeling like one matters at the university was more strongly associated with feelings of belonging than with feelings of loneliness.

Future research should focus on further isolating the specific shared and nonshared causes of loneliness and belongingness, as well as investigating the overlapping and distinct social, psychological, and academic consequences of each type of feeling. The value of making a conceptual distinction between the two constructs will be clear if loneliness and belongingness prove to have unique causes and unique implications for adjustment.

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Single in a Society Preoccupied with Couples

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To me, solitude is so very sweet that I have to remind myself that not everyone experiences it that way. I'm nearing 60 and have always been single. I always will be – by choice. I have created a name for people like me – we are *single at heart*. Single is who we really are. Living single is how we live our most meaningful and authentic lives.

Solitude can be embraced or feared; it can be fulfilling or lonely. Single life is like that, too. I spent much of the first decade or so of my studies of single life pushing back against the presumptions that single people are all miserable and lonely and want nothing more than to become unsingle (DePaulo, 2006, 2011a, 2011b; DePaulo & Morris, 2005). Now it is time to step back and draw the reversible image that is single life (and solitude, too) – look at it one way, through the eyes of someone apprehensive, and it is horrifying; look at it another, from the perspective of one who would embrace it, and it is thrilling. At the heart of the matters of solitude and single life is choice. If you are choosing to spend time alone and if you are choosing to be single (the two are not the same), you are far more likely to be satisfied with your time and your life than if those experiences have been thrust upon you without your consent (Dykstra, 1995).

The context of our choices is important, too. In the early twenty-first century, the United States continues to be a society preoccupied with marriage, weddings, and couplings; I call the over-the-top celebratory attitude associated with these activities “matrimania” (DePaulo, 2006). Those who would choose single life in the United States, then, are at risk for being put on the defensive in a way that people who choose marriage are not. Similarly, our long national tradition of fretting about the decline of community (discussed, e.g., in Klinenberg, 2012) and of caricaturing people who spend a great deal of time alone (Rufus, 2003) casts a shadow on those who would choose solitude. And yet, the demographic face of the nation is changing rapidly and in highly significant ways (DePaulo, 2006). The

number of people who are single is increasing steadily and so is the number of people living alone.

The link between living single and loving solitude is an empirical one that has not yet been fully explored. There are indications that people who stay single may be more introverted than those who marry (Marks, 1996), so perhaps they do especially savor their time alone (see also Zelenski, Sobocko, & Whelan, Chapter 11, this volume). Yet, there is also evidence from a number of national surveys that people who are single are in some ways more connected to siblings, parents, neighbors, and friends than are people who are married (Gerstel & Sarkisian, 2006; Klinenberg, 2012) and that people who marry become less attentive to friends and parents than they were when they were single (Musick & Bumpass, 2012). Therefore, it is also possible that people who are single (uncoupled) prefer to spend more time alone and more time with friends and family than people who are married; what they are doing less of is spending time with a partner. So far, we just don't know.

Many other important questions about being single remain. For instance, there is ambiguity about the relative number of married versus single people living in the United States today, as I will explain in the next section. And while it is known that the number of nuclear family households in the United States has dropped markedly over the past half century, it is not clear how we are instead living today. Are we more often choosing to live alone or to live with people other than a spouse or partner? When people do choose to live alone, are they also choosing to spend more time alone?

Nevertheless, our understandings of what it means to be single and what it means to spend time alone are growing more sophisticated. Many Americans – as well as people in many other parts of the world – still believe that single people are not as happy or healthy or selfless or sociable as people who are coupled and perhaps also that if only they would marry, their emotional and social lives would be so much better (DePaulo, 2011b; Greitemeyer, 2009; Morris, DePaulo, Hertel, & Ritter, 2008). But those prejudicial perceptions are not nearly as damning as they were in the 1950s (Klinenberg, 2012). And there are ways in which single people today are viewed more positively than married people – for example, as less dependent (DePaulo & Morris, 2006).

For decades, our cultural conversations and our academic writings have been dominated by concerns about loneliness and isolation (Wesselmann, Williams, Ren, & Hales, Chapter 13, this volume). Have we become a “lonely crowd”? asked sociologist David Riesman in 1963. Are we “bowling alone”? wondered Robert Putnam at the turn of the twenty-first century (Putnam, 2000). More recently, though, our scholarly perspectives have been shifting. Searches of psychology databases increasingly return articles on solitude and not just loneliness. A book on loneliness by a preeminent social scientist received considerable attention (Cacioppo & Patrick, 2008). A few years later, a book more relevant to the sweetness of solitude, *Quiet: The power of introverts in a world that can't stop talking* (Cain, 2012), made an even bigger splash as it quickly ascended to the *New York Times* bestseller list.

In the following pages, I will explore the many shades of single life in a culture preoccupied with couples. I'll examine recent demographic trends in marital status

and living arrangements in the United States and assess whether people are judged harshly when they appear alone in public. I will also review the evidence on how the experiences of loneliness and solitude differ for people of different marital statuses and different attitudes toward single life.

Are We a Society of Married Couples or a Society of Singles? The Demographics

Of the many questions I have been asked by reporters, my all-time favorite is, “What do you think it is like for married people to live in a society dominated by singles?” She was not referring to cultural dominance, but to the greater number of single than married people in contemporary American society.

The claim that singles rule, numerically, has been made in high-profile places, such as a 2007 *New York Times* article titled “51% of women are now living without spouse” (Roberts, 2007). The *Times* made some decisions about counting that I would not have made. For example, they recorded marital status for people 15 and older; I think a more appropriate age is 18. By the latter standard, unmarried Americans are not the majority.

Still, the broader point the *Times* article made, that the number (and percentage) of unmarried Americans is large and has been growing for decades, is indeed accurate. As of 2011, there were 102 million Americans, 18 and older, who were divorced or widowed or had always been single. That’s 44.1% of the adult population. (The number decreases to 88.4 million if people in cohabiting couples, both same sex and opposite sex, are subtracted.) In 1970, only about 38 million Americans 18 and older were not married or 28% of the population.

There is another way in which married couples truly are in the minority. As of 2011, only about 49% of all households included a married couple (U.S. Census Bureau, 2011). In 1970, the same figure was approximately 70% (U.S. Census Bureau, 2006). Pick an American home at random and walk through the front door – chances are you will not find a married couple to greet you.

Now that singles have marched into the mainstream of American society, at least numerically, does that mean that they are fully integrated into everyday social life? There are many different ways to approach that question, but only a few are represented in the published literature. I’ll review those next.

Is American Social Life Organized around Couples? Inclusion and Exclusion of People Who Are Single

There is a story I hear from other single people with some regularity. Versions of it have cropped up in my email inboxes, in the comments sections of my blog posts, and in informal conversations. The gist is that the single person in question

has been good friends with another person for some time, but the single person starts to become marginalized once the friend becomes seriously coupled. Often, ties are maintained through the wedding, when the single person springs for gifts and sometimes travel expenses, too. Then, nothing. The friend has now entered the *Married Couples Club* and socializes primarily with other couples.

I blog about the topic occasionally, and inevitably married people chime in and object, saying that it is the single person who has excluded their now-coupled friend. It would be possible to conduct a longitudinal study in which groups of friends record their contacts with one another, including reports of who initiated the outings, to see what is really happening when one friend becomes involved in a committed romantic relationship and perhaps marries, while another stays single. That study has not yet been done.

What the empirical literature does offer are (i) studies of how couples' interactions with their friends change as their romantic relationship becomes more serious, but with no record of the relationship status of the friends (Johnson & Leslie, 1982; Milardo, Johnson, & Huston, 1983; Surra, 1985); (ii) cross-sectional research on the number of friends or confidants that people of different life stages or relationship statuses report (Dunbar study, described in Amos, 2010; Kalmijn, 2003); and (iii) a longitudinal study of the time people spend with friends before and after partnering, but again with no data on the relationship status of the friends (Musick & Bumpass, 2012).

In a phenomenon dubbed *dyadic withdrawal*, research indicates that couples spend more time only with each other as their relationship becomes more serious (Milardo et al., 1983; Surra, 1985). Gradually, casual friends and acquaintances are marginalized. Initially, close friends are not completely excluded, but their opinions are valued less than they once were (Johnson & Leslie, 1982). We cannot know from this research whether the friends who were marginalized were mostly single.

Studies of divorced and widowed people suggest that married couples become less important to their social lives than they were when they were married (Milardo, 1987; Morgan, Carter, & Neal, 1997). This research however leaves unanswered the question of whether the previously married people were excluded by couples who prefer to socialize with other couples or whether the newly single people step back from their previous engagements with couples or both.

In 2010, the BBC described the results of research presented at a conference by anthropologist Robin Dunbar in an article titled *Falling in love costs you friends* (Amos, 2010). Adults completed an online survey in which they listed the people they could approach for help at times of crisis. Participants who were in a romantic relationship named four people, plus their partner – singles named 5.8. Dunbar suggested that people who become romantically attached give up two friends (the one their partner replaces plus one other). Because the research was cross-sectional, though, we cannot know for sure whether people who become coupled really do drop an average of two friends.

More compelling than Dunbar's research is a Dutch study based on a representative national sample of nearly 3000 adults. Participants named up to five of their best friends, not counting their spouse or romantic partner (if they had one) or children (Kalmijn, 2003). Results were compared for people at different life stages and relationship statuses, such as single and not dating, dating, living together without children, living together with children, and empty nesters. Kalmijn found that the number of friends, as well as the number of contacts with friends, tended to decrease across the different categories. Singles, for example, reported an average of four close friends, whereas empty nesters reported three. Again, though, the study was cross-sectional.

A study that comes closest to answering the question of whether getting partnered results in spending less time with friends is a 6-year longitudinal study of more than 2700 American adults (Musick & Bumpass, 2012). At the outset, all were under 50, single, and not cohabiting. Those who became partnered over the course of the first 3 years of the study spent less time with their friends (and had less contact with their parents) than those who stayed single.

It is possible that couples are especially attuned to each other at the beginning of their relationship and reconnect with the other people in their lives later on. But the results of the study suggest that this is not what typically occurs. Instead, those who had been partnered for at least 4 years, and up to 6 years, also were less connected to their friends and their parents than those who stayed single. There was no difference in attending to friends and parents between those who were newly partnered and those who had been partnered for at least 4 years. We do not know whether the friends who were marginalized were disproportionately single.

Because single people, at least by some measures, have more friends and confidants than partnered people do, they are not dependent on their friends who got coupled for companionship. They can go out to dinner, movies, sporting events, and all the rest with their other friends. But suppose they do decide to, say, dine alone. Will they be seen as social rejects who cannot find one other person to hang out with, as some of them seem to fear?

Single or Coupled in Public: Who Cares?

One of the first studies I conducted when I set out to learn about single people and their place in society was an elegant and elaborate experiment on perceptions of the solo diner. Suppose you see someone dining alone – what do you think of that person?

I don't know of any statistics on the frequency with which people dine alone. Look around at any full-service restaurant, though, and you will see that the lone diners are the exceptions. I thought that at least one of the reasons for this apparent reticence about going out to dinner on your own was a concern about how other people would see you. Those contemplating dining solo would worry, I presumed,

that other people would see them as losers who *don't have anyone*. Therefore, the first step of my research was to see how people really do view the solo diner. Wendy Morris and Cathy Popp, my colleagues in this enterprise, found an attractive restaurant willing to let us send in our various diners and take pictures.

Methodologically, of course, it is not enough simply to collect judgments of solo diners. We also needed to see how the same people would be perceived when they were dining with someone else. We also asked whether perceptions would be different if the same people dined with someone of the other or same sex. What if they were one person in a group of four – two men and two women? Would it matter if the diners were younger (20-something) or somewhat older (40-something)?

We began by taking pictures of four 20-somethings (two men and two women) and four 40-somethings (again, two men and two women) sitting in a booth. Then, in addition to using those photos of the foursomes just as they were, we photoshopped the pictures so that each person appeared to be dining alone or with a person of the other sex or with a person of the same sex. It was important to use the same photo each time, so that the facial expression and posture of the person was exactly the same regardless of whether they were pictured as dining alone or with one or more other people. We then brought our photos to a shopping mall and asked hundreds of adults to look at a designated person in a picture and tell us why that person went out to dinner that evening. If the picture was of a person dining solo, we asked them why they thought the person went out to dinner alone.

We coded the responses and analyzed them. We never published our findings. Journals do not like null effects and that's all we found. What the shoppers thought of the solo diners was no different than what they thought of the same diners when they appeared to be out with one other person or several other people. It didn't matter if the diner was male or female or younger or older, and it didn't matter whether the person the diner was with (when shown with one other person) was the same sex or the other sex. That's not to say that the solo diners were never scoffed at. They were. But in equal measure, so were the people who were shown dining with someone else.

About the solo diners, some people made remarks such as "He is lonely," "Doesn't have many friends," and "She looks depressed." But when evaluating pictures of a man and a woman dining together, people were equally judgmental. For example, they made comments such as:

- They went to dinner "to have a talk because their relationship needs some mending."
- "She is upset."
- "He thought he liked her."
- They wanted to "get away from the children."
- She went out to dinner with him "out of obligation – she's married to him."

Others offered kind words about the pairs of men and women having dinner together. For example, they said that the man was out to “dinner with his wife for fun” or that the two are having a “fine, quiet conversation.” Others said that “they are very close” or that “they enjoy spending time together.”

Yet equally as often, participants had nonjudgmental or positive things to say about the solo diners. For example:

- “Enjoying a few good peaceful moments.”
- “She just wanted to eat by herself.”
- “Traveling.”
- “He seems to be enjoying his dinner.”
- “Wanted time to ponder.”
- And my favorite: “He is secure.”

We never did do the study in which we asked people how they *thought* they would be judged, depending on whether they were dining alone or with one or more other people. However, Gilovich and Savitsky (1999) have documented an important phenomenon that may be relevant – “people’s tendency to overestimate the extent to which their behavior and appearance are noticed and evaluated by others” (p. 165). They call it the “spotlight effect,” after the scene from the movie *The lonely guy* in which Steve Martin walks into a restaurant alone and a spotlight follows him as he is led to his table. So perhaps what other people think of solo diners, when not prompted to evaluate a photo, is nothing at all – they don’t even notice them.

Living Alone or Living Together: What Are Twenty-First-Century Americans Choosing?

Since the mid-twentieth century, single-family detached houses have dominated the housing market (Hayden, 2002). The homes were envisioned as havens for mom, dad, and the kids. Nuclear families, though, are no longer the prevailing household form. So how are we living now?

In his book *Going solo: The extraordinary rise and surprising appeal of living alone*, sociologist Eric Klinenberg (2012) documents the dramatic increase in solo living in the United States. In 1950, four million Americans lived alone, accounting for 9% of all households; as of 2011, 33 million Americans are living solo, amounting to 28% of all households (U.S. Census Bureau, 2011). As striking as those numbers are, the United States is hardly at the forefront of this major social change. Countries with even higher percentages of single-person households include Denmark, Finland, Norway, and Sweden, accounting for about 40–45% of all households.

Does the increase in the number of people living alone mean that the people of the United States – and other countries evidencing the same trend – are at

risk for growing isolation and loneliness? Klinenberg (2012) acknowledges that there is a potential for dire outcomes, especially among those with the fewest resources of wealth or well-being. More often, though, among the urban solo dwellers who were the focus of his research, their story was about connection and social participation rather than withdrawal. Urban dwellers who live alone have a number of important options for maintaining their interpersonal and civic ties. First, they can walk out the door and find their way to cultural events, political events, restaurants, shops, and bookstores. Second, even without ever leaving home, they can stay in touch with others with Internet connections and social media.

At the end of his book-length review of the relevant research, Klinenberg (2012) offers these conclusions as to what the growth of solo dwellers means for individuals and society:

...young and middle-age singletons have helped to revitalize the public life of cities, because they are more likely than those who live with others to spend time with friends and neighbors, to frequent bars, cafes, and restaurants, and to participate in informal social activities as well as civic groups...cultural acceptance of living alone has helped to liberate women from bad marriages and oppressive families...living alone has given people a way to achieve restorative solitude as well as the freedom to engage in intensely social experiences. Surprisingly, it has given people the personal time and space that we sometimes need to make deep and meaningful social connections – whether with another person, a community, a cause, or our selves (pp. 230–231).

Alongside the trend toward living alone is another, very different pattern – the growth in people living together with people other than a spouse or partner. In 2010, 30.1% of all American adults – more than 69 million people – lived in shared housing. That was 18.7% of all households. What is proliferating is a variety of ways of living, and what is shrinking is the number of people living in the way so often regarded as *traditional* – in a nuclear family.

The rise of solo living is linked to economic factors, as it is typically more expensive for a person to own or rent their own place than to share the costs of housing. People who live alone are those who can afford to do so. (Census Bureau statistics on types of households do not include group facilities such as nursing homes or prisons.) On the flip side, the recent growth in sharing housing has arisen in part because of the economic recession that dates officially from December 2007 to June 2009 (Mykyta & Macartney, 2012). When Census Bureau demographers studied trends between 2007 and 2010, they found that while the adult population had grown by 2.9%, those sharing housing with people other than a spouse or partner grew by 11.1% (Mykyta & Macartney, 2012).

Yet it does not appear to be economic factors alone that motivate many people to live with friends, siblings, parents, adult children, and other relatives. Home sharing is often part of a larger movement toward *living in community*, which

includes, for example, the creation of cohousing communities and ecovillages, and, more informally, simply committing to making existing neighborhoods more neighborly (Living in Community Network, 2012; Manzella, 2010). The Living in Community Network explains that their vision is to “create sustainable communities where we can live in a mutually supportive environment with others of like mind and shared values that enrich our lives through friendship, life-long learning, and civic engagement.”

Our choice of living situations is perhaps the most fundamental way in which we attempt to regulate the mix of time we spend alone versus with other people. The ideal ratio of time alone to time with others varies greatly from person to person. People who live alone may have more options to spend more time alone, whereas those who live with others may have more access to easy sociability. People who live alone in cities can walk out the door and see other people on the streets, but people who share a house can walk out their bedroom doors and see other people in the hallways, kitchen, and living room.

In cohousing, a concept brought from Denmark to the United States in the early 1990s by architect Charles Durrett (Durrett, 2009; McCamant & Durrett, 2011), a group of people come together to create a cluster of housing designed to foster community. Residences typically face an open, green space inaccessible to cars that is a safe place for kids to play and an inviting place for neighbors to chat. Each person or set of persons owns or rents their own living space; cohousing is not an old-style commune. Yet there are communal aspects. For example, cohousing communities include a common house in which community members share meals, typically a few times a week. Individual households have their own kitchens, so members can prepare their own meals when they are not dining in the common house. Cohousing members generate their own income at jobs that are not part of the cohousing community. They are not making hammocks and tofu to sell in order to generate money for the community as a whole, as do the members of the Twin Oaks commune (based roughly on B. F. Skinner’s *Walden two* (Skinner, 1948 / 1976)). Cohousing communities do, though, try to maintain a nonhierarchical structure in which everyone shares in decision-making and helps to maintain the common grounds.

The Census Bureau definitions of types of households do not fully capture the psychology of different living situations. The person who lives alone in a single-family detached dwelling in a sprawling suburb and the person who owns a home of their own in a cohousing community are both counted as living in one-person households. Yet the two have very different experiences of community and probably of solitude, too.

The various ways that we live comprise one of the most understudied and underappreciated components of solitude. How we achieve or avoid solitude and how we experience it have a lot to do with the living arrangements of our lives.

The Experience of Loneliness: Does Marrying Make You Less Vulnerable?

Review articles sometimes claim that marriage is linked to lower levels of loneliness (e.g., Cacioppo & Hawkley, 2005). Results reported in the original sources cited in those reviews, though (e.g., de Jong Gierveld, 1987; Tornstam, 1992), are not so persuasive. The data are cross-sectional, and all categories of unmarried people (always single, divorced, and widowed) are compared to the currently married. If, for example, the previously married are lonelier than the people who had always been single, then the risk factor for loneliness may be getting married and then unmarried, rather than staying single.

Even studies in which the previously married and the always single are lumped together and compared to the currently married do not always provide compelling evidence for the claim that marriage is associated with less loneliness. In research by Hawkey and her colleagues (2008), for example, the currently married did not differ overall from the currently unmarried. Only if just a subset of the married people was included – those who considered their spouse to be a confidant – did the married people report less loneliness than the unmarried. (For a more detailed discussion of cross-sectional studies of marital status and loneliness, see DePaulo, 2011a.)

Longitudinal studies of changes in loneliness as adults transition from being single to married would be particularly relevant to the question of the implications of getting married for loneliness. So far as I know, no such study exists. However, there is longitudinal research on older people who become widowed, stay married, or stay single over time. For example, in 1992, more than 3800 Dutch adults ranging in age from 55 to 84 years were asked about their experiences of loneliness in a face-to-face interview. Follow-up interviews were conducted 1, 3, and then 7 years later (Dykstra, van Tilburg, & de Jong Gierveld, 2005). On average, the participants became lonelier with age. The greatest increases in loneliness over time were reported by those who had become widowed. People who remained partnered described *larger* increments in loneliness than those who stayed single. However, not all of the Dutch elders became lonelier as they aged. Those whose social networks had expanded became less lonely, regardless of marital status. In a smaller cross-sectional study of Dutch seniors between 65 and 75 years old, Dykstra (1995) also found that loneliness was linked not to being single but to having little support from friends.

The Dykstra (1995) study included important measures missing from other research on marital status and loneliness – assessments of participants' attitudes toward single and married life. The older people without a partner who valued single life for the opportunities it offers for autonomy and personal development were unlikely to be lonely. In contrast, those single seniors who believed that life is empty or incomplete without a partner were more often lonely.

The Experience of Spending Time Alone among the *Single at Heart*

Research in which people are asked to report on their feelings of loneliness does not directly address the question of how time spent alone is experienced. People can feel lonely regardless of their marital or relationship status and regardless of whether they are currently in the presence of other people or even interacting with others. A positive experience of solitude is not just an absence of loneliness (Averill & Sundararajan, Chapter 6, this volume; Korpela & Staats, Chapter 20, this volume). People who love their solitude might embrace their time alone. To them, solitude may feel more like a need than a mere preference (see Averill & Sundararajan, Chapter 6, this volume; Korpela & Staats, Chapter 20, this volume).

Is there any evidence, though, that people who say that they like spending time alone are really savoring the experience and not just avoiding other people? Are they running toward solitude or away from other people? In a correlational study, Leary and his colleagues (Leary, Herbst, & McCrary, 2003) asked college students how often they participated in various activities on their own and how much they enjoyed them. The students also completed a battery of scales measuring interpersonal orientation (such as extraversion, affiliation, and sociability) and orientation toward solitude (such as a preference for doing things alone and a desire for peaceful aloneness). They found that people who engaged in activities on their own and enjoyed them were drawn to solitude in a positive way more than they were simply uninterested in spending time with other people.

If this is not the first psychology article you have ever read, you know what sentence comes next: more research is needed. The direction I wanted to take the research was to investigate the experience of solitude among people who are and are not *single at heart*. I'm just beginning to develop and validate the concept of single at heart, so I can offer only preliminary data. I posted an online survey titled *Are you single at heart?* and analyzed results from the first 1200 respondents. The sample was not a representative one; participants learned about the survey from my web site, blogs, and Facebook.

Participants indicated their single-at-heart status by reading the description in the following text and placing themselves into one of four categories:

This quiz is a first step toward identifying people who are single at heart. If you are single at heart, single life suits you. You are not single because you have “issues” or just haven’t found a partner yet. Instead, living single is a way for you to lead your most meaningful and authentic life. Even people who are not single may be single at heart. Do you think you are single at heart?

The four response options were (i) yes; (ii) in more than a few ways, yes, but not all; (iii) maybe in a few ways, but mostly not; and (iv) no. In the survey, participants also answered more than a dozen questions about topics such as their preferences

for making decisions on their own versus with a partner, for attending events on their own versus with other people, and the importance to them of work that is meaningful. Only in response to one question, though, did more than 90% of the people in both single-at-heart categories (mostly single at heart and yes, single at heart) endorse the same response. That was the question about solitude.

The wording was: “*When you think about spending time alone, what thought comes to mind first?*” Response alternatives were “Ah, sweet solitude” and “Oh, no, I might be lonely!” The percentages in each category choosing “sweet solitude” were 99% among the “Yes, single at heart”; 95% among the “Mostly single at heart”; 76% among the “Mostly not single at heart”; and 56% among the “No, not single at heart.”

Participants were also invited to explain, in their own words, why they thought that they were or were not single at heart. Again and again, those who classified themselves as definitely single at heart wrote about the importance of having time alone. Some said they like it and enjoy it; others insisted that they need it. Some explained why solitude was important to them, noting, for example, that they felt most centered or most authentic when alone or that they savored the peacefulness of solitude (see also Long & Averill, 2003; Long, Seburn, Averill, & More, 2003; Pedersen, 1999).

Conclusions

What does it mean to be single in a society preoccupied with coupling? Depending on how you count, being single may or may not be normative, but it is certainly increasingly commonplace, not only in the United States but many other Western societies. Stereotypes of singles still persist, but they are less harsh than they once were. When myths about single people are compared to the realities, the myths do not fare so well. For example, there is little evidence that marrying transforms lonely single people into loneliness-free couples.

In fact, single people are in some ways more connected to friends, neighbors, siblings, and parents than are people who are married. People who become coupled spend less time with friends than they did when they were single, but it is not yet clear whether they are disproportionately marginalizing their friends who are single.

In a society in which weddings and couplings and marriage are so celebrated and so hyped, it might be understandable if people were reluctant to go to restaurants and other public venues on their own. Wouldn’t they be stigmatized as losers who cannot manage to find any companionship? The one systematic study of the matter found no evidence to buttress such fears. Adults are judged no more harshly when they are alone in a restaurant than when they are with one or more other people.

Preliminary evidence suggests that people who are single at heart are particularly likely to seek and savor time alone. One way they can find more time to be alone is to live alone. There has been a remarkable rise in solo living over the past decades. In recent years, there has also been an uptick in the number of people sharing a home with people other than a spouse or partner.

I think that the complexities of the trends on marital status, living arrangements, and attitudes toward time alone point to the importance of choice. More so than at any time in recent history, many Americans can choose whether to stay single or get married, whether to live alone or with other people, and whether to spend a lot of time alone. Conventions and traditions still look more kindly upon the coupled and the sociable than the singles and the solitude seekers, so the cultural context is more welcoming to the former. Slowly, though, attitudes seem to be changing.

The study of solitude, especially as experienced by single people in societies preoccupied with couples, has much potential. There is much more to learn about some of the most fundamental questions. For example, what are the implications of spending time alone or of living single for those who have chosen those experiences relative to those who have not? How do living arrangements facilitate access to an optimal mix of time alone and time with other people? Are there really people who are *single at heart* (validation studies are needed), and if so, do they savor their time alone more than people who are not single at heart?

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Loneliness and Internet Use

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At any given moment, hundreds of millions of people from all around the world are surfing the Internet, partaking in the seemingly endless digital activities which cover virtually every aspect of life, including work, study, leisure, and social interaction. The social components of the Internet include an endless variety of services and web sites that seem to cover every social need. Since 2006, commensurate with their increasing diffusion, social networks have become extremely influential in the social lives of many individuals (Boyd, 2006). People rely on such networks to build and maintain their social contacts. This has led to the question of whether this new opportunity to be in social contact around the clock has enhanced people's well-being. This is an important question, given the evidence that the epidemic disease of modern life is loneliness (Killeen, 1998).

This large question can be broken down into many small ones. For example, are the *friends* people make on Facebook *real* friends? Do the consequences of online social interaction resemble the situation described by Peplau and Perlman (1982), who suggest that loneliness may be experienced even when an individual is surrounded by others? Do the social comparisons encouraged by the online social networks create frustration and increase loneliness, since they could lead people to feel significant discrepancies between desired and actual relationships (Peplau & Perlman)? According to Sermat (1980), loneliness generates an inertia of its own, as lonely people tend to increase their own feelings of loneliness. Their fear of rejection causes them to refrain from initiating interaction with others, and so their isolation grows. If, however, the price of being rejected were to lessen, the lonely individual might be willing to assume the risks involved in taking part in an interaction. The protected online environment provides such an opportunity. Here, individuals may choose to remain unidentified and so any rejection is far

less personal. Moreover, these feelings of security may be increased further by the fact that this anonymous interaction is taking place in a safe environment of the surfer's choosing.

Rook (1984) suggested that one of the main sources for loneliness is a lack of social partners for the activities desired by the individual. This is particularly the case with activities that provide the individual with a sense of social integration and emotional intimacy, which happen to be the activities for which finding companions can be particularly challenging. The Internet, with its hundreds of millions of users and countless options of groups formed around an endless variety of topics, may well be able to help locate a companion who shares one's activity preferences and thereby help to reduce loneliness.

In this chapter, we focus on the implications of the Internet for loneliness. The chapter opens with an exploration of the major exceptional features of the Internet and how they create a unique psychological environment that may either maximize or minimize loneliness. We proceed to examine the general impact of the Internet on our social lives. The next section examines several individual differences that may moderate the effects of the Internet on loneliness, including extroversion versus introversion, physical disability, advancing age, and membership of stigmatized minority groups. We then move on to assess the link between addiction and loneliness, including the effect of Internet use on lonely individuals. From here we move on to examine how individuals may transform their online social skills to their offline interactions. The chapter concludes by describing our recommendations for future directions in this area.

Psychological Properties of the Internet

The Internet has several important interrelated features that together create a psychological environment that is very different from the offline world (Amichai-Hamburger, 2005, 2007, 2012). Among the most prominent of these features is:

Online anonymity. This refers to the perception of the user that he or she can surf the Internet without disclosing information that might lead other surfers to identify him or her. Anonymity, along with the absence of social cues, often leads speedily to greater disinhibition and more disclosure than is common in offline interactions.

Control of physical appearance. Related to online anonymity is the fact that Internet technologies allow surfers to display differing degrees of physical exposure, as they choose. This takes all manner of forms, for example, some people hide their physical appearance by displaying a cartoon character or an image of their pet, and others show themselves as they were as babies or display a much younger slimmer, more attractive self. For many people, this is a very important and liberating aspect of the Internet experience.

Greater control over interactions. Internet surfing allows people to meet the world from a location of their choosing, which many perceive as their own territory; this may well be from their home, their office, or any other place they feel comfortable. This may well provide a strong sense of security which leads to feelings of confidence. Moreover, many of the interactive technologies, especially the text-based ones like email and chat, are asynchronous, allowing the user to see the message before it is sent and reshape it as many times as is desired, until the user is satisfied with it. This too provides a sense of control over the interaction. Of course, some users fail to take advantage of this feature when, spurred by the disinhibitory properties of online interaction, they react impulsively when provoked.

Finding similar others. On the Internet, many thousands of different groups exist, and it is fairly easy to find a group of like-minded others. People who have a relatively atypical interest or minority opinion on some issue can find soul mates online much more easily than offline.

Accessibility anytime and anywhere. Today people can enter cyberspace using, for example, a portable computer or a smartphone, with the result that the Internet and anyone they contact on it can accompany them wherever they are. This has created a major change in the way people perceive the balance between their offline and online lives. For example, for many people the offline friends or group with whom they were in contact on weekly or monthly basis was much more prominent in their lives and identity than the groups with which they interacted online. Today, since they *carry their online companions with them* during most of their waking hours, it is this online group that is likely to receive preeminence over their offline contacts and become very important to surfers' identities and their self-esteem. This is the reason that in order to ensure the survival of offline groups, they must have an online existence.

Fun. The Internet is often entertaining and exciting. The fierce competition among web sites assures that the surfer's experience will continue to be increasingly enjoyable and significant.

Thus, the Internet provides a unique setting which has no equivalent in the offline traditional world. It is a highly protected, enjoyable environment, which is constantly available and in which like-minded persons on any topic anywhere in the world may be located at ease.

The General Impact of the Internet on Loneliness

From its early days, the Internet has been perceived as a medium that harms people socially. For example, data from the Internet Usage Survey (Brenner, 1997) showed that most Internet users reported that the Internet interfered with other major life activities. Many people also reported Internet addictions. In addition, early research

suggested that the use of the Internet has been found to result in social isolation (Stoll, 1995; Turkle, 1996). A comprehensive longitudinal study examined the effects of the Internet on social involvement and psychological well-being (Kraut et al., 1998). Its findings indicated that greater use of the Internet is related to increased depression and loneliness and a decrease in the number of social contacts. The authors named their study "Internet paradox" to demonstrate that what was supposed to help build and maintain social contact is actually doing the opposite. Valkenburg and Peter (2008) later warned of the serious implications of Internet surfing for adolescents' social competence. They suggested that adolescents may identify more with their online identities than their true/real identities and consequently become less competent socially in offline contexts. Based on analyses of large-scale data collected from adult US residents in 2004 and 2005, Stepanikova, Nie, and He (2010) reported that time spent browsing the web was positively related to loneliness and negatively related to life satisfaction.

Conversely, other scholars have delineated a positive impact of Internet use on individuals' well-being. For example, Sproull and Faraj (1995) emphasized the positive social role the Internet plays in providing communication channels, which in turn link people with common interests to like-minded others, thus building up support and a sense of community. Whitty (2008) suggested that the Internet provides endless social opportunities which enable people who lack social skills to exercise them and improve them. This, she pointed out, can be particularly effective in the romantic sphere. In order to assess the influence of Internet use on social interactions in separate life domains (e.g., with family members, friends, colleagues), Amichai-Hamburger and Hayat (2011) examined data from the World Internet Project (WIP), a major international research project, that studies the influence of different media on various aspects of life. Each participating country collects data with an identical questionnaire in a representative sample. The authors analyzed reports from 13 countries, comprising 22,002 respondents ranging in age from 12 to 84 years. Their analysis confirmed that Internet usage can actually enhance the social lives of its users. For example, it was found to enhance contacts with family, friends, and people in the same profession.

Clouding the picture is the possibility that the Internet can actually increase the social contacts of lonely people without alleviating their loneliness. This intriguing possibility emerged in the results of a large-scale longitudinal study with a representative sample of 2000 Norwegian adolescents and adults, who participated in data collection once a year for 3 years (Brandtzaeg, 2012). Results indicated that participants who used social networking sites had more face-to-face social contacts and a greater number of acquaintances than nonusers. However, users of social networking sites, especially males, indicated that they were lonelier than nonusers.

Leung (2002) noted that lonely people may be less willing or able to take the face-to-face social risks that might lead to the alleviation of their lonely feelings and their online communications may in fact facilitate in the alleviation of loneliness. In support of this notion, Morahan-Martin and Schumacher (2003) found that loners

use the Internet more than non-loners (see also Amichai-Hamburger & Ben-Artzi, 2003). They preferred online interaction to interaction face-to-face and said that in the online context they feel more open, intimate, and friendlier. Such people tend to get online especially when they feel lonely.

Similarly, Whitty and McLaughlin (2007) found that lonely people are more likely to use the Internet for entertainment. This, the authors believe, serves as a good illustration of how the Internet fails to solve the social needs of the loner. Hu (2009) reported that individuals suffering from social inhibitions (i.e., introversion, shyness, low self-esteem) felt lonelier after interacting on the Internet through chat. This was despite the fact that they perceived the Internet as less threatening and an easier way through which to build social contact than the traditional methods used offline. Hu (2009) concludes that computer-mediated communication contributes to the increase of mood loneliness and consequently is a less effective way to alleviate loneliness than face-to-face communication.

Kim, LaRose, and Peng (2009) pointed out that lonely people use the Internet in ways that would appear to be to their benefit but in fact create a negative loop since their obsessive-compulsive use of the Internet as a solution to their loneliness ultimately harms different life spheres such as work, school, or significant relationships and leads them actually to further distance themselves from the offline world. Stepanikova (2010) points out that it is unclear as to whether loneliness and life satisfaction cause people to change their Internet usage or whether the opposite is true and it is the Internet use that leads to changes in the degrees of loneliness and life satisfaction experienced.

In any case, it is necessary to understand the effects of different Internet components in order to gain a more fine-grained understanding of the impact of the Internet on behavior and psychological well-being. Hamburger and Ben-Artzi (2000) pointed out that Internet research should discriminate between different types of applications and surfers. As Amichai-Hamburger (2002) further explained, although millions of people around the world communicate with one another every day, surfing is an individual experience, and therefore, any attempt to understand behavior on the Internet must involve an examination of the personality of the surfer and the specific Internet use. In the following text we examine the connection between loneliness and Internet use as a function of several types of individual differences among surfers.

Individual Differences as Moderators of the Impact of the Net

Extroversion versus introversion

As mentioned earlier, Kraut et al. (1998) initially argued that the general impact of the Internet is negative. However, in a later paper Kraut and his colleagues (Kraut et al., 2002) suggested that the picture is actually more complex and that, in fact,

extroverts actually benefit from their use of the Internet. The authors explained their results in terms of *the rich get richer* phenomenon. They explained that people who have better social skills and many friends offline will exploit their highly developed social skills and make more friends on the Internet. In contrast, people who are less socially adept and have a poorer social life offline are likely to gain less from their Internet interactions. According to this way of thinking, the Internet is yet another environment in which extroverts demonstrate their dominance over introverts (for further discussion see Zelenski, Sobocko, & Whelan, Chapter 11, this volume).

Hamburger and Ben-Artzi (2000) however believe that introverts may be empowered by and benefit from the Internet. They argue that the protective environment provided by the Internet can enable such people to achieve social competence online. These outcomes were initially observed in research conducted with introverted and neurotic women, who were found to be much more socially competent and active online than they were offline (Hamburger & Ben-Artzi, 2000). The authors argue that this compensatory effect may be due to the general higher self-awareness among women and their ability to receive social support. It was suggested that as Internet use becomes more widespread, introverted males will also come to realize that the Internet has the potential to respond to their social needs. In addition, they may recognize that the protected Internet environment allows them to express themselves freely. This hypothesis was confirmed by other studies (e.g., Amichai-Hamburger, Wainapel, & Fox, 2002; Maldonado, Mora, Garcia, & Edipo, 2001). This approach has been defined as *the poor get richer*; in other words, that those who are poor socially offline become richer socially online.

Amichai-Hamburger, Kaplan, and Dorpatcheon (2008) considered whether *the poor get richer theory* and *the rich get richer theory* are necessarily at odds with one another or whether they are, at least partly, complementary theories. They studied this question in the context of online social networks. These have been defined as web-based services that (i) enable people to create their profile within an organized framework, (ii) generate a list of other users with whom they share a connection, and (iii) within the system users may view their own list of connections and those made by others within the system (Boyd & Ellison, 2007). They found that extroverted participants who used online social networks made greater use of the Internet as a social tool (i.e., for social interaction such as in chat forums and games) as compared to introverts who used online social networking. However, introverts who did not use online social networks were found to use the social platforms on the Internet more than extroverts who did not use online social networks. They suggested that when surfers' principal behavior on the Internet is using social networks, they are, in essence, duplicating their offline social network on the Internet. In other words, their pattern of social interaction offline is transferred to their behavior online. In this way, extroverts retain their offline social dominance when they are online. This is consistent with the *rich get richer* theory (Kraut et al., 2002). Conversely, among introverts who do not use social networks, behavior on the Internet will tend to be more socially explorative; free of any offline persona,

they can actually recreate themselves by initiating and maintaining new social interactions. Such people are therefore more likely to use the Internet as a compensative environment, and this, in turn, may lead them to become more socially dominant on the Internet as compared with extroverts who are not users of social networks. This is consistent with the *poor get richer* theory (Hamburger & Ben-Artzi, 2000).

It would seem, then, that two different orientations have developed online. The first is one in which people enjoy a high degree of anonymity. Being anonymous helps them to recreate themselves. They are free to explore different aspects of their identity without the fear of rejection from others. This may be observed in fantasy games, anonymous chats, and blogs. Conversely, there is the phenomenon of people allowing themselves to be identified, often to a very high degree. Such people do not aim to recreate themselves online, but, rather, to duplicate their offline identity online. This is best demonstrated by behavior on social networks.

As discussed previously, it seems that many people with social inhibitions have found creative ways to compensate for their difficulties, even in social networks. In addition, the Internet contains many outlets for self-expression that may not seem as intrusive as social networks, including, for example, Wikipedia, blogs, and fantasy games.

Wikipedia members author many of the articles displayed on the site and authorize and edit contributions by others. Wikipedia members are nameless, are faceless, and receive no official recognition. An examination of the difference in personality profiles between the Wikipedia members and surfers who are not Wikipedia members revealed that introverted women were more likely to be Wikipedia members as compared with extroverted women (Amichai-Hamburger et al., 2008). This may be indicative of the fact that women seem more likely to use the Internet as a compensative tool. In other words, women who are introverted and feel a need to express themselves may experience difficulties doing so in the offline world but may feel be able to do so on the Internet. This is in line with the Hamburger and Ben-Artzi's (2000) findings. It may indicate that introverted women were again the first to discover the potential of the social Internet.

Chat is another environment that is usually anonymous. Anolli, Villani, and Riva (2005) found that anonymous chat users have a tendency to be closed and rather introverted in their offline interactions. They find the chat environment to be an appropriate forum in which people *open up* and develop personal relationships. The *fantasy world* is another environment to which introverts may feel a special connection. In this context, a fantasy world refers to an online world containing a total environment which enables surfers to duplicate a whole range of offline activities, including, for example, shopping, praying, and visiting museums. Dunn and Guadagno (2012) studied a video game in which participants, before entering a game session, designed their avatars. They found that introverts tended to build more attractive avatars than did extroverts. This is in accordance with the general prediction that introverts will use the anonymous game environment to

compensate for their tendency to withdraw from social interaction in offline contexts. We suggest that future studies in this area examine other means of compensation employed by introverts in online contexts (for further discussion see Ducheneaut & Yee, Chapter 29, this volume).

With regard to Internet environments where the surfer is identified, such as is in the social network, the material discussed earlier suggests that one may assume that the introvert will be socially inferior to the extrovert. In essence, it has been found that extroverts have more social interaction in social networks than introverts (Amichai-Hamburger & Vinitzky, 2010). It appears that introverts who use social networks do in fact transfer their patterns of introverted behavior from the offline into the online environment. This is reflected in the size of their online social networks, which tends to be smaller than that of the extroverts. Interestingly though, despite or maybe because Facebook is an environment where they are at a disadvantage, since it is an identified site, introverts invest more effort than extroverts in building and designing their personal profiles. Introverts, for example, place more personal information on their Facebook profiles than extroverts. This may be explained by the fact that extroverts feel confident in their offline social skills and relationships and thus feel less of a need to promote themselves to their *friends*, whereas introverts tend to promote a more positive image by investing in their Facebook profile, something that does not actually involve synchronous interaction with people they are identified to. This demonstrates that even in their identified online social networks, introverts may attempt to find a little corner to try and improve their social status. To summarize, it seems that in general introverts use the anonymous net environment to build their social worlds. They also do their best to compensate themselves in areas where they do not have to have synchronous interaction such as investing in their Facebook profile, whereas extroverts, it seems, tend to duplicate their social dominance on the social networks.

Physical disabilities and psychological disorders

Barak, Boniel-Nissim, and Suler (2008) pointed out that many participants in online support groups use them to reduce their social isolation and loneliness. Among these people are siblings of children with special needs (Tichon & Shapiro, 2003); people with AIDS (Mo & Coulson, 2010), ovarian or prostate cancer (Sullivan, 2003), multiple sclerosis (Weis et al., 2003), Parkinson's disease (Attard & Coulson, 2012), and diabetes (van Dam et al., 2005); as well as women with breast cancer (Fogel, Albert, Schnabel, Ditkoff, & Neugut, 2002). In all of these cases, as well as in many others, participants highlighted social closeness in their online social interactions as a major factor in attaining feelings of relief. However, some scholars have cast some doubt as to the positive impact of these online support groups. For example, van der Houwen et al. (2010) found that an online mutual bereavement support group did not predict long-term improvements in mental health.

Along with support groups that exist on the Internet, there are also web sites that serve people who are in deep emotional stress and who have suicidal intentions. One such is the SAHAR web site which provides anonymous skilled helpers that provide warmth and support. It has a high success rate in helping people (Barak, 2007). Such web sites may be very important to lonely people who, should they fall into a situation of extreme emotional distress, may well have no one to help them.

Barak and Sadovsky (2008) studied Internet use among hearing-impaired adolescents and its impact on their well-being. They found that the Internet provides such people with a nonauditory communication tool, one with which they can easily communicate with others. In addition, when using this tool, they may maintain their privacy (since in most Internet channels, the other side will not know that he or she is interacting with a deaf person). This may have a great impact on the personal empowerment of such people. Barak and Sadovsky further reported that although hearing-impaired adolescents possess lower self-esteem and a higher degree of loneliness than their hearing counterparts, when it comes to Internet users, the situation is different. In this case, hearing-impaired adolescents who were intensive users demonstrated the same level of well-being as was found in hearing adolescents. The Internet also appears to empower many other people with disabilities, such as the blind and visually impaired (Williamson, Wright, Schauder, & Bow, 2001) and wheelchair users (Amichai-Hamburger, McKenna, & Azran, 2008).

Older adults

The Internet has brought diverse new ways of sharing information and communicating with others. Internet use allows older adults to socialize regardless of physical boundaries or challenges of mobility and physical impairment (Sum, Mathews, Pourghasem, & Hughes, 2008). Fokkema and Knipscheer (2007) suggest that acquiring Internet skills can reduce loneliness especially among educated older people. Blažun, Saranto, and Rissanen (2012) pointed out that computer training courses which included online communication skills for elder people reduced loneliness and improved quality of life among the participants. Cotten, Ford, Ford, and Hale (2012) recently examined the relationship between the use of Internet and depression among retired Americans aged 50 and above using the large database of the Health and Retirement Survey in the United States. All indicators showed a reduction of depression and an increase in well-being for adults who used the Internet regularly (see also Fuglsang, 2005; Shapira Barak & Gal, 2007).

Rodríguez, Gonzalez, Favela, and Santana (2009) focused their study on older adults in Mexico. In many cases, because of the immigration of the younger generation to the United States, these individuals find themselves living alone without seeing their children over long periods of time. Based on interviews with these older people, the authors suggest that having online contact with their families might help to cope with the distance. In an exploratory investigation into dating among later-life women, Dickson, Hughes, and Walker (2005) found that the

Internet creates unique opportunities for older people to build romantic relationships with others while protecting them. The authors report that these older women felt that through the Internet they were able to ascertain whether their potential partner saw them as a romantic companion or a prospective caregiver. In addition subjects reported using the Internet to verify that their potential partner was loving and caring and not someone who would try to restrict or control them.

Members of stigmatized minority groups

Members of Internet groups tend to develop group identification, sometimes even faster than participants in offline groups, and display cooperative behavior to the same extent as members of offline groups (McKenna & Green, 2002). Members of stigmatized groups, or people who would be stigmatized if their personal characteristics were fully revealed in public, face major psychological impediments. First, they experience difficulties in detecting similar others in their everyday environments, a situation that leads to feelings of loneliness, alienation, and estrangement. In addition, they may well feel estranged from the wider community and even from their family and friends whom they fear would not accept them should they know *the real me*. Such people, with their hidden identities, are very likely to hear those around them expressing negative opinions about members of their stigmatized group (e.g., expressing homophobic views in front of the individual who is *in the closet*). This results in lowered self-esteem and self-worth and increases the sense of alienation and loneliness for those with marginalized and concealable identity aspects (Frable, 1993).

Although finding such similar others in the everyday environment can be difficult, this is not the case on the Internet, where groups and individuals who share almost any interest imaginable can be readily found. Finding similar others online who share this marginalized self-aspect has been shown to lead to a diminution in feelings of cultural estrangement and alienation. When an individual takes an active part in a group comprising similar others, group participation leads to increased self-acceptance, enhanced self-esteem, and a further reduction of loneliness. Anonymity is also likely to give people the courage to join web communities when they belong to a group with a negative social stigma (McKenna & Bargh, 1998; McKenna, Green, & Gleason, 2002). This is particularly true of people belonging to a group, such as one with marginalized sexual interests, where members conceal their identities in their daily offline lives. When they become members of a group of similar others online, their self-esteem is likely to rise, leading to a greater possibility that they will eventually choose to *come out* into the offline world (McKenna & Bargh).

Internet Addiction and the Lonely

The Internet enables people with social inhibitions to experience significant feelings of empowerment. However, the relative ease of building online relationships may push people to become addicted to the Internet. In turn, this

may lead them to transfer most, if not all, of their social and interpersonal connections to the Internet. Young (1996, 1998) explained that Internet addiction is characterized by excessive overuse of the Internet, which leads to a disruption in sleep patterns, work productivity, daily routines, and social life. This dependence on Internet activities may lead such people to experience significant difficulties in their offline daily lives (see Young, 1998; Widyanto & McMurran, 2004).

Many personality characteristics have been linked to online addiction, and it seems that a significant number of them relate to social inhibitions suffered offline. Shotton (1991) found that introversion and sensation seeking was related to heavy computer use, as were a tendency to boredom, self-consciousness, loneliness, and social anxiety (Loytsker & Aiello, 1997). Caplan (2003) found that many lonely individuals develop preferences for online social interaction, which can lead to problematic Internet use. Relatedly, Erwin, Turk, Heimberg, Fresco, & Hantula (2004) reported that socially anxious individuals spent the most time online, and Chak and Leung (2004) found that shyness was positively related to Internet addiction.

Thus, overusers and addicts of cyberspace were characterized as being more neurotic and less extroverted, as well as more socially anxious and emotionally lonely, than nonaddicts. In addition, Internet overusers appear to gain greater support from Internet social networks than average Internet users (Hardie & Yi-Tee, 2007). Hardie and Yi-Tee further reported that both neuroticism and the individual perception of social support offered by online social networks were significant predictors of excessive Internet use. Similarly, in their investigation of personality types and Internet and chat room use, Anolli, Villani, and Riva (2005) found that as compared to their more introverted counterparts, more extroverted individuals tended to recruit more through chat rooms, spend less time online (in terms of hours spent per week), and use chat significantly less.

It is important to remember that Internet addiction is a very broad umbrella term. It may well be more useful to review specific Internet addictions (e.g., addictions associated with chat, information, and sex). To engage in depth with this problem and attempt to counter these behaviors, it is first necessary to gain a full understanding of the relationship between addiction to specific services and specific personality characteristics. It seems to us that the link between social inhibitions and the different personality characteristics may well be regarded as correlated to symptoms of addiction, particularly with the extreme levels of social inhibition. Further research is needed to explicate the role of personality and track the possible pathways from novice overuse to eventual average use or pathological addiction. The link between extreme loner behavior and Internet use is particularly challenging to analyze. For such people the Internet is not only a compensatory tool but also a shutter to further block out the offline world. With this in mind such people should be encouraged to seek professional help.

Moving from Online to Offline: Do Online Social Skills Transfer Successfully?

The Internet has been shown to be a powerful empowerment tool, particularly among people with social inhibitions. The question then arises as to whether such people might transfer the skills gained from this empowerment to their offline social interactions and whether this may lead them to transfer online relationships from the online to the offline domain. It seems that people who do not suffer from social inhibitions integrate the offline and online worlds and move between them smoothly, giving the matter little thought (Pew Research Center, 2005). However, for socially inhibited people who recreate themselves on the online world (and in many cases do so by utilizing the anonymity and lack of physical exposure this environment creates), the transfer from online to offline might be very challenging. Gollwitzer (1986) argued that a higher level of satisfaction is reached by people when their identity-relevant activities are noted by a social audience.

The psychological environment created by the Internet is described as likely to have a major impact on online relationships since (i) the anonymity of the Internet significantly reduces the risks of self-disclosure and (ii) there is a high probability that the relationship will become stable in the long run and so will be able to transfer to a successful offline relationship should the two sides decide to meet (McKenna et al., 2002). Developing this idea, McKenna et al. suggested that people who find it easier to build online relationships will strive to move those significant relationships outside of the Internet, so as to make them a social reality.

It is important to bear in mind that this process should be gradual, particularly as people with social inhibitions are likely to feel greater anxiety toward a face-to-face interaction than others would. Orgad (2007) explored relationships that had moved from online to offline and subsequently lost their components of openness and self-disclosure. She points out that this outcome may well be due to the loss of anonymity and control over the interaction. McKenna et al. (2002) suggest that relationships can be moved from online to offline contexts and such changes are actually common among certain groups including homosexuals and people with extreme political orientations. Such people frequently find their group of like-minded others online and slowly through their interaction with other participants build their self-confidence. Through this process, such people may reach a stage where they feel strong enough to face the offline world and openly state their tendency.

We predict that most people with social inhibitions frequently experience a similar process. The progression may be very lengthy, but eventually it is likely to reach a stage where people with social inhibitions will find the courage to transfer an online relationship to the offline world and also to utilize the social skills developed in the online world to the offline world. However, for some people, even though they may wish to use their skills offline, this social self-efficacy, newly acquired through their Internet-based social interactions, may be confined there,

and they will feel unable to generalize it beyond the borders of cyberspace. This may happen particularly among people suffering from an extreme form of social anxiety, for whom the transition from an Internet connection to a real-life association might be too great a leap.

Amichai-Hamburger and Furnham (2007) suggest that the Internet supplies a learning environment that may be structured to enable people to learn how to transfer their new communication skills from the Internet to face-to-face interaction. In this regard, they offer a model that can serve the population of extremely socially anxious individuals who are particularly prone to generalize their Internet interpersonal skills inward (using them widely and exclusively in virtual communication). This model advocates an exceptionally gradual process to help individuals begin to loosen the control they feel on the Internet and so equip themselves to cope with the relative loss of control in an offline situation. This consists of four steps: (i) communicating by text only, (ii) communicating by text and image, (iii) communicating by video, and, lastly, (iv) face-to-face interaction. Amichai-Hamburger and Furnham (2007) argue that extremely socially anxious people may be particularly helped by this model due to its moderate ascent into the interpersonal communication. This process demonstrates the power of the Internet, not only as a supplier of a secure environment, but as one that provides tools to create a process of change from social anxiety to secure social relationships. The transition from online to offline interaction may be particularly challenging for people with physical disabilities. However, even here it is important that there is self-awareness of the process by such participants so that their face-to-face interactions do not dissipate in favor of the perhaps less challenging option of online interaction.

For people seeking help in online support groups, the concern that participation may lead the surfer to move away from the offline world is less relevant than in other situations. This is because the purpose of such groups is to deal with offline challenges and guide help seekers in their efforts to overcome them. Therefore, by definition the focus in these groups is on helping people with different aspects of their lives offline, and such practices are unlikely to create addictions among the help seekers.

Final Words and Future Directions

The Internet can help many people to build and maintain their social lives. This is manifest across a broad spectrum of communities, including older people, people with different physical limitations, and people who belong to groups with a negative social stigma. When it comes to people with social inhibitions, the situation is more complex. The Internet has been shown to assist with the fear of intimacy (Stritzke, Nguyen, & Durkin, 2004). It can serve as a shelter to protect such people in what they perceive as a frightening world (Hamburger & Ben-Artzi,

2000); however, this shelter might easily become confining or even a prison, as such individuals may gradually lock themselves away into the online world and neglect the offline.

One of the major more recent developments is the online social network, and its most popular form, Facebook. This is an environment that seemingly fights loneliness and helps to build and maintain friendships. Its strongest influence has been felt in the lives of young people who seem to run their lives through it. The long-term effects of Facebook on friendship and loneliness are as yet unclear. An observation of interactions on Facebook reveals that most of the communication is shallow – friends are accumulated as stamps. Therefore, the feedback system inherent in Facebook liking and the very typical brief interactions do not imply a high quality of friendship. It is pertinent to ask what the long-term impact will be on the definition of friendship. Are Facebook users replacing the quality definition of friendship with some quantity-distorted definition of friendship? Are they likely to dive into an illusion of friendship? And will people whose dominant friendships fall into this category be missing out on the psychological benefits of traditional friendships?

Pioneering studies are already indicating disturbing findings. For example, Lee, Moore, Park, and Park (2012) found a negative relation between self-esteem and the number of friends on Facebook. Further, this association was moderated by public self-consciousness (i.e., anxiety as to how one is perceived by others). That is, it was only people low in self-esteem who also had a high degree of public self-consciousness that had significantly more friends on Facebook. Longitudinal studies are needed to examine how young people develop a friendship that is more online in comparison to one that is more offline. In addition, future research is necessary in order to understand how loners are using Facebook and how far, if at all, it helps them in the long term to find solutions for their isolated state.

The impact of Facebook represents a pivotal point in our research challenges. It is important to ask whether in the future adults will live in an illusion of being surrounded by friends while not getting the psychological benefits of friendship and actually experiencing loneliness. Another possibility is that Facebook will eventually become primarily an additional communication channel for the traditional face-to-face interaction. Clearly, different individuals will choose to place their friendships in different places in the offline/online continuum. As to how far this will prove satisfactory, only time will tell.

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Mindfulness Meditation

Seeking Solitude in Community

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*A man thinking or working, is always alone, let him be where he will.
Solitude is not measured by the miles of space that intervene between a man
and his fellows. – Henry Thoreau, in Walden (1960, p. 91)*

In a widely told meditation teaching story, a person seeks solitude by renting a cabin in a remote location and looks forward to the time away with a sense of eager anticipation. He finds traveling to the cabin an exhilarating experience, as he leaves behind the bustling atmosphere of a busy city. Arriving at the site, he takes time to savor the surroundings, breathing in the clean mountain air and marveling at the breathtaking scenery. After unpacking, he settles down in the sparsely furnished cabin, having now attained the peace and quiet he so eagerly sought. Within a few minutes, however, he starts to feel restless and a little bored. The hard seat of the chair becomes increasingly uncomfortable the longer he sits, shifting one way and the next in an effort to find a sustainable position. At some point, he becomes aware of the sound of the wind rustling branches of the trees surrounding the cabin and decides to close the windows in order to mute the sounds. But this is only partially effective, because the sound of rushing water from a nearby brook is still loud enough to intrude, disrupting the silence. At some point, as the story is told, he goes outside and starts rearranging rocks in the stream, hoping to quiet and keep them from creating so much audible turbulence. Physical solitude, it seems, is not all it's made out to be (see Korpela & Staats, Chapter 20, this volume)!

This chapter considers the topic of solitude from the perspective of *mindfulness*, as embodied in a time-limited clinical program known as *mindfulness-based stress reduction* (MBSR). We focus on the idea that, somewhat paradoxically, solitude is most often fruitfully sought in the presence of, or at least with the support of

other, like-minded individuals. Our description of MBSR is followed by examples of other more enduring communal organizations to illustrate how opportunities for contemplative practices are embedded in the fabric of daily life in such manner as to promote a sense of psychological, if not physical, solitude.

Mindfulness and Solitude

The MBSR program originally evolved through the work of Jon Kabat-Zinn and colleagues at the University of Massachusetts Medical Center (UMMC), in response to a growing call for complementary healthcare beginning in the 1980s. It is described in the landmark book *Full catastrophe living* (Kabat-Zinn, 1990), which describes how Buddhist meditation practices came to be integrated with biomedical care in the context of a major urban medical center. Although patients at the UMMC received outstanding medical care, there were few available resources to help them deal with the stress of illness. Moreover, at that time the concept of illness as a stressor was poorly understood, and treatment focused almost exclusively on curing disease without addressing healing mind and body. Engel's (1997) proposal for a *biopsychosocial* model of disease heralded the onset of a new and broader way of thinking about medical treatment, but it took many years for his ideas to be incorporated into mainstream medicine.

Kabat-Zinn and colleagues (Kabat-Zinn, 1990, 1994) conceived of a meditation-based program rooted in mindfulness – moment-by-moment, nonjudgmental attention – as a way of helping patients face pain and other accompaniments of the many conditions for which they were being treated. The MBSR program expanded over a period of years to a point where literally thousands of patients have availed themselves of its benefits. It has been the focus of numerous clinical outcome studies that overall attest to its value in healthcare and high rates of adherence (e.g., Keng, Smoski, & Robins, 2011); and mindfulness-based programs have sprung up throughout the United States and Europe in response to a need for resources to help with the stresses of daily life, including illness (Salmon, Sephton, & Dreeben, 2011). The MBSR program emphasized gaining insight into the nature and causes of suffering associated with stressful events such as illness through sustained meditation practice, involving extended periods of silent contemplation either alone or in the company of others. Adherence is generally high in MBSR programs, in part because of strong encouragement to engage in self-directed exploration of mental events and physical sensations inhabiting the broad field of consciousness (Salmon, Santorelli, Sephton, & Kabat-Zinn, 2009). This is undertaken through extended periods of sitting meditation conducted in silence, offering a measure of solitude. Taking time on a regular day-to-day basis for quiet sitting in the midst of otherwise busy lives, MBSR participants are encouraged to observe the workings of the mind and how it contributes to conscious thoughts, behaviors, and emotions. *Going inwardly*, rather than *getting away* is fundamental to the program, in recognition of the fact that exploring the world of inner experience requires nothing more than a cushion or chair and the intention to be fully present.

It should be clear, however, that meditating in silence and even solitude is embedded in the supportive social context of the MBSR group, reminiscent of the concept of *sangha*, the shared experience of like-minded persons (discussed in a later section). Solitude does not imply isolation, an experience that is increasingly and ironically common in our highly interconnected world of technologically based communication devices (Turkle, 2011; see Amichai-Hamburger & Schneider, Chapter 18, this volume). Periods of meditation are interspersed with opportunities to share experiences with others and offer mutual support. Any sense of solitude is interwoven with a sense of strong social connectedness.

As practiced in MBSR, mindfulness meditation involves cultivating a state of nonreactive awareness that encompasses both inner experience and the outer world. Although this distinction may seem artificial – after all, exactly where is the boundary between inner and outer experience? – it serves to illustrate the idea that *awareness* of one's world can be a valuable therapeutic attribute because it helps develop an appreciation for the constant flow of stimulation that occupies our waking hours. One of the first discoveries of mindfulness meditation practitioners is often awareness of how much *busyness* characterizes their lives, not only in terms of everyday activities but also the rich inner world of consciousness populated by thoughts, feelings, memories, and other mental events that come and go in a never-ending stream. In this context, the concept of *solitude* seems very foreign, even unattainable. We often think of solitude as something that involves physically *getting away*, of being in a place where we are free to settle into a contemplative, nonreactive state of mind and body undisturbed by our physical surroundings. And yet, as the story that opens this chapter suggests, attaining a state of physical solitude may only sharpen awareness of how agitated we really are. This story also implicitly underscores the effort that may be involved in achieving a state of physical solitude, of finding a bucolic setting far from the pandemonium of daily life. For many people, it is increasing difficult to truly *get away*, at least in any physical sense. And even when the opportunity presents itself, the experience is likely to be far different from our expectations, because of the fact that we have literally become addicted to stimulation and are so immersed that we are hardly aware of its pervasive influence. One measure of this dependency is the potentially disorienting effect of voluntary deprivation, where we discover that eliminating external stimulation may only add to mental turbulence, much like the experience of withdrawal from an addiction to drugs.

Mindfulness-Based and Manifestations of Solitude

Coming from a mindfulness-based perspective, we propose that cultivating a sense of *solitude* may best begin by simply being where we are and focusing in the present moment. Rather than dealing with the complexities of getting away somewhere, we endorse the value of being *present* in our surroundings, whatever they happen to be. We suggest that opportunities for solitude exist everywhere. We draw on historical and contemporary writings about solitude to illustrate how communally oriented

groups provide opportunities for contemplative practices that help balance out the level of active engagement characteristic of daily life. The vital importance of environmental space as a source of healing and restoration notwithstanding (Sternberg, 2009), many people find that the presence of others is an essential prerequisite for seeking solitude, in terms of both material sustenance and supportive encouragement.

We begin by considering the MBSR program, its emphasis on alleviating stress through mindful awareness in ordinary, day-to-day circumstances, and the importance of the social context in which it is taught and practiced. This is followed by a brief commentary on Henry David Thoreau, the American transcendentalist who wrote a chapter on *Solitude* in his classic work *Walden*. Thoreau's solitary time at Walden occurred over a period of 2 years during which he remained in contact with family, friends, and acquaintances while living on property owned by his mentor, Ralph Waldo Emerson. Thus, his experiment in solitude evolved in the context of a highly supportive social network.

A similar pattern is found among the Shakers, one of America's most important and enduring communal societies. Despite the Shakers' tightly knit pattern of group cohesion and control, significant opportunities for contemplation and even solitude were afforded to members through their shared labor which the Shakers viewed as a form of worship. We see the same pattern of community support for individual contemplation in the carefully constructed labyrinths of the Harmonists who founded three communities in America in the early nineteenth century. As we shall see, the winding circular path of the Harmonist labyrinths was intended to facilitate reflection and self-awareness. It was quite consciously an opportunity for solitude in the midst of a busy communal life. We end our chapter with a brief discussion of how members of contemporary intentional communities have recognized and embraced the need for quiet and solitude within their shared lives. Through practices such as community gardens and animal husbandry, they too have found creative ways to be "alone in the presence of others."

It is our thesis that *solitude* may even require, or at least is facilitated by, being embedded in a network of social support. Although this may seem paradoxical, when you think about it, most contemplative practices are supported by a network of people and resources that make the opportunity possible. To our way of thinking, *solitude* almost always occurs in a social context.

We are currently exposed to so much uncontrolled stimulation that it is a great relief to be able to spend time in communally based meditation settings that paradoxically exist to support psychological solitude by providing a sort of firewall against distracting intrusions. There are other ways to seek solitude, of course, through personal prayer, reflection, and contemplation, but the popularity of communal settings to encourage the practice is very much in keeping with contemporary psychological interventions such as *mindfulness meditation*. Social support is a strong buffer against chronic stress, and the experience of "being alone in the presence of others" may therefore offer a double benefit in the form of a protective infrastructure that provides an opportunity for psychological growth through solitary meditation practices.

Implicit in this view is the idea that *solitude* is most often practiced episodically, rather than continuously. Taking time out from one's busy day for solitary meditative practices is more appealing and feasible for most people than living a contemplative monastic life with only limited social contact. Interspersing periods of solitude with sustained engagement with others points in the direction of a balanced *middle way* of living.

Interlude

I (PS) am writing these words in an airport while waiting several hours for a connecting flight, immersed in a steady stream of people heading to and from the arrival and departure gates. I'm sitting on a stool at a long counter with power outlets for laptops, facing across a wide concourse and two moving sidewalks flanked by shiny tiled walkways. The hard stools and counter are elevated, so that my legs, and everyone else's, dangle above the floor. Almost no one stays seated very long, encouraged by the design of the space to perch momentarily before moving on. Periodic announcements cut through the steady flow of conversations and the muted rumble of the walkway. A riot of smells – coffee, perfume, french fries, and cleaning supplies on a cart – pass in and out of awareness, as do the many other sights and sounds of an airport coming to life in the early hours of a weekend morning. And in the midst of all this, I experience a sense of comfort with the sort of intimate anonymity so characteristic of many crowded public places. There is a certain quality of solitude in this experience, one that comes from being in a space – any space – that does not demand a reaction on my part. Feeling compelled to act, to *do* something, is what disrupts solitude, not really the level of noise or other forms of stimulation that may originate externally or within the personal domain of one's mind. In this sense, we create our own opportunities for solitude, regardless of where we happen to be in any physical sense. Viewed from this perspective, solitude embodies a quality of *relaxed*, nonreactive attention to one's experience in the moment, whether alone or being with others.

Solitude is as much a self-contained state of mind as a quality of place and in this sense is reminiscent of *mindfulness*, defined earlier as a state of consciousness marked by present-moment, nonjudgmental awareness. The phrase *Wherever you go, there you are*, the title of a book on mindfulness meditation by Jon Kabat-Zinn (1994), embodies the idea that our surroundings comprise a frame or context that we inhabit and articulates the view that what we bring to any particular setting is as much a product of our own minds as any intrinsic properties of the setting itself. Seeking solitude in the form of physical isolation – a common theme – can seem an attractive proposition to someone seeking respite from a stressful way of life, but there is certainly no assurance that a change of place will have such an effect.

More likely, being in a physical environment that offers the possibility of solitude is just as likely to bring into heightened awareness the *inner* landscape of thoughts, emotions, and memories that have previously existed largely in the background of conscious experience.

It appears to be widely assumed that the advent of social networking systems such as Facebook, Twitter, and other media has broadened our social networks and in doing so led to a reduction of lonely isolation that troubles many people. A recent special issue of the *American Behavioral Scientist*, for example, documents ways in which information technology is increasingly being integrated with everyday life and creating new opportunities for social engagement (Haythornthwaite & Kendall, 2010). At any moment in time, anyone having access to the Internet is plugged into a staggering array of virtual resources that have the capability of interconnecting people in ways that were unimaginable only a few years ago. However, there is active debate about the effects of digital technologies on the *nature* of social connections they appear to facilitate, which some see as one manifestation of a broader trend in society toward lessening *depth* of relationships, resulting in increased loneliness and alienation (Marche, 2012). But regardless of the effects of electronic interconnectivity on social relationships, its pervasive nature diminishes the amount of time available for quiet reflection, for taking *time out* from the constant flow of stimulation that is increasingly at our disposal every moment of the day.

Mindfulness and stress reduction

It is common to think of *getting away* as the perfect antidote to stress, a concept that often includes images of physical solitude. The MBSR program offers an alternative to *getting away*, instead proposing the value of *being present*, regardless of the nature of one's circumstances. It proposes that much of our unhappiness stems from wanting things to be different from how we find them at any moment in time. According to this way of thinking, *solitude* by itself is neither inherently beneficial nor harmful; what is most important is the accompanying mental state. On the one hand, a state of physical solitude marked by mental turmoil is likely to be highly stressful, whereas cultivating a calm mind even in the context of a crowded, noisy environment can lead to a state of inner peace. Although solitude may certainly be a positive experience, the degree to which this is so ultimately depends largely on one's mental state. And even if someone feels drawn to the experience of physical solitude, there is great value in undertaking this journey in the presence of others. Comparatively few people seek prolonged solitude, though there are certainly many instances of contemplative practitioners who live in solitary states for even years at a time.

Traditionally, MBSR has been taught and practiced in a group format, as a way to emphasize the commonality of purpose uniting all participants. Moreover, it originated in the confines of a busy medical center, where participants were

immersed in the sights and sounds of a bustling, secular environment that at least on the surface would hardly seem conducive to alleviating stress. However, both the format and setting of MBSR contribute in a particular way to a sense of community that helps foster and sustain personal commitment to day-to-day cultivation of *mindfulness*. This sense of community contributes to cultivation of *sangha*, a sense of common purpose linking all practitioners. Historically, *sangha* was one of three elements comprising the cornerstone of Buddhist practice, the others being veneration of the *Buddha* and a commitment to *dharma* (truth, or *the way*). They are unified by four *noble truths*, which express a view of the shared characteristics of human existence. These truths (i) acknowledge the inevitability of suffering (or *unsatisfactoriness*) in life, (ii) address the causes of suffering, (iii) propose an end to suffering, and (iv) offer a prescriptive path to this end. Although not Buddhist in nature, MBSR is strongly influenced by these principles in the way it approaches the concept and alleviation of stress. Stress is related to suffering, which from a Buddhist perspective involves the inability to accept things as we find them, resulting in the habitual tendency to try and hold onto things we like and push away or avoid those which we find unpleasant. Attaining a sense of balance in life comes from being able to accept things as they are, not from passive resignation, but more out of a deep understanding of the true nature of things that often comes into conflict with our personally constructed view of reality. The value of attitudinal factors including acceptance, patience, nonjudging, and a willingness to avoid being locked into immutable beliefs cannot be overstated in regard to cultivation of mindful awareness.

The basic premise of MBSR is simple: much of the stress in peoples' lives is due to habitual patterns of mental activity that trigger behavioral reactivity accompanied by physiological arousal (see Schmidt & Miskovic, Chapter 4, this volume). Rather than focusing on what is happening in their lives in the present moment, people under stress often report chronic worry, apprehension, and physical tension linked to incessant thoughts about the past or future. As first described by Kabat-Zinn (1990) and later by Garland, Gaylord, and Park (2009) and Salmon, Sephton, and Dreeben (2011), mindfulness is associated with the *transactional* model of stress, first proposed by Lazarus and Folkman (1984), which suggests that challenging events are evaluated relative to perceived coping resources. This view of stress involves cognitive processing affecting not only how we perceive events in our lives but also whether or not we feel up to meeting the challenges they pose. In other words, how we *think* about things strongly influences the extent to which they are perceived as stressful. Much of the time, however, this evaluative process takes place without much conscious deliberation because we tend to react to events based on past experience and habitual reaction patterns, rather than being more deliberately responsive. Interposing mindful awareness between the onset of a potentially stressful event and our reaction to it offers an opportunity to more fully consider the nature of the challenge we are facing and what the most effective course of action may be, if indeed action is needed.

The MBSR program was originally offered to medical patients in the form of an eight-session program in which participants met weekly for approximately 2 months, and it is currently most commonly implemented in this format in contemporary clinical settings. Between the sixth and seventh week of the program, an all-day weekend retreat, conducted mostly in silence, provides participants with an opportunity to engage in sustained, inward-focused meditation practice, sharing the silence with others who have gathered for the same purpose.

The purpose of MBSR is to help alleviate suffering that frequently accompanies illness and other stressful life events by encouraging an attitude of acceptance toward present-moment circumstances as a way to counteract the fear, anxiety, and other negative emotions that commonly arise in the context of challenging events. To do this, MBSR makes use of several core mindfulness practices, including the body scan, sitting meditation, and hatha yoga. Each is taught with the purpose of providing a means of engaging in a regular, ongoing practice of focusing attention on a specific aspect of experience. These practices are taught during program sessions and incorporated into regular home practice through the use of recorded narratives of up to 45 min' duration. The body scan and yoga elements are somatically oriented, whereas in sitting meditation, attention is directed toward more cognitive aspects of experience.

In the body scan, attention is turned inwardly and then systematically directed from one region to another with an attitude that encourages acceptance and open exploration. Conditions such as chronic pain tend to capture attention disproportionately, leaving much of the body not only unexplored but unappreciated as well. Doing the body scan can help foster deep appreciation for the many internal processes that sustain life, despite the presence of localized pain. *As long as you are breathing, there is more right than wrong with you* is a frequent message in the program, reinforced by ongoing practice of the body scan. Directing attention to any aspect of the body or its functions anchors awareness in the present moment, because every aspect of our physical makeup takes place in real time. Unlike the mind, which freely meanders through memories of the past, projections of the future, and (occasionally) registration of events taking place in the present, somatic sensations comprise a solid foundation on which to build sustained, present-moment attention.

Yoga brings comparable sustained attention to *movement*, encouraging slow and gentle inner-oriented exploration of physical capabilities and helping overcome *disuse atrophy*, the loss of muscle tone that typically occurs as a result of illness-related inactivity (Salmon, Lush, Jablonski, & Sephton, 2009). As with the body scan, attention is directed inwardly, to the experience of movement-related sensations. The slow pacing of mindful yoga sessions encourages careful exploration of internal correlates of movement sequences and how they are synchronized with breathing. Practitioners learn to detect and breathe into boundaries or *edges* where physical limits of movement counteract the pull of gravity and motion ceases momentarily as a result of the balance between these opposing forces. Mindful yoga sequences end with a resting state, *savasana*, which is done lying on one's back

and taking in sensations associated with the breath as well as the experience of being in a state of quiet repose.

In sitting meditation, attention again shifts inwardly, this time to observation of mental events that comprise a never-ending, ongoing stream of cognitive activity that occupies much of conscious awareness. This inner dialog is comprised of thoughts, images, memories, and other *objects of consciousness* that constantly flow through the mind and exert a strong influence on feeling states and behavioral inclinations. They range freely over the past, present, and projected future and have measurable effects on our overall state of being. The intention of sitting meditation is to encourage *decentering*, or attaining a psychological distance from the flow of mental events in such a way that they can be noticed without having the sort of control over emotions or behavior that occurs in non-reflective states. Learning to view *thoughts as just thoughts* is a powerful effect of sitting meditation, encouraging not only tolerance for but ideally active curiosity about the mind and its contents. It can help soften the rigidity of deep-seated convictions we harbor about the nature of reality and lead to more open-minded and compassionate tolerance for oneself. In light of this, it is not surprising that mindfulness practices are making significant inroads into the practice of clinical psychology, where they help clients turn attention inwardly and observe with some detachment mental turmoil that contributes to psychological distress (Shapiro & Carlson, 2009). But such practices are embedded in the context of a socially based, supportive therapeutic relationship that helps prevent episodic periods of solitude from evolving into solipsistic isolation.

Turning inwardly, focusing inwardly, going inside, and directing attention to thoughts and to the body are all common directives in MBSR. They exemplify the conviction that unearthing the roots of stress and coming to an understanding of how to work with them skillfully come from focusing inwardly, in effect turning away from the world of externally oriented sensory experience. It's not at all unreasonable to consider this a pursuit of solitude, even if temporary, lasting just a few minutes at a time – not prolonged solitude, as in an extended retreat, for example, but a temporary respite from the demands of the outer world into the domain of inner experience. It's a bit like being in the water and going under the surface; one moment your head is above water, taking in the sights, sounds, and other sensations of the surrounding environment. The next moment, you make a transition to the underwater world, where sensory impressions are suddenly muted, and you become instantly aware of new and very different sensations, such as the experience of the breath or heartbeat, now amplified, or perhaps heightened awareness of thoughts that are no longer overshadowed by the intensity of sights or sounds above on the surface. Transitioning from one of these states to the other can be a startling experience. Likewise, focusing attention inwardly in way that reduces sensitivity to the outer world, whether via the body scan, yoga, or sitting meditation, can be equally dramatic, in terms of the radical shift in orientation. Most important, however, is the fact that even brief periods of inward-focused

attention can be highly restorative in terms of helping anchor attention in the present moment and thereby reduce stress.

Most MBSR participants have busy lives and don't have the luxury of taking time out from day-to-day responsibilities. They need to find ways to manage stress in circumstances that often give rise to stress in the first place – a daunting challenge to be sure. The group format of MBSR offers a significant source of social support, not only by implicitly validating the efforts of program participants to learn and practice skillful ways to manage stress but also simply by providing a time and place for people to gather on a regular basis in a calm atmosphere that ironically enough encourages turning attention inwardly and thereby helps them attain a certain sense of solitude. Simply being in the presence of others, without however needing to engage in ordinary patterns of interpersonal communications that make up so much of the social fabric of daily life awakens a unique feeling of trust and security that encourages free exploration of inner states that otherwise tend to lie beyond conscious awareness. Introspective practices are very fragile, in part because of our vigilant, self-protective tendencies as a species, so there is great value in affiliating with a community of like-minded individuals who implicitly derive reassurance from each other without having to continually verbalize their mutual commitment. There is a sense of *security in numbers* that fosters and sustains contemplative practices conducted in group settings such as MBSR, freeing attention to rest inwardly in at least a state of psychological solitude.

Other Communal Manifestations of Solitude

Thoreau and transcendentalism

One doesn't have to look far to find other examples of solitude in communal settings. We turn our attention now to a discussion of other historical and contemporary perspectives on solitude (see Barbour, Chapter 31, this volume), beginning with Henry David Thoreau. His writings, and those of other transcendentalists such as Ralph Waldo Emerson, strongly influenced the contemporary evolution of mindfulness in healthcare and everyday life. The historical roots of mindfulness as a contemplative practice are also deeply embedded in Buddhism, which advocated an orientation toward life that espoused the personal practice of meditation in a broader social context marked by compassionate care for one's fellow creatures. Themes of interconnectedness and interdependence figure strongly in Buddhist philosophy, reflected in the concept of *sangha* which we earlier proposed as a cornerstone of mindfulness practice. Balancing this is recognition of the importance of the mind and the role it plays in determining the nature of subjective experience. Coming to terms with the *constructed reality* each individual creates is one of the key functions of meditation, and it is ultimately a solitary pursuit. The process of engaging in this exploration may be facilitated by the presence of others, particularly when they are

engaged in the same pursuit, but ultimately it is a private journey that benefits from the sort of *psychological solitude* that arises when one feels a sense of implicit trust or security that lessens the need for outwardly oriented vigilance or social engagement.

Thoreau read widely in the area of what was termed “Orientalism” and was strongly influenced by what he perceived as a view of the world and our place in it that was radically different from the rational, deterministic Western philosophical traditions of the time. His outlook and philosophy reflect a significant contribution to the intellectual foundation of mindfulness practice, one aspect of which involves the somewhat paradoxical realization that, despite strong interconnectedness with other living creatures, there are depths of the mind to be probed that are uniquely private, where no one can accompany us. In his chapter on *Solitude* in the classic *Walden* (Thoreau, 1960), Thoreau wrote, “A man thinking or working, is always alone, let him be where he will. Solitude is not measured by the miles of space that intervene between a man and his fellows”(p. 95). This statement perfectly articulates one of the major themes of this chapter, the idea that *solitude* is as much a self-contained state of mind as a quality of place. As he walked about the village of Concord, Massachusetts, Thoreau was often lost in thought, observing the plant and animal life around him, noting the condition of the soil and air, and consciously reflecting upon the question of how best to live in this world. Throughout his life, Thoreau was able to cultivate a rich and thoughtful interior life while embedded in the daily rhythms of Concord and its inhabitants. Even while living at Walden Pond, he had frequent contact with family and friends, and as noted previously, his experiment in “living deliberately” (what we today might call *mindfully*,) was made possible through a network of economic and social support that he himself recognized and embraced (Richardson, 1986).

Shaker communities

Thoreau’s observation that “a man thinking or working is always alone” provides us with an important way of understanding the character of *solitude* in group settings. Three examples from America’s rich tradition of communal experimentation will illustrate this point. The first centers on the work practices of the Shakers, one of America’s most important and enduring communal societies, a group that spans more than 200 years of American history. The Shakers lived in 19 communal villages ranging from New York and New England to Ohio, Indiana, and Kentucky. Their religious beliefs and social practices included celibacy, communal ownership of property, ecstatic worship, and withdrawal from “worldly” society (Andrews, 1963). Shaker villages were comprised of one or more “families” ranging in size from 50 to 150 male and female members. Families were grouped according to spiritual maturity and commitment to the Shaker faith. Each family was an autonomous unit with its own leaders, land, and buildings and was responsible for its own economic survival. Family members lived, dined, worked, and prayed together.

Despite the strong communal bonds that united the Believers, there were multiple opportunities for members to experience “being alone in the presence of others.”

None was more important than the Shaker commitment to work as a form of worship. Every member of the Shaker community worked at some useful occupation. The Sisters prepared meals and did the community washing, ironing, sewing, and weaving; they tended to poultry and produced goods for sale including cloth, chair tapes, canned fruits and vegetables, medicinal herbs, and seed packets. The Brothers worked about the farm, tending to crops and herds of cattle, hogs, and sheep. Some worked in the tannery, mills, and shops where they made brooms, buckets, baskets, chairs, tables, cabinets, leather goods, and their famous oval wooden boxes (Stein, 1992).

The idea that work was a sacred commitment imparted to the Believers' labors an attentiveness and "presence" that anticipates the moment to moment awareness at the heart of mindfulness practice. The Shakers believed that ideas could take form and that the details of their work and the quality of their craftsmanship embodied their commitment to God. The grace and beauty and the quiet radiance of Shaker artifacts stem at least in part from the Believers' concept of "the inner light." They thought that the spiritual state of the artisan was infused in and reflected by the things he or she fashioned by hand. The Shakers strove for perfection in everything they did and their devotion to excellence resulted in some of the greatest architecture in America as well as a design esthetic that continues to set the standard for both beauty and function (Andrews & Andrews, 1974).

The concentration and focus required by such an ethos allowed for a measure of solitude even in the midst of group labor. Almost without exception, visitors to Shaker villages commented on their peacefulness and sacred aura, their atmosphere of order and permanence. Workshops were light and airy with two or three brothers or sisters working together. Although talking was not forbidden, community journals and the observations of visitors suggest that Believers were focused on their labors (Wergland, 2007). The well-known Shaker aphorism, *Do your work as though you had a thousand years to live, and as you would if you knew you would die tomorrow* conveys an interesting conflation of two seemingly paradoxical ideas. Work is something to be done patiently and without rushing. At the same time, it should be done with a sense of purpose that emphasizes moment-by-moment attention accompanied by the realization that time is a valuable commodity, not to be casually expended on trivial tasks.

Productive labor, not drudgery, was the goal of Shaker work patterns, and more than one observer commented on its "easy kind of rhythm" so different from the noise and relentless pace of America's burgeoning factories (Andrews, 1963). It seems fair to say that the Shakers enjoyed a measure of solitude in their work and exemplify the broader argument of this chapter that solitude can be a temporary respite from the demands of the outer world as we focus on the domain of inner experience.

German Pietists and new harmony

A second example of "solitude in the presence of others" is found in the "walking meditations" facilitated by the carefully constructed labyrinths of the Harmonists, a German Pietist community that flourished in America in the early nineteenth

century. Led by the charismatic George Rapp, the Harmonists came to the United States in 1805, after years of persecution in Europe. Their religious beliefs included celibacy, communal ownership of property, and pacifism. Like the Shakers, they were renowned for the beauty, order, and prosperity of their towns where they combined industry and agriculture as they awaited the Second Coming (Arndt, 1971).

The Harmonists had three communities (two in Pennsylvania, one in frontier Indiana) and built a labyrinth in each of them. Although the terms labyrinth and maze are often used interchangeably, there is a difference between them. A true labyrinth has only one path that eventually leads to the center and another that leads the walker back to the starting point. Unlike a maze, there are no blind alleys, no dead ends, and no choices to be made concerning direction. By contrast, mazes contain numerous paths, twists, and turns and frequent decision points. Some mazes can provoke anxiety by obscuring light and visibility as well. Although the Harmonists referred to their circular hedged pathways as "labyrinths," in fact they followed the pattern of a circular hedge maze with multiple paths, some of which were dead ends. Made of bushes, vines, and flowering plants, none were tall enough to obscure one's sense of direction, however, and it is clear from community records that the Harmonists intended their "labyrinths" to be places of contemplation and meditation, an opportunity for solitude in the midst of a busy communal society (Laishley, 2001).

Labyrinths have a long history, of course, and occur in various forms in many different cultures and religious traditions. Within Christianity, however, the labyrinth is often construed as a symbol of Paradise or the Garden of Eden before the Fall, and this appears to have been the intent of the Harmonists. An individual walking the path and selecting the correct turn at each junction would eventually arrive at a small building in the center of the maze. The interior of this building was painted with beautiful scenes intended to evoke feelings of serenity and contentment. Community records suggest that Father Rapp saw the labyrinth as a powerful means of encouraging his followers to reflect on their lives and the difficulties of attaining a state of peace and social harmony (Arndt, 1971). Likewise, the complexity of the labyrinth's paths symbolized the difficulty of the soul's quest for God (Laishley, 2001).

The fact that the Harmonists constructed labyrinths in all of their communities is significant. It suggests that they recognized the importance of individual reflection and self-examination despite their commitment to communal way of life. Their labyrinths were an integral part of community life and provided individual members with an opportunity for brief periods of solitude in the midst of an industrious and carefully orchestrated society.

Contemporary communities

A third example of how the opportunity for solitude can be facilitated by a network of social support is found in the community gardens and animal husbandry of many contemporary communes and ecovillages. Many contemporary communities embrace gardening, walking, gathering plants and herbs, appreciating scenery, and

being around animals as important elements of health and wellness (Roth, 2009). The term *ecotherapy* is sometimes used to describe this outlook, which emphasizes the importance of attention to and awareness of one's surroundings as one goes about the daily routines of life. Such an outlook has obvious parallels with the ideas of *mindfulness* described in the preceding paragraphs as well as the notion that interspersing periods of solitude with sustained engagement with others is a more realistic and feasible approach for most people in today's busy world.

In his book *One square inch of silence*, Gordon Hempton (2009) argues that honoring the place of *quiet* in our lives and ensuring that community members can find quiet when they need it allow us to explore inner and outer worlds that can fill us with gratitude rather than stress. According to Hempton, when artificial stimuli overwhelm, distract, and dull our senses, we lose a very real part of ourselves. We become not only deafened but deadened to the world around us. Hempton emphasizes the need for community arrangements that respect, encourage, and support such respite, and his work has been featured prominently in *Communities*, the journal of the Fellowship for Intentional Community, a consortium of contemporary communal groups. Numerous essays by members of contemporary communities attest to the power of these ideas. Rarely does one encounter an article in *Communities* that does not allude in some form or fashion to the benefits that come from living in a community that values and encourages opportunities for introspection and solitude in addition to the group cohesiveness that is central to the community's mission. In a particularly personal and compelling essay, Niann Emerson-Chase (2009), a member of an ecovillage in Tubac, Arizona, wrote about the strong community support that allowed her to *retreat* within the community setting to "reflect, process [and] release." Drawn to the community's organic garden, she was able to engage in "deep reflection" while she worked, aided by the physical and emotional support of her fellow communitarians as she undertook the hard work of such introspection.

Conclusions and Future Directions

In summary, what might we say about the concept of solitude in relationship mindfulness-based and other contemplative practices? Our primary conclusion is that solitude is most often sought and sustained in a broader context of social support. Of course there are exceptions to this pattern, in accounts of hermetic, spiritually dedicated individuals who live in total solitary isolation for years (e.g., Nouwen, 1981), but this is not a realistic option for most people who are highly engaged in the world but nonetheless value contemplative solitude. Nowadays, opportunities for solitary contemplation often occur in environmental settings designed paradoxically enough to minimize intrusions from the outside world, and there is ample historical precedent for this pattern. In fact, virtually all meditative, spiritual, religious, and communal groups make provisions for their members to seek solitude as part of daily life, as something that is strongly supported

and encouraged. Such groups recognize that spending time in close proximity with others linked by interdependent roles needs to be balanced with time alone.

Even so well known a contemplative figure as Thoreau was highly dependent on social connections to support his 2-year experiment in relative solitude at Walden Pond. In MBSR, solitude comes in the form of daily mindfulness practice, where participants are encouraged to carve out time and space for quiet reflection, a respite from the demands of daily life regardless of how pressing they may be. The Shakers and Harmonists likewise condoned contemplative practices embodying elements of solitude, a tradition that continues on in many different social contexts.

Second, as defined here, solitude refers more to a frame of mind than the experience of physical isolation. For most people, it is impractical to take time away from family, jobs, and other responsibilities that are tightly interwoven into daily life. Being along with oneself periodically and having an opportunity for quiet reflection in the context of an otherwise busy life can have profound restorative qualities. Making time to do this, however, is often a challenge because of the low priority generally afforded such behavior. As we have seen, communal settings ranging from short-term clinical interventions to communities for sustained living value contemplative practices and offer regular opportunities to cultivate them. In each of the examples discussed in this chapter, an effective balance is attained between solitude and connectedness, each reinforcing the other. Participants in these communal organizations have no real need to *get away from it all* because the opportunity for solitary reflection is intrinsic to the setting. Engaging in sitting meditation, walking through the woods, tracking one's way through a labyrinth, and working in a communal garden reflect a diverse range of ways in which solitude can be a vital and valuable part of communal life.

Finally, we would like to reiterate the value of solitude, especially in the context of meditative practices, as a means of maintaining psychological equilibrium in a stressful world. Having even brief periods of time to reflect in a quiet way and become aware of the inner turmoil that is so often generated by external events offers a pathway to equanimity that is otherwise not easily attained in contemporary society. Rather than having the effect of encouraging social isolation, such practices can help us attend to not only our own needs but those of others as well.

We anticipate that the growing influence of mindfulness in healthcare and other facets of contemporary life will foster increasing appreciation for the value of solitude as a vital element of everyday life and encourage meditative practices that benefit from its influence in secular as well as spiritual contexts.

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The Restorative Qualities of Being Alone with Nature

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In the environmental psychological literature, the term *restoration* refers to physiological, psychological, and social processes through which person–environment interactions effect change from negative antecedent processes or environmental contexts to more positive states or contexts (Hartig, 2004). Negative antecedents may include psychophysiological stress and attentional fatigue that have accumulated, for example, in crowded and noisy urban environments. Positive outcomes may include physiological relaxation, positive emotions, and recovery of attention-demanding cognitive performances, in such environments as a tranquil park or forest (Berman, Jonides, & Kaplan, 2008; Hartig, 2004; Hartig, Evans, Jamner, Davis, & Gärling, 2003; Ulrich et al., 1991). Thus, restorative as well as taxing or demanding processes may take place more likely in some activities and environments than in others (Hartig). In the restorative environments literature, as well as in theories of emotion regulation and self-regulation, it is assumed that, in general, a person tends to avoid settings or situations where undesired emotions may become activated and chooses settings or situations where desired emotions are more likely (Campos, Frankel, & Camras, 2004; Caspi, Roberts, & Shiner, 2005; Tesser, 2002). Similarly, a process model of emotion regulation refers to *antecedent focused regulation*, which pertains to situation selection and situation/environment modification where a person approaches, avoids, or modifies situations or environments on the basis of their likely emotional impact (Gross, 1998). Those environments that promote restoration after being in another more demanding environment are referred to as restorative (Hartig).

Restoration may require social withdrawal to an environment where privacy can be realized. In this context, it has been presented that privacy regulation, place identity, attachment to favorite places, and restorative outcomes might be interrelated phenomena within self-regulation and emotion regulation (Korpela, 2002). Solitude and opportunities for reflection in nondistracting circumstances

and positive emotional outcomes have been mentioned with a noticeable frequency in *favorite place studies* (Korpela, 1992; Korpela & Hartig, 1996; Newell, 1997). In these studies, people report experiencing relaxation and positive emotions, becoming able to clear their minds, getting things in perspective, and pouring out troubles in a pleasant natural setting that often poses no immediate social demands. Thus, after emotional or cognitive stress, solitude and being alone with nature is considered a desirable state with positive effects (cf. Averill & Sundararajan, Chapter 6, and Salmon & Matarese, Chapter 19, this volume). It is these phenomena that we address in this chapter, acknowledging that striving for restoration may imply privacy regulation that includes both solitude/intimacy and the company of other people.

Restoration Studies Using Individuals and Small Groups

At the individual level, restoration involves physiological recovery and relaxation, change to positive self-reported emotions, and recovery of the ability for attention-demanding cognitive performances (Hartig et al., 2003; Parsons, Tassinary, Ulrich, Hebl, & Grossman-Alexander, 1998; Ulrich et al., 1991) after the exposure (watching or walking) to the natural environment (usually an urban park or a forest) following negative antecedents such as stress (Ulrich et al.) or attentional fatigue (Kaplan & Kaplan, 1989) (see Table 20.1 for examples of these studies). Thus, there are two dominant theories of restoration (attentional and psychophysiological) that focus on somewhat different psychological processes which emerge in different temporal order. However, these theories are complementary, and the psychological processes involved can be seen as the distinct but interacting benefits of restorative experiences both theoretically (Kaplan, 1995) and operationally (Hartig et al.).

The timetable of the appearance of the various positive outcomes indicating restoration is as follows. Decrease in heart rate, muscle tension, and skin conductance typically occur within 4–7 min (Ulrich et al., 1991; watching videos individually), lower blood pressure and improved mood are noted after 20 min (Hartig et al., 2003; walking in real environments with an assistant avoiding conversation; van den Berg, Koole, & van der Wulp, 2003; watching videos with 8–10 non-interacting participants), decrease in salivary cortisol has been demonstrated after observing a natural setting for 20 min (Park et al., 2007; walking and sitting in real environments individually), and better attentional performance has been documented after 10–55 min (Berman et al., 2008; walking in real environments and watching pictures individually; Faber Taylor & Kuo, 2009; children walking in real environments with an assistant avoiding conversation). The aforementioned restorative environments experiments have been carried out with single/solitary participants, participants accorded with a research assistant, or with small groups of non-discussing people. The findings are meant to be generalized to solitary urban people experiencing nature. The studies mostly refer to adults; however, to give a more complete account in this chapter, we

Table 20.1 Restorative environment studies showing the positive effects of natural settings in comparison to urban settings

Author(s)	Procedure	Main results of the effects of natural settings
Ulrich (1981)	Watching slides individually	Electroencephalographic recordings showed that subjects exhibit more activity in the alpha frequency band (an index of wakeful relaxation) during a 26-min session of pictures of nature with water or vegetation than during pictures of urban environments without water or vegetation
Ulrich et al. (1991)	Watching slides individually	Larger decrease in heart rate, muscle tension, and skin conductance within 4–7 min
Parsons et al. (1998)	Watching 10-min natural and urban videotapes individually	Participants who viewed urban-dominated scenes showed more autonomic activity indicative of stress and somatic activity indicative of greater negative affect relative to participants viewing nature-dominated scenes. The participants viewing nature-dominated scenes also recovered more quickly from stress and showed greater immunization to subsequent stress elicitors than participants viewing urban-dominated scenes
Cackowski and Nasar (2003)	Three participants (separated by partitions, avoiding conversation) at a time watching videos of 4 min 45 s	No significant effect on anger but higher frustration tolerance after exposure to videotapes with more vegetation
Hartig et al. (2003)	Walking in real environments with an assistant, avoiding conversation	Lower blood pressure and improved mood after 20 min
van den Berg et al. (2003)	Watching videos with 8–10 participants	Improved mood and concentration after 7 min
Laumann, Gärling, and Stormark (2003)	Watching videos individually	Reduced autonomic arousal (lower heart rate) and less spatially selective attention in the nature group compared with the urban group
Berto (2005)	Watching pictures on the computer screen individually	Improved sustained attention after 6 min
Park et al. (2007)	Walking and sitting in real environments individually	Larger decrease in salivary cortisol after observing a natural setting for 20 min
Berman et al. (2008)	Walking in real environments and watching pictures individually	Better attentional performance after 55-min walks/10-min picture viewing
Faber Taylor and Kuo (2009)	Children walking in real environments with an assistant avoiding conversation	Better attentional performance after 25 min
Li (2010)	Groups of 11–16 people walking together allowed to talk to each other; 3-day/2-night trips	Increased natural killer cell activity and number of anticancer protein cells

distinguish different phases of the lifespan and describe each separately. Thus, we inspect the relation between restoration, solitude, and natural environments in the following sections separated by children, adolescents, and adults. Before that, we describe a developmental trend (starting from childhood) between privacy regulation, emotion regulation, and self-regulation which helps to understand restoration in solitary natural settings as a particular aspect of emotion regulation and self-regulation.

Private Spaces in Childhood

Developmentally, the availability of privacy is closely related to the achievement of self-identity and self-esteem (Laufer & Wolfe, 1976; Newell, 1994). Personalization of private spaces provides children and adolescents with tangible signs that they are unique and different from others (Sobel, 1990). Children highly value having a room of their own that they can name as the primary place where they feel most at home, that they can personalize, and where they retreat when they are upset or want to be undisturbed (Chawla, 1992). In an observational study with children aged 1–11 years, Weinberger (2006) showed that nearly half of the children used (often solitary) informal *retreat* places in their family homes. Retreats were places where a child spontaneously chose to go in order to pull away from the activity of the group. Children observed to be in a negative mood were likely to be involved in passive behaviors (watching others, crying, cuddling comfort objects) during their retreat.

Similarly, Smith and Barker (2000) found that 5- to 12-year-olds frequently used den-making as a means of creating a private place in a large room outside the range of the gaze of adults in the out-of-school clubs in England and Wales. Harden's (2000) study of Scottish children ages 9–15 years also indicated that many *ordinary* children experience their home and their neighborhoods as safe and private havens. Feelings of insecurity (e.g., being afraid of intruding thieves) were most keenly felt at night or when alone at home. However, the neighborhood was not associated with the same level of safety as home because it included various public areas (e.g., railways, parks) where interfering adults or teenagers were considered as potential risks.

Violating children's needs for privacy seems to result in either psychological withdrawal or aggression, depending upon the duration of the crowding period and children's individual characteristics (Maxwell, 1996). Maxwell's study of 3- to 5-year-old children in the United States found that children chronically exposed to high density at home and in childcare were more susceptible to behavioral disturbances such as aggression, anxiety, and hyperactivity. However, being alone may also potentiate rumination and be related to depression and suicide risk (Evans, Owens, & Marsh, 2005).

In conclusion, the positive emotional outcomes related to the availability of private and favorite places suggest that there are relations among privacy

regulation, restoration, and self-regulation in children (cf. Newell, 1997; Korpela, Hartig, Kaiser, & Fuhrer, 2001). Indeed, adults and children provide converging self-report evidence that emotion regulation and self-regulation do occur in the favorite places of childhood. Studies of adults' memories of childhood favorite places (Cooper-Marcus, 1978; Hester, 1979; Sobel, 1990) indicate that they provided the feelings of security, privacy, and control. The need to be alone, the importance of hiding places, and the need to escape from social demands are commonly reported in these studies. Findings from studies with children and adolescents corroborate the significance of both solitary places and social places (Abbott-Chapman & Robertson, 2001, 2009; Owens, 1988, 1994).

Restorative Experiences and Solitude in Natural Favorite Places

As particular aspects of self-regulation, the temporal experiences of relaxation and reflecting on matters of personal importance in natural settings commonly appear in studies based on both children's, adolescents', and adults' accounts.

Children and youth

Among Finnish and Estonian children, 9-, 12-, and 17-year-olds have described their favorite places as providing opportunities not only to enjoy many activities and play socially but also to clear their minds, relax, and *pour out troubles* when alone in their own room or in nature (countryside, woods) (Korpela, 1989; Sommer, 1990). Adolescents in the United States reported that natural parks and undeveloped agricultural land were some of the best types of places to get away from other people, to go to feel better, and for getting things in perspective (Owens, 1988). In another study of US adolescents, natural environments were found to provide important settings for psychological comfort, respite and relaxation, esthetic experiences, being with nature, and the opportunity to be alone or share the solitary experiences with close friends, often in places where they can look around while feeling protected (i.e., prospect refuge) (Owens & McKinnon, 2009).

In an Australian study of 14- to 19-year-olds, favorite places at home or in nature (in the country, by the river, or at the beach) were particularly associated with adolescents' need to *take time out* from people and things that bothered them (Abbott-Chapman & Robertson, 2009). Only 11% of the adolescents associated social relationships with natural favorite places (vs. 21% in the town center). The most important reasons reported for the choice of a natural favorite place were participating in activities (32%); seeking peace, quiet, and sense of space (30%); and relaxing, being carefree, and seeking freedom (13%). Similarly, Finnish 17- to 18-year-olds reported going to their solitary favorite places (mainly their own room or a summer cottage) after emotionally negative events that threatened self-esteem

and the coherence of the experience of self (Korpela, 1992). Being alone at the summer cottage helped them to clear their mind and feel the courage to be themselves. Over half (55%) of Finnish children (aged 8–9 or 12–13 years) reported using their favorite places for cognitive restoration – describing a desire to pour out troubles, reflect on personal matters, clear one's mind, and feel free and relaxed in the favorite place (Korpela, Kyttä, & Hartig, 2002). One third of the children reported using their favorite places for emotion regulation reporting visiting the favorite place after setbacks, disappointments, and feeling down and lonely. Children who identified a natural favorite place tended to seek cognitive restoration and relaxation as a reason to visit the place slightly more often than children selecting other places such as sport settings, residential settings, community service settings, and commercial or retail settings. However, the association was statistically nonsignificant.

Finally, Thurber and Malinowski (1999) found that 8- to 16-year-old boys with higher levels of negative emotion were more likely to favor places where they could be alone while attending a residential summer camp in rural New Hampshire (United States), whereas happier boys favored places where they could socialize. The camp contained a variety of natural (an old white pine grove, mixed forest, lakefront, a meadow, wetlands, beaches, and a small island) and built environments (cabins, a dining hall, tennis courts, soccer, volleyball and baseball fields, boating and swimming docks). Boys with higher levels of negative emotion were also more likely to visit new places at camp than their less distressed peers.

Thus, favorite places appear to provide emotional release, restorative experiences, and possibilities for reflection in nondistracting circumstances. These results suggest that favorite places are used to regulate not only the experience of self (self-identity, self-esteem, Korpela, 2002; Owens & McKinnon, 2009) but emotions (particularly negative emotions) as well. Studies on adults' experiences (underneath) corroborate and further specify this interpretation.

Adults

Among adults' favorite places, everyday natural settings (e.g., parks, beaches, forests) typically constitute the largest category (50–63%) – as demonstrated in studies from the United Kingdom, Sweden, Finland, Ireland, Senegal, and the United States (Jorgensen, Hitchmough, & Dunnett, 2007; Knez, 2006; Korpela et al., 2001; Newell, 1997). Concerning associations between solitude, restoration, and nature, results from self-report studies in different regions in the United States indicate that people report a sense of remoteness or isolation as important in their *special* outdoor places, which may include unmanaged forest, savanna, prairie, meadows, and shoreline settings, as well as designed parks and gardens (Schroeder, 2002). Respondents reported the sense of being away from the civilized world (even in places close to populated areas), entering a whole different world from the usual daily life, escape, and solitude enabling them to relax, refresh, meditate, reflect, and experience a sense of peacefulness within themselves. In a more active interaction

with nature, people reported excitement, exploring, making discoveries, and being surprised by new things (Schroeder).

In general, cross-sectional self-report studies do indicate that natural favorite places provide restorative, stress-alleviating experiences such as relaxation, decrease in negative feelings and increase in positive ones, and forgetting worries and that people visit these places often alone for the regulation of their self-experience and feelings (Gross & Lane, 2007; Jorgensen et al., 2007; Korpela et al., 2001; Newell, 1997; Smaldone, Harris, & Sanyal, 2005). Restorative outcomes (i.e., being relaxed, forgetting worries, and contemplation) have characterized visits to natural favorite places in particular (Korpela et al.). Adults with high negative mood are more likely than those with lower negative mood to choose *natural* favorite places over other favorite places (e.g., sports, commercial, or community service settings) (Korpela, 2003). Moreover, adults with a greater number of health complaints are more likely than those with fewer complaints to choose natural favorite places in the vicinity over other favorite places (Korpela & Ylén, 2007). More importantly, and in support of the process of self-regulation, adults with more health complaints also appear to benefit more in emotional terms from their visits to these natural favorite places as compared to adults with fewer complaints. These findings refer to a dose-response relation between the frequency of visiting a favorite place and restorative experiences. This has been further demonstrated in a 5-day diary study in which the increase in the frequency of favorite place visits increased the strength of restorative experiences (Korpela & Ylén, 2009). Moreover, evidence of momentary improvement of stressed mood and also the continuation of positive mood while in the favorite place has been presented (Korpela, 2002, 2003; Regan & Horn, 2005).

Interestingly, there is at least some evidence to suggest that spontaneous place choices to implement restorative coping strategies are related not only to the amount of stress, but also to the sources of this stress. Gulwadi (2006) reported that more elementary school teachers with high-frequency vocational stress (vs. home-related or interpersonal stress) mentioned natural settings as restorative places than did a comparison group of low-frequency vocational stress teachers. In contrast, teachers with high-frequency interpersonal stress were most likely to seek places providing social contact.

To summarize, in studies on adults' self-reports, we observe evidence for the perception of restorative potentials (e.g., sense of being away) in natural settings and the process of using these places in solitude for self-regulation and emotion regulation according to the source and type of stress.

The Social Context of Restoration

People are social creatures. The need to belong (Baumeister & Leary, 1995), to compare (Festinger, 1954), or to become part of groups (Ellemers, 2012) is all inherent to the human race. It follows that transactions with the physical

world reflect the social meaning these environments can have. This will also apply to environments used for restoration and the judgment of places as restorative environments. In a very influential chapter, Wohlwill (1983) analyzed why natural environments are usually considered restorative and mentioned the absence of social feedback and, therefore, the absence of the need to adapt our responses to others' previous responses, which may allow for restoration. To date, this assertion has not been formally empirically evaluated. However, it seems to be echoed in the results of recent work on the social stress experienced by city dwellers (Lederbogen et al., 2011). Using fMRI techniques, Lederbogen et al.'s studies demonstrated that, compared to participants living or raised in small towns or rural areas, those who lived or were raised in cities experienced more stress induced by negative feedback while working on a cognitive task. Living in high population densities comes at a cost, as already suggested in the early social psychological work on urban environments (e.g., Milgram, 1970). The question then becomes how people want to manage the opportunities they have for restoration, in particular whether they want to be with other people, with which people, and in what kind of ambience.

A useful initial distinction in reviewing the literature pertaining to the social context of restoration is to compare situations that include people who are intimate with the individual seeking restoration versus the generally anonymous group of other people who happen to be in the same environment as the individual.

Company of intimates

Results from the few studies that have paid explicit attention to the social context of restoration show that social support can make a situation more restorative and that the company of friends can serve multiple functions, conducive or not conducive to restoration. The way that company can make a situation more restorative can be explained by the enablement or enhancement of restoration (Hartig, 2004). Enablement can, for example, be based on the concern for safety. In this regard, having company while visiting a natural environment may help a person to feel safe. Feelings of unsafety may arise from dealing with the difficult and dangerous passages of the terrain, encountering wild animals, or lack of orientation (Bixler & Floyd, 1997, Coble, Selin, & Erickson, 2003; Kaplan & Kaplan, 1982). Thus, the presence of another can be a safeguard against getting hurt or lost.

More prevalent than dangers arising from the terrain, however, may be dangers anticipated to come from other people. The danger of molestation or robbery, especially in places where little social control is executed, constitutes a fear that is widely held, especially among women (e.g., Day, 1995; Nasar & Jones, 1997). A sense of this danger could prevent people from going to environments that they would otherwise consider attractive for restorative purposes. Having company may be the critical enabling factor in going to places where one would feel unsafe

alone. A somewhat similar effect of social support that may facilitate restoration is described by researchers on ego depletion (Baumeister, Faber, & Wallace, 1999). They mention the importance of the *ego cast*, the support provided by familiar others to protect a person from demands that he / she is not capable of handling in a state of depletion.

Given unproblematic access to an environment, company may also enhance (or degrade) the restorative quality of a person's experience. In general, there is abundant research evidence indicating that people like to interact frequently with those with whom they share a stable and enduring affective bond (Baumeister & Leary, 1995). We assume that this enjoyment involves more than the focus of intimates upon one another, relevant though that may be for drawing attention away from everyday demands. Enjoying the company of others during outdoor recreation presumably also depends to some extent on the mutual appreciation of the given environment and the activities which it supports. This may appear as a positive effect of company on preferences for environments that cannot be attributed to enablement through increased safety (see Kaplan & Kaplan, 2011). On the other hand, the presence of another may degrade the quality of the restorative experience by, for example, compelling the person to pull their attention from the physical environment (cf. Kaplan, 1995; Staats, 2012). This may appear as a negative effect of company on preferences for environments, also independent of increased safety.

In a series of studies, we looked at the effects of different leisure environments and social context – being alone versus being with a friend – on the restorative potential of the complete situation. Staats and Hartig (2004) manipulated mental fatigue and the company of a friend through the use of scenarios. Subsequent preferences for a natural and an urban environment were investigated. Company was preferred in the urban environment but appeared not to contribute to preference and to the restorative potential of the natural environment. Looking closer at the natural environment results, we found two effects that were opposite in sign: it appeared that company indirectly *increased* perceived restorativeness via its effect on safety while simultaneously demonstrating a direct *negative* effect on perceived restorativeness.

These complex findings were replicated in a field study that looked at the effects of walking in company versus walking alone in a park or an urban environment (Johansson, Hartig, & Staats, 2011). The presence of company had a stronger effect on restoration during a walk in an urban setting, but being alone had stronger effects in a natural setting. Similarly, results from a third study again demonstrated that company of a friend has effects that are highly dependent on setting. In a scenario study, Staats, van Gemeren, and Hartig (2010) compared the restorative potential of four different types of settings (home, city center, urban park, transit environments). For each setting, participants imagined being in company or alone, as well as mentally fatigued or rested. Strong interaction effects were found, indicating that preference depends on specific combinations of person–environment characteristics. Most notably, the preference for an urban park was higher when

participants were mentally fatigued and alone as compared to being alone and rested or being fatigued and in the company of a good friend. Urban nature was the only setting where preference for being alone was so pronounced when fatigued (Staats et al., 2010).

Presence of unknown others

Solitude is no longer easy to achieve in a world whose population grows increasingly fast and where the means of transportation and communication make the encounter of others a common experience. This implies that restorative experiences, in built but also in natural environments, will take place in a context where strangers are actually present or can be expected to be present shortly. How do people deal with this phenomenon? The literature that specifically addresses the psychological consequences of interacting with large numbers of anonymous strangers is not optimistic about its consequences to restoration. Previously mentioned is the *no feedback* hypothesis (Wohlwill, 1983) as one of the *charms* of nature. It seems likely that the encounter of (many) strangers in nature will be negatively evaluated by a person in need of restoration and will interfere with actual restoration. However, hardly any research exists on this specific topic. Contrary to our hypothesis, empirical work suggests that the presence of unknown others in natural environments has no effect on the evaluation of the environment or on restoration. A study by Cole and Hall (2010) describes the experiences of recreationists on trailheads that were heavily (100–300 visitors per day) or moderately (0–100 visitors per day) used. Scores for the decrease in self-reported stress and mental rejuvenation were similar across the trails. The number of groups of other recreationists that participants met on the trail was not related to restoration. Despite the limitations of the study – the authors point out that complete solitude was never experienced by their participants – they conclude that restoration can hardly be an argument to strongly limit visitors' access.

These inconclusive results are to some extent complemented by experiments that are currently being executed under supervision of the second author (Konings, 2012; Rieder, 2012). In one experiment (Konings), one trail through a forest was simulated by identical photographs except that the three sequences representing three conditions showed either no people, some other people (4 images with people in a total of 44 slides), or many people (18 images with people in a total of 44 slides). These simulated trails showed differences in the preference and likelihood of restoration scores. There was a marginally significant interaction effect suggesting that participants who were made mentally fatigued (by a cognitively demanding 50-min intelligence test), compared with participants who were rested, considered the walk without people more pleasant, and the walk with few or many people less pleasant, contrary to the rested participants (see Figure 20.1).

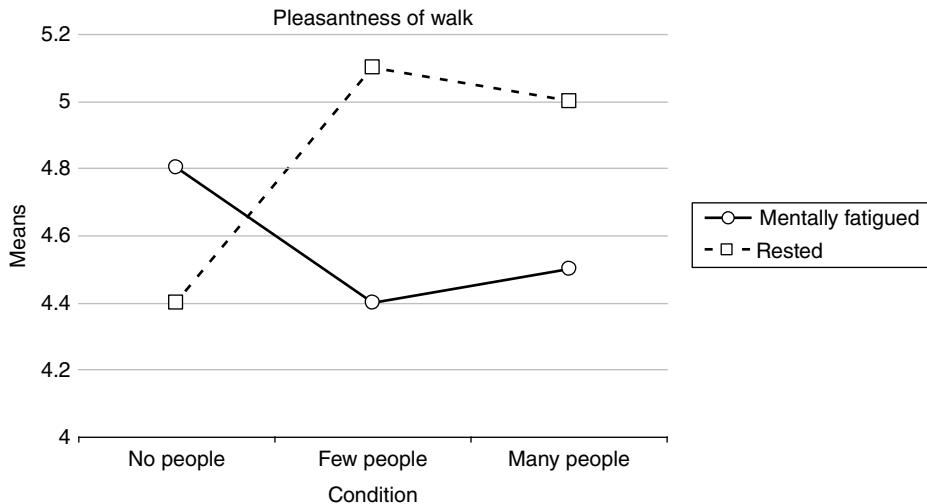


Figure 20.1 Pleasantness of walk while mentally fatigued or rested with different numbers of people on the trail.

Source: Konings (2012)

Presence of both known and unknown others in a leisure setting

Other research (Staats et al., 2010) has pointed at other motives to be with a friend: participants who were fatigued while visiting a busy city center preferred being with a friend over being alone, in a situation where safety was unlikely to explain this preference. A potential explanation could be the sociability norm, prescribing that one should not be alone in a public setting (Bourdieu, 1984; Lofland, 1998). We also studied the combination of both a friend and unknown others in experiments in which participants chose a seat in a café (Staats & Van der Jagt, 2013). Scenarios described participants to be mentally fatigued or rested and to be alone or with a friend. Then a floor plan of a café was shown in which all tables were partly occupied. Two conditions showed either a café with only a number of identical tables or a café with the same tables but with a reading table included (see Figure 20.2).

The reading table condition was strongly preferred in seat choices and in preference and restorativeness ratings over the tables-only condition, but mainly for people alone and for those who had received the mental fatigue induction. The results imply that people in company of a good friend were not sensitive to the privacy intrusion experienced by the people alone, especially those who also felt mentally fatigued. Apparently, in social settings, the company of a friend also serves as a buffer against the violation of privacy and people alone are less able to handle such intrusions.

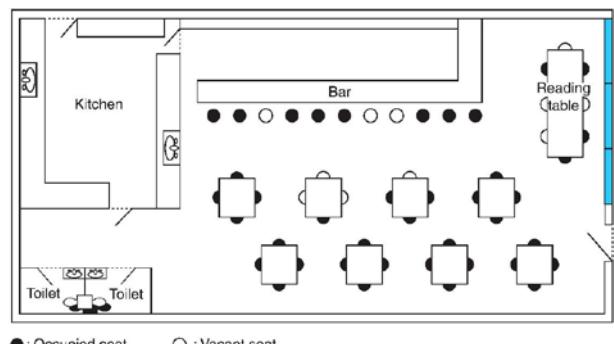
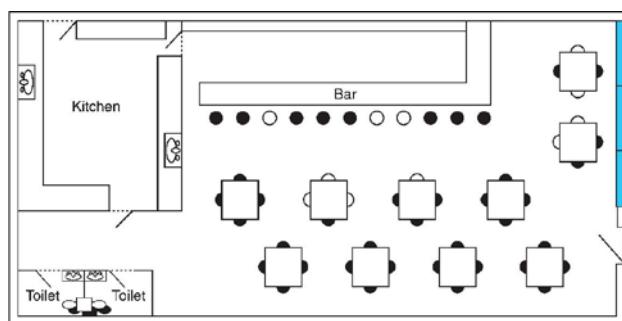


Figure 20.2 Floor plan of the café without a reading table and with a reading table.

Source: Staats and Van der Jagt (2013)

Conclusions and Future Directions

After emotional or cognitive stress, being alone with nature is restorative for urban citizens of different ages. People experience physiological recovery and positive emotions, become able to clear their minds, and pour out and deal with troubles in a pleasant, natural setting that often poses no immediate social demands. Thus, it is tempting to think that an easy access to appealing natural settings in urbanized environments promotes peoples' ability to cope with modern-day stress and uncertainty. Indeed, contacts with nature have been presented as a new precautionary means of general health promotion (COSTE39, 2007; Maller, Townsend, Pryor, Brown, & St. Leger, 2005). However, longitudinal studies about the health or well-being effects of solitary retreats to nature are nonexistent. Moreover, we know very little about the individual or cultural differences in these restorative nature experiences. Nor do we know the exact qualities of natural settings that might be the most important for solitary restoration. The evidence suggests that company of friends may enable people to experience restoration in nature without concerns for safety. Moreover, company may enhance restoration through the mutual appreciation of the given natural setting, but it also may degrade restoration if attention is drawn away from the environment. Very little is known about the number of unknown people in a natural setting that we tolerate without disturbance to restoration. Furthermore, when people experience restoration in nature, they are also likely to develop place attachments. The role of these place attachments in the development of identity, emotion regulation, and self-regulation would be an appealing and fruitful line of study for future researchers (Korpela, 2012).

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Part IV

Clinical Perspectives

Social Anhedonia and Solitude

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Human behavior largely occurs in a social milieu. At a minimum, the social environment provides a backdrop for most human activities. Furthermore, planning for, engaging in, and mentally replaying social interactions are at the center of many of our most important activities. Both careful study and anecdotal experiences reveal that there is a wide range of individual differences in interest in, pursuit of, and success with social interactions. Social functioning can be disrupted in numerous ways, including social anxiety, paranoia, and extremes of personality traits such as extraversion and introversion.

A less commonly considered disruption to social functioning is captured by the construct of social anhedonia. *Social anhedonia* is defined as trait-like disinterest in social contact and diminished pleasure derived from social contact, which typically results in decreased social networks and interactions. Silvia and Kwapil (2011) noted that the social disinterest that characterizes social anhedonia involves a lack of reward associated with social contact. This is contrasted with social anxiety (Alden & Auyeung, Chapter 22, this volume), which is characterized by a competing desire for social contact combined with fear of social evaluation and humiliation. Social anhedonia is also differentiated from transient social disinterest characteristic of depression, as well as from healthy introversion and enjoyment of solitary activities (Zelenski, Sobocko, & Whelan, Chapter 11, this volume). Social anhedonia's historical roots lie in the conceptualizations of schizotypy, schizoid personality, and schizophrenia, and much of the work in this area comes from a psychopathological approach. The present chapter provides an overview of social anhedonia, presents the theoretical background of the construct, reviews the empirical literature, and examines future directions for investigating the construct.

Understanding Social Anhedonia

Historical roots of social anhedonia

The construct of social anhedonia has its origins in the study of schizotypy and schizophrenia. Social disinterest and isolation are features of the prodromal, active, and residual phases of schizophrenia, as well as aspects of schizoid and schizotypal personality disorders. In their classic texts, Kraepelin (1913/1919) and Bleuler (1911/1950) described asociality as characteristic of patients with schizophrenia or dementia praecox, as well as the preschizophrenic condition. Hoch (1910) referred to the withdrawn premorbid functioning characteristic of many patients as the *shut-in personality*. Clausen and Kohn (1960) described that “schizophrenia poses a problem at the core of social-psychological theory – the problem of the relationship of the individual to his society, of the personality to its social matrix” (p. 295). Finally, Kretschmer (1925) used the term *schizoid* to describe socially withdrawn individuals and suggested that withdrawal in preschizophrenic patients resulted from characterological indifference to the world.

Social anhedonia played a central role in Rado's (1956) model of the development of schizophrenia, which greatly influenced Meehl's (1962) theory of schizotypy. Schizotypy refers to the personality organization that results from the underlying developmental vulnerability for schizophrenia (Claridge, 1997; Kwapil, Barrantes-Vidal, & Silvia, 2008; Lenzenweger, 2010). It involves the expression of cognitive, behavioral, affective, and interpersonal deficits across a continuum of subclinical and clinical impairment. Thus, schizophrenia represents the most severe manifestation of schizotypy. Schizotypy and, by extension, schizophrenia are multidimensional constructs. Candidate dimensions include positive symptoms (involving odd beliefs and unusual perceptual experiences), negative or deficit symptoms (characterized by social withdrawal, anhedonia, flat affect, and impoverished thinking), and disorganization (involving deterioration of cognition and behavior; e.g., Vollema & van den Bosch, 1995). Social anhedonia is hypothesized to be characteristic of the negative dimension.

Despite the descriptions of social disinterest and withdrawal in foundational writings such as Kraepelin (1913/1919) and Bleuler (1911/1950), the term social anhedonia is relatively new. Silvia and Kwapil (2011) reported that a PsycINFO search of social anhedonia listed 134 results (primarily in studies of schizotypy and schizophrenia) but added that only two were published prior to 1976. This likely reflects the increasing interest in the construct arising from Meehl's formulation of schizotypy and the general lack of attention that the construct has received outside of clinical psychology in areas such as social and personality psychology.

Social anhedonia and the need to belong

Although social anhedonia has historically been studied within the domains of schizotypy and schizophrenia, it can also be viewed as a dimension of individual differences. High levels have obvious behavioral consequences – solitude and social

withdrawal being foremost among them – but there is meaningful variability along the continuum.

We have conceptualized the continuum of social anhedonia using Baumeister and Leary's (1995) *need to belong*. Baumeister and Leary proposed that people "have a pervasive drive to form and maintain at least a minimum quantity of lasting, positive, and significant interpersonal relationships" (p. 497). Using an approach–avoid model of motivation (Elliot, 2008; Nikitin & Schoch, Chapter 12, this volume), we construe the need to belong as an approach motive: it motivates people to want, form, and maintain relationships. Thus, it has an appetitive and reward-seeking character – people seek social relationships because they are rewarding, not because they fear loneliness. Social anhedonia, in our view, represents a diminished need to belong. Thus, the solitude characteristic of social anhedonia reflects a weaker drive to connect with others, not a greater motive to avoid them. In contrast, socially anxious people have an approach–avoidance conflict. They are motivated to avoid other people – due to seeing them as judgmental, critical, and threatening – yet they are also motivated to approach others to form close relationships (Leary & Kowalski, 1995; Pontari, 2009). The belongingness needs of the socially anxious are thwarted by their social fears, in contrast to the diminished approach motive in social anhedonia.

Theories on the Origins of Social Anhedonia from Schizophrenia Research

Silvia and Kwapil (2011) noted that social psychology and personality psychology have largely overlooked the construct of social anhedonia. Thus, much of the relevant theoretical literature comes from the study of schizophrenia and schizotypy. However, integration of the study of social anhedonia as a symptom of schizophrenia and as a temperamental disposition should enhance our understanding of this important avenue to solitude. A dominant historical model of schizophrenia is that symptoms reflect failures in basic neurocognitive functions, so research has focused on these components. Furthermore, Kraepelin's (1913/1919) differentiation of affective and non-affective psychoses fueled the assumption that emotional aspects have a secondary role in schizophrenia. However, the demonstration that these disorders are not distinct entities and that emotional and social factors are not fully accounted for by neurocognitive impairment has prompted renewed interest in the mechanisms underlying social and emotional dysfunctions of schizophrenia. Additionally, the rise of social, cognitive, and affective neurosciences has renewed interest in the bases of emotional perception and expression.

Current debates on the nature of anhedonia and its role in social withdrawal

Negative symptoms fall into two related domains: decreased *drive* and *experience* of pleasure (which underlie anhedonia, amotivation, and apathy/avolition) and diminished *expression* of emotion (including flat affect, poverty of speech, and

asociality; Foussias & Remington, 2010). Traditionally, it was assumed that patients with anhedonia were incapable of experiencing and expressing pleasure. However, an accumulating literature questions whether persons with schizophrenia have an inability to experience positive emotions and thus a true hedonic deficit (Barch & Dowd, 2010; Kring & Moran, 2008). On the one hand, experimental evidence indicates that patients report *experiencing* both pleasant and unpleasant emotions in the moment with the same intensity as non-patients. On the other hand, studies consistently show high levels of *trait* anhedonia in self-report measures and deficits in affective expression. We summarize the state–trait disjunction of anhedonia, also called the “emotional paradox,” following the review by Cohen, Najolia, Brown, and Minor (2011).

Gard, Kring, Gard, Horan, and Green (2007) described that schizophrenia involves a specific deficit in the anticipation of pleasurable states but added that *consummatory* pleasure is relatively intact. Therefore, when patients are asked to evaluate their enjoyment on interviews or questionnaires, which depend on the activation of *anticipatory* hedonic neurocircuitry, they tend to report diminished pleasure, despite exhibiting pleasure in the moment. This suggests distinct neural pathways underlie *wanting* (*anticipatory*) and *liking* (*consummatory*) (Berridge & Robinson, 2003). Dopaminergic activity, clearly disrupted in schizophrenia, is more strongly related to anticipatory than consummatory pleasure (linked to serotonin and opioid systems).

This pattern of deficits in anticipatory pleasure combined with intact consummatory capacity in schizophrenia appears at odds with findings relating trait anhedonia with diminished enjoyment of social interactions in the moment. However, research provides consistent evidence that social (but not physical or nonsocial) anhedonia has a trait-like nature. Cohen et al. (2011) suggested that schizophrenia-spectrum anhedonia may be specifically social due to the inherent ambiguity of social situations, which demand more effort from emotional, social, and neurocognitive systems. It seems likely that specific aspects of social stimuli make them more difficult to process, but it is still unknown whether this is due to their *social* nature, *per se*, or due to their complexity and ambiguity.

Impairments in emotional memory

Trait anhedonia may reflect faulty memory for subjectively experienced positive emotions (Horan, Green, Kring, & Nuechterlein, 2006). As anticipatory pleasure is strongly influenced by memories of past positive experiences, a dysfunction in encoding or recall of experiences as rewarding might contribute to withdrawal. Individuals with anhedonia also exhibit decreased memory bias for emotionally valenced information, especially for pleasant stimuli. This is consistent with the hypothesis that emotion modulates memory functioning (McGaugh, 2004).

Herbener (2008) reviewed evidence that anhedonia results from an inability to consolidate experiences into long-term memory. There are two models of how

emotion impacts long-term episodic memory. Long-term potentiation (LTP), the biological substrate for long-term memory, is modulated by brain regions involved in processing emotional stimuli. Emotionally arousing stimuli increase amygdala activity, which in turn initiates a cascade of events that enhance LTP in the hippocampus. There is evidence that people with schizophrenia show abnormalities in amygdala volume and decreased amygdala activity in response to emotional stimuli, which may disrupt input from the amygdala in LTP and impair memory for emotional stimuli. Alternatively, a higher baseline level of amygdala and autonomic activity could exceed levels of arousal that would optimally enhance memory. This follows from evidence that when stimuli are *salient*, the ventral tegmentum sends dopaminergic bursts to the hippocampus to support LTP.

Gold, Waltz, Prentice, Morris, and Heerey (2008) proposed that anhedonia results from diminished capacity to maintain stable mental representations of the value of stimuli, arising from impaired affective learning. The inability to use internal representations of emotional experiences, previous rewards, and motivational goals decreases the likelihood of future motivated behavior. There is evidence of deficits in reinforcement learning and reward prediction in individuals with schizophrenia, consistent with an impairment in the *wanting* circuitry (Barch & Dowd, 2010).

Schema of low pleasure beliefs

Strauss and Gold (2012) recently used the accessibility model of emotional self-report (Robinson & Clore, 2002) to provide a new conceptualization of anhedonia in schizophrenia. This model states that when reporting on current feelings, individuals access experiential knowledge and inform directly on their emotions. However, when asked to report on noncurrent feelings, people use episodic memory to retrieve relevant contextual details that enable them to recreate previous emotional experiences. Healthy individuals typically overestimate pleasure during reports of noncurrent feelings because they draw on semantic knowledge stores and rely on situation-specific or identity-related beliefs, in contrast to patients with schizophrenia. It could be that the *in general* time frame and hypothetical nature of self-report anhedonia scales make it difficult to average across life events and demand drawing on beliefs about pleasure. The ability to recall contextual details fades quickly over time, and when there are too few episodic details to facilitate reports about past emotions, individuals access semantic memory and rely on more general beliefs about their emotions to fill in the details. Thus, retrospective reports may be inconsistent with the actual emotions experienced. The origins of beliefs regarding diminished pleasure remain unknown, but Strauss and Gold speculate that they may result from an insufficient history of pleasurable experiences to develop normative beliefs of pleasure, as well as early negative life events (e.g., social rejection), that shape beliefs about pleasure. They draw on evidence that identity-related beliefs and emotional schemas are used to organize and reconstruct details from life events and suggest that information is easily forgotten when it does not match the schema.

Affective regulation deficit

Affective regulation refers to strategies used to diminish unpleasant states and to enhance positive ones. Cohen et al. (2011) suggested that a deficit in dampening unpleasant emotions would contaminate the experience of pleasant states and that anhedonia may in part reflect elevations of negative emotion in the moment rather than abnormalities in positive emotions. Prefrontal and anterior cingulate cortex regions downregulate negative affect arising from the limbic structures, notably the amygdala. Thus, well-established deficits in frontal resources in schizophrenia may contribute to limbic overactivity (Cohen & Minor, 2010).

Deficits in socio-emotional processing

Individual differences in emotional, reward, and social brain systems contribute to differences in the motivational value of social contact. Difficulties in recognizing and regulating emotion, as well as understanding social context, likely contribute to the preference for isolation. The amygdala, a key structure for emotion processing, is activated by fearful stimuli prior to conscious awareness of the stimuli and enhances cortical activation in response to emotional stimuli (Phelps & LeDoux, 2005). It interacts with dopaminergic systems to assign *salience* to particular stimuli (Laviolette, 2007). Key functions of dopamine are to subserve hedonic subjective pleasure, identify cues of reward, and mediate motivational salience (Kapur, 2003). Dopamine dysregulation may increase the noise in the system, *drowning out* response to cues of reward and thus reducing motivational drive, resulting in social disinterest (Howes & Kapur, 2009).

Rosenfeld, Lieberman, and Jarskog (2011) highlighted the critical role of the nonapeptide hormone oxytocin in emotion-processing social-cognitive functions. Oxytocin influences social and emotional behavior, including social memory, empathy, trust, and attachment, and may play a role in disorders involving social deficits. Rosenfeld et al. suggested that the effects of oxytocin on social behavior are mediated via the amygdala and its dopaminergic connections. The social relevance of emotional stimuli modifies the degree of oxytocinergic input to the amygdala, and oxytocin may dampen reactions to emotional stimuli resulting in facilitation of prosocial behavior. These authors suggest that oxytocinergic input is indispensable for processing of emotional stimuli in a social context. Of relevance, oxytocin seems to have physiological effects at early stages of development, so oxytocin dysregulation may contribute to neurodevelopmental deficits in socio-emotional competence.

Attachment theory

Bowlby (1988) posited that early interactions with key figures become cognitively and affectively encoded as *internal working models* of the self and others. These models provide the basis of attachment style – defined as the pattern of relational expectations,

needs, emotions, and behaviors that results from internalizing attachment experiences and can develop in a secure or insecure manner (see Mikulincer & Shaver, Chapter 3, this volume). Bartholomew and Horowitz (1991) described two attachment dimensions. *Anxious attachment* is characterized by a negative schema of the self, whereas *avoidant attachment* is characterized by a judgment of others as unavailable and unsupportive. Avoidant attachment is associated with social avoidance, excessive need for self-confidence and independence, and emotional distance (Mikulincer & Shaver). People with high avoidance engage in deactivating strategies that lead to the dismissal of potential threats, a tendency to block conscious access to emotions, and diminished emotional reactivity. A neglectful early environment may trigger the use of deactivating strategies and the development of avoidance, which shapes a disposition toward social anhedonia.

Empirical Study of Social Anhedonia

As described earlier, social anhedonia is defined as trait-like disinterest in social contact that leads to solitude. Although there is a broad literature on the development and experience of social interactions in clinical and nonclinical populations, this review focuses on research examining social anhedonia in cross-sectional studies of non-patient samples, longitudinal studies of risk for psychopathology, and experience-sampling studies of the expression of social anhedonia in daily life.

Measurement of social anhedonia

The study of social anhedonia largely dates back to the development of questionnaire measures of the construct by the Chapmans and their colleagues as part of their program of research to assess psychosis proneness. Chapman, Chapman, and Raulin (1976) developed the original *Social Anhedonia Scale* based upon Meehl's (1964) checklist of schizotypic features. Following Meehl's description, the scale included items tapping both social disinterest and social fear; however, it was not an effective predictor of psychotic-like experiences. Therefore, Eckblad, Chapman, Chapman, and Mishlove (1982) revised the scale by removing social anxiety items and including additional items tapping schizoid withdrawal. Confirmatory factor analyses (e.g., Brown, Silvia, Myin-Germeys, Lewandowski, & Kwapisil, 2008; Kwapisil et al., 2008) indicated that the scale loads highly on a negative symptom schizotypy factor but also has a small cross loading onto a positive schizotypy factor. Most of the research reviewed in the chapter used this measure to assess social anhedonia. Note that other measures have been developed to tap social dysfunction related to schizotypy or schizophrenia; however, many of these focus on diagnostic features or confound the assessment of social anhedonia and anxiety. The No Close Friends subscale of the *Schizotypal Personality Questionnaire* (Raine, 1991) and the Introvertive

Anhedonia subscale of the *Oxford–Liverpool Inventory of Feelings and Experiences* (Mason, Claridge, & Jackson, 1995) overlap with the content of the *Revised Social Anhedonia Scale* (RSAS).

Cross-sectional assessment of social anhedonia

Given that social anhedonia is hypothesized to be a component of schizotypy, a number of studies have examined its cross-sectional association with schizophrenia-spectrum symptoms and personality disorder traits. Kwapil, Crump, and Pickup (2002) reported that college students who scored high on the RSAS exceeded control participants on interview ratings of psychotic-like, negative, schizotypal, schizoid, and paranoid symptoms and had poorer overall functioning. Horan, Brown, and Blanchard (2007) reported that high social anhedonia participants exceeded control participants on schizotypal, schizoid, and paranoid symptoms. Likewise, the Maryland Longitudinal Study of Schizotypy (Blanchard, Collins, Aghevli, Leung, & Cohen, 2011) reported that social anhedonia participants drawn from a community sample reported higher ratings of schizophrenia-spectrum personality traits than control subjects at a cross-sectional assessment. Furthermore, Cohen, Emmerson, Mann, Forbes, and Blanchard (2010) found that the biological parents of socially anhedonic young adults reported elevated rates of schizophrenia-spectrum personality disorders and traits. Kwapil et al. (2008) reported that a negative schizotypy factor (based largely on loadings from the RSAS) was associated with interview ratings of schizotypic symptoms.

A number of studies have examined disruptions in social functioning associated with social anhedonia. In the original RSAS study, Mishlove and Chapman (1985) described that high scorers on the scale reported overall social impairment, as well as fewer friends, social isolation, disinterest in dating, and social difficulties with their family relative to control participants. Horan et al. (2007) found that anhedonic participants reported fewer social supports and poorer social coping than control participants. Kwapil et al. (2008) reported that negative schizotypy was associated with an increased likelihood of never having a steady dating relationship, overall social impairment, and specific impairments with friendships, dating, and family relationships.

Several investigators have examined the association of attachment with social anhedonia. Leak (1991) found that social anhedonia had inverse associations with affiliative tendency and social interest. Troisi, Alcini, Coviello, Nanni, & Siracusano (2010) reported that social anhedonia was associated with insecure attachment, specifically with discomfort with closeness and low social confidence. Berry, Wearden, Barrowclough, and Liversidge (2006) reported that social anhedonia was primarily associated with avoidant attachment. Sheinbaum, Bedoya, Ros-Morente, Kwapil, and Barrantes-Vidal (2013) found that negative schizotypy was associated with insecure, dismissing, and fearful attachment in both Spanish and American samples.

Social anhedonia is characterized as involving disruptions in affective experience, especially diminution of positive affect. Martin, Becker, Cicero, Docherty, and Kerns (2011) reported that social anhedonia participants exhibited decreased attention to positive emotions relative to control participants. They added that diminished anticipatory and consummatory pleasure was not accounted for by negative affect. Leung, Couture, Blanchard, Lin, and Llerena (2010) reported that socially anhedonic women exhibited diminished positive affect both as a trait and in response to emotionally evocative stimuli. Martin and Kerns (2010) and Martin, Cicero, and Kerns (2012) found that social anhedonia participants were impaired on an affective priming task relative to control participants. They concluded that social anhedonia is associated with a deficit in controlled affective processing that was not accounted for by generalized impairment in cognitive control. Rey et al. (2010) indicated that socially anhedonic participants reported diminished pleasure to photographs in a contrast-gradient procedure. However, this effect was primarily limited to pictures of social, not sensory, dimensions of pleasure.

Silvia and Kwapil (2011) examined the relations of scores on the RSAS with Five-Factor Model (McCrae & Costa, 1987) personality dimensions. They reported a large effect size for the negative association with extraversion and a small effect for the negative association with agreeableness. The correlations were minimal with neuroticism, openness to experience, and conscientiousness. Social anhedonia was also related to facets of extraversion, evidencing large inverse correlations with gregariousness and warmth and medium-sized negative associations with positive emotions and excitement-seeking. These results were comparable to previous findings (Ross, Lutz, & Bailey, 2002). Silvia and Kwapil noted that these findings support the model that social anhedonia is characterized by diminished positive emotion and decreased interest in social contact, not heightened negative affect.

Empirical evidence of the neurocognitive correlates of social anhedonia has been mixed. For example, Gooding, Kwapil, and Tallent (1999) reported that socially anhedonic participants exhibited impaired performance on the *Wisconsin Card Sorting Test* (WCST). Tallent and Gooding (1999) partially replicated the WCST findings and found evidence of working memory deficits. Gooding, Matts, and Rollmann (2006) reported that high social anhedonia participants exhibited deficits in sustained attention. However, Gooding and Tallent (2003) did not find differences between social anhedonia and control participants on working memory. Cohen, Leung, Saperstein, and Blanchard (2006) reported that social anhedonia participants had impaired performance on measures of visual-spatial memory and construction, but did not differ from controls on measures of verbal memory, sustained attention, or general intelligence.

Few studies have examined the neuroanatomical and biobehavioral correlates of social anhedonia. Germine, Garrido, Bruce, and Hooker (2011) used fMRI to examine differences in face processing in socially anhedonic and control participants. They reported that high social anhedonia participants reported less neural activity in the anterior portion of the rostral medial prefrontal cortex, right

superior temporal gyrus, and left somatosensory cortex (brain areas involved in social cognition) during facial emotion discrimination conditions. Blanchard, Aghevli, Wilson, and Sargeant (2010) reported that high social anhedonia participants exhibited elevated rates of minor physical anomalies (presumed to be markers of early developmental instability) and that they were associated with elevated ratings of schizoid traits in the social anhedonia participants. Barrantes-Vidal et al. (2003) found that a negative schizotypy cluster exhibited more fluctuating dermatoglyphic anomalies than a low schizotypy cluster.

Although the majority of studies examining social anhedonia have been in English-speaking samples, there is increasing evidence supporting the cross-cultural validity of the construct. For example, Chan et al. (2012) reported that scores on a Chinese-language version of the RSAS were associated with ratings of schizotypal symptoms and deficits in anticipatory and consummatory pleasure. Kwapil, Ros-Morente, Silvia, and Barrantes-Vidal (2012) provided evidence of cross-cultural invariance of the factor structure of schizotypy using a Spanish-language version of the RSAS. Velthorst and Meijer (2012) reported associations of social anhedonia with social withdrawal and psychotic symptoms in a high-risk sample using a Dutch-language interview measure of social anhedonia. Rey, Jouvent, and Dubal (2009) reported that social anhedonia participants identified by a French-language version of the RSAS had elevated rates of schizotypal symptoms. A number of studies have examined the psychometric properties of translations of the RSAS (e.g., Fonseca-Pedrero et al., 2009).

Longitudinal studies of social anhedonia

Cross-sectional studies of nonclinically ascertained samples have supported the construct validity of social anhedonia and its role as a central component of the negative symptom dimension of schizotypy. In addition, three longitudinal studies have examined the extent to which social anhedonia is associated with the development of psychopathology and impairment.

Kwapil (1998) compared high scorers on the RSAS and control participants in a 10-year longitudinal study. The study successfully reassessed 96% of the original participants at the 10-year follow-up. Participants completed structured diagnostic interviews at each assessment. The social anhedonia group exceeded the control group on ratings of schizotypic symptoms and social impairment at the initial assessment, although only one anhedonia group member (3%) and none of the control group qualified for a schizophrenia-spectrum disorder. However, at the 10-year follow-up, the social anhedonia group exhibited markedly elevated rates of psychopathology and impairment. Most relevant to the study of schizotypy, 24% of the social anhedonia group had schizophrenia-spectrum disorders compared to only 1% of the control group. Furthermore, the social anhedonia participants who did not qualify for a spectrum diagnosis exceeded the control subjects on ratings of psychotic-like, schizotypal, schizoid, and paranoid symptoms and exhibited poorer

overall and social functioning. Only 38% of the social anhedonia participants reported being married compared to 68% of the control participants. The social anhedonia group did not differ from the control group on rates of mood disorders at the reassessment, differentiating trait-like social disinterest characteristic of negative schizotypy from episodic social impairment that is part of depression.

The marked deviance of the social anhedonia group at the follow-up assessment is striking given that all of the participants were enrolled as university students at the start of the study and the fact that the social anhedonia group was not markedly impaired at the initial assessment. Kwapil (1998) and Silvia and Kwapil (2011) suggested that the social structure provided to adolescents and young adults in their home of origin and college environments might have provided them with protection against schizophrenia-spectrum psychopathology. They added that this protection likely diminished as they progressed from the structure of the family and university environments into the *real world*. Furthermore, they conjectured that the disinterest in social contact and resulting solitude characteristic of social anhedonia may mean that they are less likely to obtain the protective benefits of social contact. This may be especially problematic for schizotypes as their symptoms may evade early detection and treatment.

Gooding, Tallent, and Matts (2005) conducted a 5-year longitudinal study of high-risk and control groups, including a group identified by high scores on the RSAS. Consistent with the findings of Kwapil (1998), they found that the social anhedonia group exceeded the control group on the rate of schizophrenia-spectrum disorders (16% to 0%, respectively), although the groups did not differ on rates of mood disorders.

Cohen, Couture, and Blanchard (2012) reported preliminary findings from a 3-year longitudinal reassessment of social anhedonia and control participants. They successfully reassessed 78 of 86 anhedonic and 77 of 89 control participants. Their report primarily focused on neuropsychological functioning in the sample, but they indicated that the social anhedonia group had higher ratings of schizotypal, schizoid, and paranoid symptoms and poorer overall functioning than the control group.

In summary, although limited in number and duration, longitudinal studies of social anhedonia indicate that it is a promising vulnerability marker for the development of schizophrenia-spectrum psychopathology. However, further study is needed to examine the role of social dysfunction in the development (or protection against the development) of psychopathology and to better understand how, why, and when social anhedonia contributes to the risk for impairment and psychopathology.

Assessment of social anhedonia in daily life

Questionnaire, interview, and laboratory studies provide important information about social anhedonia and its association with psychopathology. However, these studies fail to capture the expression of social anhedonia in daily life. For example,

questionnaires or interviews typically inquire about general recollections across weeks or months regarding topics such as how often participants spent time with others or whether they enjoyed time with others. However, these questions are subject to recall biases and may be influenced by the artificial setting of the study. Recent investigations have employed experience-sampling methodology (ESM) to examine social anhedonia in daily life. ESM is a within-day self-assessment technique in which participants are prompted at random intervals to complete brief questionnaires. ESM offers several advantages to traditional assessment procedures. Specifically, ESM (i) repeatedly assesses participants in their normal daily environment, enhancing ecological validity; (ii) assesses participants' experiences at the time of the signal, minimizing retrospective bias; and (iii) allows for examination of the context of participants' experiences. Thus, ESM provides a unique window for examining the real-world expression of social anhedonia.

Our research group has conducted three ESM studies examining the expression of social anhedonia in daily life. Brown, Silvia, Myin-Germeys, and Kwapil (2007) compared the expression of social anhedonia and social anxiety in 245 college students. Participants were issued personal digital assistants that signaled them eight times daily for 1 week to complete brief questionnaires regarding affect, thoughts, activities, and social contact. They completed an average of 41 questionnaires during the weeklong assessment. As hypothesized, social anhedonia was associated with solitude and social disinterest. High levels of social anhedonia were associated with increased reports of being alone, greater preference for solitude and social distance when with others, and diminished interest in being with others when alone. Social anhedonia was unassociated with the attribution of being alone because of being unwanted by others. Social anhedonia was associated with reports of diminished positive affect in daily life, but was unassociated with negative affect. Social anxiety, in contrast, was associated with negative affect and was unassociated with solitude. Furthermore, social anxiety was associated with self-consciousness and preference to be alone when with unfamiliar people. In summary, people with high social anhedonia spent more time alone and were generally disinterested in social contact. People high in social anxiety did not spend less time with others, but experienced emotional discomfort and self-consciousness when with others, especially others with whom they were not close.

Kwapil et al. (2009) replicated and extended the findings of Brown et al. (2007) in a new sample of 56 university students. As in the previous study, social anhedonia was associated with greater likelihood of being alone; in fact, 34% of the variance in solitude was explained by social anhedonia. When alone, social anhedonia scores were associated with being alone by choice and inversely associated with the desire to be with other people. When with others, social anhedonia was associated with a preference to be alone, diminished closeness, and less enjoyment of interactions. Social anhedonia was also associated with being in larger and less intimate groups during social contacts.

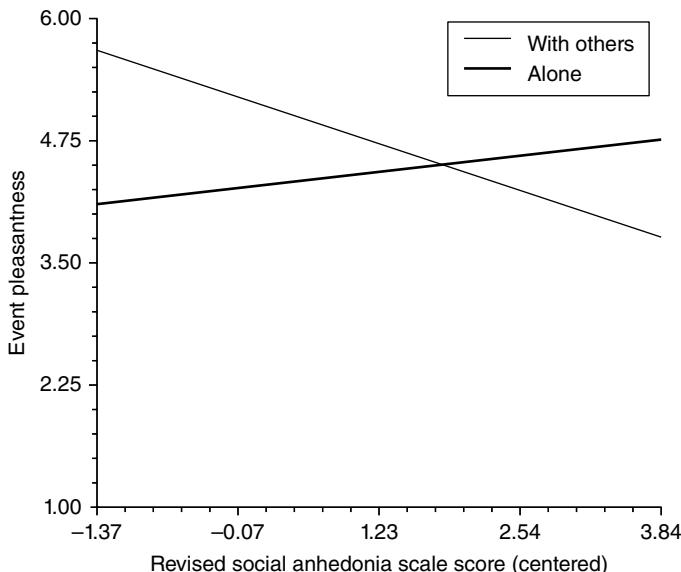


Figure 21.1 Relationship of the pleasantness of the most important event since the last signal with whether that event involved being with other people across levels of social anhedonia.

Kwapil et al. (2009) also examined the association of social contact with positive and negative affect. In general, people experience more positive and less negative affect when with others than when alone, consistent with the model of belongingness. However, Kwapil et al. found that social anhedonia participants experienced the opposite effect, reporting more positive and less negative affect when alone. Participants were also asked to report on the pleasantness of the most important event that occurred since the last ESM signal and whether that event involved other people. As seen in Figure 21.1, events were generally experienced as more pleasant when they involved others; however, participants high in social anhedonia reported the opposite effect.

Kwapil, Brown, Silvia, Myin-Germeys, and Barrantes-Vidal (2012) examined the expression of negative schizotypy in the daily life of 412 undergraduates using procedures described earlier. Their findings corresponded with the earlier results. Specifically, negative schizotypy was associated with diminished positive affect and less time spent with others. Negative schizotypy was associated with greater social distance and greater preference to be alone when with others and a diminished desire to be with others when alone. Simply put, participants high in negative schizotypy spent more time alone; when they were with others, they preferred to be alone; and when they were alone, they preferred to remain by themselves. As hypothesized, positive and negative schizotypy were associated with differential patterns of experiences in daily life. Notably, both positive and negative schizotypy

were associated with an increased desire to be alone when with others. However, this preference was moderated by anxiety in positive schizotypy and by diminished positive affect in negative schizotypy. Thus, negative schizotypy (largely characterized by social anhedonia) is driven by a lack of social reward, not elevated levels of social anxiety.

Future Directions in Social Anhedonia Research

Normal individual differences versus clinical characteristics

As is evident from the review, our interest in social anhedonia is closely tied to its links to schizotypy and the schizophrenia spectrum. Obviously, preference for solitude does not necessarily indicate social anhedonia and certainly should not be equated with risk for schizophrenia. This is especially important to keep in mind as debates rage about whether to include prodromal conditions such as *at-risk mental states* in official diagnostic nomenclature (e.g., Corcoran, First, & Cornblatt, 2011). The evidence strongly supports that social isolation and disinterest are common in all phases of schizophrenia. Nevertheless, it is important not to *overpathologize* normal introversion or transient isolation in response to stressors. Furthermore, elevated scores on screening inventories such as the RSAS should not be used to make diagnostic determinations or decisions about need for treatment. Such measures are useful for “getting one’s foot in the schizotypy door,” but clinical determinations require more rigorous evaluations.

Social isolation and disinterest that characterize schizotypy are hypothesized to be related to dispositional deficits in the experience of positive affect and connectedness to the world. However, investigators also suggest that social isolation may play a protective role in schizotypy and schizophrenia. For example, Kingdon and Turkington (2008) suggested that withdrawal may provide a method for coping with overstimulation (especially social overstimulation). Thus, future research should focus on understanding the developmental antecedents of social anhedonia, the present expression and role of such social impairment, and the pathways by which social anhedonia contributes to the development of schizophrenia-spectrum disorders.

Incorporating social anhedonia into social and personality research

Thus far, social anhedonia has primarily been studied within clinical psychology and psychiatry. Nevertheless, we have shown that variability in social anhedonia has implications for everyday social behavior and for how social and personality psychologists conceive of the nature of belongingness needs. A fruitful direction for future research would be to examine social anhedonia using methods, measures, and paradigms developed in social-personality research. As one example, social

psychologists have extensively studied the consequences of social exclusion and rejection (DeWall & Bushman, 2011). Consistent with the need to belong's stature as a cardinal social motive, social rejection has widespread effects on mood, self-esteem, aggression, interpersonal behavior, and cognition (Baumeister, 2012; DeWall, Deckman, Pond, & Bonser, 2011). Several factors moderate the effects of rejection – although none seems to eliminate its sting – so social psychologists should be curious to learn how social anhedonia, an ostensibly asocial orientation to others, interacts with manipulations of social acceptance and rejection.

As another example, research shows that belongingness needs express themselves in many small ways throughout the day. When friends and partners are not around, for example, people engage in *social snacking* (Gardner, Pickett, & Knowles, 2005), such as looking at pictures, remembering happy social events, or reading about friends on social media sites. People can even indirectly satisfy a need for connectedness by eating comfort food that evokes associations with loved ones (Troisi & Gabriel, 2011), engaging with characters from fictional TV shows (Derrick, Gabriel, & Hugenberg, 2009), and interacting with pets (Gardner et al., 2005). Do people high in social anhedonia use these oblique methods for gratifying social needs?

Finally, intimate relationships are an obvious manifestation of the need to belong. The nature of intimate relationships among the socially anhedonic deserves a close look. Research shows that people high in social anhedonia are much less likely to get married, but some of them do. What are intimate relationships like for people high in social anhedonia? What kinds of partners do they attract, what activities do they do together, and how stable and satisfying are their relationships?

Importance of assessing solitude in real-world contexts

As is evident from the review of empirical findings, our research group strongly advocates the assessment of psychological phenomena in real-world contexts. As psychologists and social scientists, we frequently presume to know a great deal about our constructs of interest; however, our knowledge is often limited to assessments in clinical or laboratory settings. This is especially problematic for studying solitude and social behaviors. Traditional assessments are generally limited to retrospective self-reports or observations of social behaviors in analogue situations. ESM and daily diary methods provide a unique window for assessing experiences in their natural setting and examining the impact of contextual factors. Our daily life studies not only provided support for the basic validity of social anhedonia (e.g., more time spent alone, disinterest in contact) but have also shown that affect associated with social contact for socially anhedonic people is distinct relative to their non-anhedonic peers. Furthermore, our studies provided support for hypothesized mechanisms that differentiate negative schizotypy from positive schizotypy. There are many new possibilities for experience-sampling researchers,

including smartphone and tablet technology, GPS monitoring, and ambulatory physiological assessment. These advances should enhance our understanding of the experience of solitude and social dysfunction and hopefully facilitate our understanding of the link between social anhedonia and the development of schizophrenia-spectrum psychopathology.

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Social Anxiety Disorder and Emotional Solitude

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In this chapter, we examine social anxiety and its clinical counterpart, *social anxiety disorder* (SAD; *social phobia*). Most individuals with severe social anxiety are not physically or socially isolated; they attend school, interact with family members and coworkers, and even participate in social gatherings and parties. Despite these social contacts, we propose that they exist in a state of *emotional solitude*, emotionally isolated because their negative self-views and fears impede the development of emotionally meaningful relationships. Our goal here is to examine the literature on social anxiety/SAD to explore the concept of emotional solitude and to understand how it is that socially anxious individuals feel alone when surrounded by people.

Social Anxiety and Social Anxiety Disorder

Social anxiety is a ubiquitous human experience. Most people feel at least some anxiety in certain social situations, the most common examples being job interviews, public speeches, and talking with authority figures (e.g., Frances, First, & Pincus, 1995, p. 246). Some individuals, however, develop SAD (social phobia), a clinical condition marked by chronic, debilitating social anxiety (American Psychiatric Association [APA], 1994). Whereas some individuals with SAD are anxious only in circumscribed situations, most experience anxiety in a broad range of social situations that activate fear of negative evaluation. SAD occurs at a lifetime prevalence of approximately 8% in the general adult population, making it the fourth most prevalent psychiatric disorder in North America (e.g., Kessler et al., 2005). In children, SAD is the second most prevalent psychiatric disorder after simple phobia (e.g., Costello, Mustillo, Erkanli, Keeler, & Angold, 2003).

SAD tends to be a chronic condition with an average duration of 10–25 years (e.g., DeWit, Ogborne, Offord, & MacDonald, 1999; Yonkers, Dijck, & Keller, 2001). SAD is associated with a variety of negative effects, including underemployment, financial hardship, and increased use of health care services, and therefore presents a substantial economic burden to society (e.g., Katzelnick et al., 2001). The disorder also increases vulnerability to a variety of other disorders, most notably substance use disorders and depression (e.g., Morris, Stewart, & Ham, 2005).

The preceding problems notwithstanding, perhaps the most devastating effect of SAD is its effects on social relationships. At all levels of development, childhood, adolescence, and adulthood, individuals with SAD have significant relational problems. The drive for social inclusion is believed to be an evolved mechanism that was as important to human survival as physical self-preservation (e.g., DeWall & Bushman, 2011; Mikulincer & Shaver, Chapter 3, this volume). People with SAD share this desire for social relatedness, but as we will discuss later, the fear of negative evaluation that is at the root of SAD impedes their ability to establish satisfying relationships (e.g., Brown, Silvia, Myin-Germeys, & Kwapil, 2007). They are afraid that they will say or do something – or indeed that they have some deep personal flaw – that will elicit negative responses from others (e.g., Rodebaugh, 2009; Wilson & Rapee, 2005). We have treated individuals with SAD who, despite being quite likeable, described themselves as “boring,” “an oddball,” “inept,” and “weird” and therefore anticipated others would reject them. Despite being around others, they tended to lack meaningful emotional contact with them. Not surprisingly, this process erodes their quality of life (Stein & Kean, 2000). We now turn to the literature on social anxiety and social relationships to examine how these relational difficulties present across the lifespan and disrupt the development of emotional closeness.

Social Anxiety in Childhood and Adolescence

Despite the high prevalence of SAD in adult populations, it is generally agreed that studies prior to the 1980s likely underestimated the prevalence rates in youth due to diagnostic changes (Blanco, Garcia, & Liebowitz, 2004). More often than not, social anxiety was viewed as a temporary condition or as a variant of normal personality traits (i.e., shyness). Diagnostically, many youth were often diagnosed with avoidant disorder of childhood and adolescence or misclassified as having overanxious disorder in childhood and adolescence, a diagnosis with symptoms resembling a combination of specific phobia and generalized anxiety disorder (Albano & Hayward, 2004; Bögels et al., 2010), both of which were removed from the DSM-IV. Clinicians now agree that SAD can be diagnosed reliably in school-aged children (see Bögels et al.); however, research has only recently begun to investigate severe clinical cases at younger ages. Thus, much of the existing research on childhood and adolescent SAD consists of a combination of clinical and

nonclinical populations. Similarly, there is substantial overlap between SAD and temperament-related variables such as behavioral inhibition, shyness, and social withdrawal, with some researchers suggesting that the variables may represent opposite ends of the same spectrum (e.g., Coplan & Rubin, 2010; Heiser, Turner, Beidel, & Roberson-Nay, 2009; Rapee & Coplan, 2010). Given the similarities, the term *socially anxious* will be used to encompass all of these constructs.

It is now commonly recognized that social anxiety can cause significant impairment and distress in youth (La Greca & Lopez, 1998; Spence, Donovan, & Brechman-Toussaint, 1999) and can have long-term detrimental effects due to the chronic nature of the disorder (Beidel, Ferrell, Alfano, & Yeganeh, 2001). Youth with social anxiety have been found to have fewer friends, difficulty with school attendance, and lower educational attainment (Khalid-Khan, Santibanez, McMicken, & Rynn, 2007) and have an increased risk for peer victimization, depression, suicide attempts, and substance abuse (Essau, Conradt, & Petermann, 2002; Kendall, Safford, Flannery-Schroeder, & Webb, 2004; Wittchen, Stein, & Kessler, 1999).

In comparison to adults, who become increasingly able to choose their work and social environments as they age, children and adolescents are bound to the social environment of schools and mandated education. School environments often include mandatory class participation, public speaking tasks, group athletics, and relatively prescribed social atmospheres (e.g., eating in the cafeteria). On one hand, this situation provides children and adolescents ample access to social environments, an advantage that some socially isolated adults do not have access to. In spite of this, the following literature would suggest that while socially anxious children and adolescents may not necessarily be *physically* isolated, they are experiencing feelings of *emotional* isolation and solitude.

Childhood

In early childhood, parents play a huge role in determining children's social development within the home environment (e.g., McLeod, Wood, & Weisz, 2007). Similarly, child characteristics such as temperament and biological factors are strongly implicated in the development of social anxiety (e.g., Essex, Klein, Slattery, Goldsmith, & Kalin, 2009). As children enter the school environment, peer relationships become increasingly important to children's social and emotional development, and peer variables such as peer acceptance and friendship support tend to have more robust effects on child outcomes (Festa & Ginsburg, 2011). During childhood, the ability to relate to others and successfully develop friendships is an important part of healthy development (e.g., Farmer et al., 2008). Despite a limited understanding of *friendship* at young ages (Selman, 1980), children begin to develop friends even in infancy, and studies have found that children who have friends at early ages are provided opportunities to acquire and develop the social skills necessary to promote future relationship development (e.g., Bukowski & Verroneau, Chapter 2, this volume; Howes, 1996; Howes & Phillipsen, 1998). Similarly, the presence of

positive peer relationships at younger ages facilitates the transition into formal schooling (Ladd, Kochenderfer, & Coleman, 1996). Overall, positive connections made through friendships have been found to promote well-being in various facets of life (Baumeister & Leary, 1995) and have even been found to protect at-risk children from becoming increasingly socially isolated and developing further internalizing symptoms (Laursen, Bukowski, Aunola, & Nurmi, 2007).

Unfortunately, research has found that anxious children, particularly those with social anxiety, tend to have difficulty in the realm of friendship development and maintenance. In general, socially anxious children tend to be more socially withdrawn and inhibited than their nonanxious classmates (Coplan & Ooi, Chapter 7, this volume; Erath, Flanagan, & Bierman, 2007). Social anxiety is often not recognized by important adults (i.e., parents, teachers), as these children are often seen as being shy and many of the interpersonal difficulties they experience may easily go unnoticed (Rimm-Kaufman et al., 2002). Like adults, socially anxious children often avoid social interactions due to fears of being negatively evaluated and/or rejected by peers which can deprive them of opportunities to socialize and learn important interpersonal skills (Schneider, 2009). Consistent with these fears, they report having fewer friends and close relationships (La Greca & Lopez, 1998). These social problems in childhood and early adolescence appear to persist into adulthood and have been found to predict future anxiety disorders (e.g., Roza, Hofstra, van der Ende, & Verhulst, 2003) as well as a broad range of other psychiatric disorders (e.g., Bittner, Egger, Erkanli, Costello, & Foley, 2007).

Due to these fears, socially anxious individuals often fail to exhibit positive interpersonal behaviors. For example, socially anxious children display less initiative and poorer social problem-solving skills and report lower orientation toward prosocial behaviors such as cooperation and helpfulness relative to nonanxious children (e.g., Bohlin, Bengtsgård, & Andersson, 2000; Caspi, Elder, & Bem, 1988). Some authors suggest that the lack of positive interpersonal behaviors leads peers to actively exclude and victimize socially anxious children (Ollendick & Hirshfeld-Becker, 2002). Consistent with this proposal, preschool and elementary-aged children who report fears of negative evaluation and social anxiety also report high levels of overt victimization (e.g., Slee, 1994; Storch, Zelman, Sweeney, Danner, & Dove, 2002).

In contrast, there is also evidence to suggest that anxious children tend to be more passively isolated, rather than actively excluded, due to their tendency to withdraw and use ineffective social skills (Thorell, Bohlin, & Rydell, 2004). In studies that have used sociometric peer nominations, socially anxious children are often rated as unpopular or are neglected by other students (i.e., receiving fewer votes overall) (Franke & Hymel, 1984; La Greca & Stone, 1993) and receive the lowest social impact scores (Strauss, Lahey, Frick, Frame, & Hynd, 1988). Given the tendency for socially anxious individuals to withdraw from and avoid social situations, they may be overly overlooked by many of their peers. Similarly, as aforementioned, teachers may also have difficulty detecting passive isolation, such

as being ignored, in comparison to more obvious forms of exclusion such as physical bullying and teasing. In one study, children's self-reported social anxiety was linked to various self-reported negative outcomes including loneliness, school avoidance, and dislike of school; however, social anxiety was mostly unrelated to teacher-reported outcomes (Weeks, Coplan, & Kingsbury, 2009). This lack of awareness might prevent teachers from properly providing support for isolated children, which may add to their perceptions of being ignored.

Having fewer social interactions can not only limit the feelings of connectedness toward others, but it can also limit the overall number of social situations they encounter. As a result, these children may have fewer opportunities to practice using positive interpersonal behaviors and skills (Hodges, Boivin, Vitaro, & Bukowski, 1999), which can lead to decreased effectiveness in future interactions. The more ineffective they are, the more likely these children are to be rejected or even bullied, resulting in a vicious cycle of negative behaviors and rejection (e.g., Gazelle & Ladd, 2003).

In addition to overall low levels of peer attention and acceptance, it appears that socially anxious children may experience loneliness and isolation even with peers that they consider to be friends. Overall, they tend to perceive lower friendship quality, lower levels of social support, and fewer positive interactions within their friendships (Festa & Ginsburg, 2011; La Greca & Harrison, 2005). These perceptions are particularly important given recent findings that close friendships may protect against feelings of loneliness and peer victimization in early adolescents with high levels of social anxiety (Erath, Flanagan, Bierman, & Tu, 2010). Despite these findings, many socially anxious children report not feeling close and/or comfortable with the friends that they have. Schneider (2009) found that in friendly interactions, anxious children were more unassertive, had little to say, lacked the normative friendly competitive behaviors, and overall were less positive. Anxious children were reserved even in interactions with classmates they considered to be *close friends*. Similarly, they report generally having fewer positive responses and interactions with their peers (Spence et al., 1999). Some researchers have suggested that the presence of social anxiety and avoidance can be used as a sign that a child is not satisfied with their current social relationships (Asher & Wheeler, 1985).

Adolescence

There is some research to suggest that some children demonstrate decreases in fear levels as they enter adolescence (Westenberg, Gullone, Bokhorst, Heyne, & King, 2007). However, the bulk of the literature would suggest that socially anxiety and interpersonal difficulties in elementary school lead to *increased* problems and poorer outcomes in adolescence and early adulthood (Bittner et al., 2007; see Bowker, Nelson, Markovic, & Luster, Chapter 10, this volume). The experience of loneliness has been found to be most prevalent and relevant to individuals in

adolescence (Heinrich & Gullone, 2006), with early adolescents reporting the highest levels of loneliness followed by decreases as they age (Marcoen & Goossens, 1993). Loneliness in adolescence is associated with other mental health difficulties such as depression, externalizing behaviors, and problems with self-harm and suicidal thoughts (Jones, Schinka, van Dulmen, Bossarte, & Swahn, 2011).

As individuals enter adolescence, various changes take place at both the individual and peer levels that might lead to the increased salience and incidence of interpersonal difficulties, particularly for socially anxious adolescents. It is particularly important to understand the nature of these changes as social anxiety often onsets in adolescence (APA, 1994). During this developmental period, adolescents begin to gain autonomy from their parents and begin to spend increasingly more time with peers. As a result, the peer group becomes one of the strongest determinants of psychosocial functioning during adolescence (Parker, Rubin, Erath, Wojslawowicz, & Buskirk, 2006). Adolescents tend to put great emphasis on being popular (LaFontana & Cillessen, 2010), as well as on the quality of their friendships and interpersonal interactions. Their positive perception of the stability and intimacy of these relationships is associated with higher levels of self-worth and positive social and emotional adjustment (Bukowski, Gauze, Hoza, & Newcomb, 1993).

It has been proposed that individuals begin the key developmental task of forming a personal identity in adolescence (Erikson, 1972; Marcia, 1966). During this time, adolescents begin to explore and evaluate the appropriateness of various identities and roles. Given that adolescents spend increasing amounts of time with peers, interpersonal relationships and experiences become vital sources of information (Allison & Schultz, 2001; Grotevant, Thorbecke, & Meyer, 1982). At the same time, adolescents' sense of self-awareness, particularly the awareness that one is different, becomes more prevalent during this developmental period (Fordham & Stevenson-Hinde, 1999; Rubin & Burgess, 2001). Adolescents begin to show more sensitivity to their own self-presentation and become more aware of how their self-view might differ from that of others (Beidel & Morris, 1995). Because of this change, adolescents start to become more aware of both their own and others' atypical behaviors.

In early adolescence, socially anxious youth display low social initiation and peer interactions, make shorter responses, and report being less likely to obtain positive responses from their social interactions (La Greca & Lopez, 1998). Internalizing behaviors such as being socially inhibited and shy are increasingly viewed by peers as negative and indicative of poor social competence (Fordham & Stevenson-Hinde, 1999; Rubin & Burgess, 2001), which might lead adolescents to actively reject and exclude individuals demonstrating these behaviors. These negative appraisals may be more salient to socially anxious adolescents, who often report poor self-concept (Reichert & Kuriloff, 2004), low self-worth, low social acceptance, and more negative interactions with peers (Ginsburg, La Greca, & Silverman, 1998).

Social Anxiety in Adults

The relationship patterns seen in socially anxious children and adolescents tend to persist into adulthood (e.g., Yonkers et al., 2001). Adults seeking treatment for SAD are consistently found to have smaller social networks than nonanxious controls and even many clinical groups (e.g., Davidson, Hughes, George, & Blazer, 1993). The same pattern is found in community samples, where more severe SAD symptoms are associated with greater risk of living alone, fewer friends, lower involvement in club or association activities, and lower rates of marriage or marriage-like relationships (Falk Dahl & Dahl, 2010). What is particularly notable for our purposes is that adults with SAD also have problems with close relationships. Compared with people with other disorders, they are more likely to report having no close friends (e.g., Chou, Liang, & Sareen, 2011; Rodebaugh, 2009). Even if they have friends, they are less satisfied with the quality of these relationships (e.g., Bech & Angst, 1996). Similarly, even if married, people with SAD are less satisfied with their partners (Bech & Angst) and experience significant marital distress (Whisman, 2007).

As in childhood and adolescence, adults with SAD can elicit negative responses from others. For example, Creed and Funder (1998) found that conversational partners of socially anxious students expressed less interest and liking for them, talked at instead of with them, dominated the interaction, and expressed greater irritation with them. College peers (i.e., friends) described them as vulnerable to threat, sensitive, lacking personal meaning in life, and moody (Creed & Funder). Heerey and Kring (2007) found that conversational partners of socially anxious students failed to experience the increase in positive affect found in partners of nonsocially anxious students. Earlier we stated that we generally find people with SAD to be likeable individuals. Why then do other people form negative impressions of them?

Social anxiety and relational behaviors

According to relational writers, the development of the satisfying relationships necessary for a positive sense of self is dependent on open and genuine expression of one's emotions and opinions to others and encouraging them to do the same (e.g., Collins & Miller, 1994; Laurenceau, Barrett, & Pietromonaco, 1998; Reis & Shaver, 1988). Reciprocal self-disclosure fosters a sense of similarity and mutual trust that motivates people to seek ongoing contact and produces the friendships and romantic relationships that help us to value ourselves. Self-disclosure reflects the broader concept of *authenticity*, or acting in accordance with one's *true self* (Brunell et al., 2010). Authenticity has been linked to a sense of social relatedness, higher self-esteem, and greater self-concept clarity (e.g., Leary, 2003). Interestingly, we feel more authentic when we engage in extraverted behavior (Fleeson & Wilt,

2010). People higher in authenticity are less likely to be social chameleons who present different faces to different people (Leary & Allen, 2011). Moreover, social validation of the authentic self reduces the defensive behaviors that disrupt relationships (e.g., Schimel, Arndt, Pyszczynski, & Greenberg, 2001).

Another important factor is responsiveness. Partner responsiveness to another's self-disclosures results in the other person feeling understood, which contributes to intimacy and perceived social relatedness beyond self-disclosure alone (e.g., Laurenceau et al., 1998). Together, self-disclosure and partner responsiveness facilitate rapport in interactions between unacquainted strangers (Butler et al., 2003) and contribute to feelings of intimacy in dating and married couples (e.g., Lippert & Prager, 2001).

The development of trust is a particularly important process in *intimate* relationships (e.g., dating/marriage) (e.g., Murray, Holmes, & Collins, 2006). In successful intimate relationships, a person comes to trust that their partner loves and values them and experiences a sense of *felt security*. Perceptions of partner love are partly contingent on the belief that one's partner sees positive qualities in one's self. In more positive romantic relationships, people project positivity onto their partner (i.e., believe that their partner values and loves them even at times when the behavioral cues are less clear). Important for our purposes, self-doubts tend to weaken the cognitive and behavioral processes associated with trust. Individuals with negative self-views were found to underestimate their partner's love, although they were actually loved just as much as individuals with positive self-regard (Murray, Holmes, Griffin, Bellavia, & Rose, 2001). Furthermore, individuals who (incorrectly) felt less loved perceived their partners less positively, a tendency that can lead to emotional distancing from the relationship (Murray et al., 2006). In short, people with negative self-beliefs have difficulty fulfilling their need for security and belonging even in relationships with loving, committed partners.

The fear and self-doubts experienced by socially anxious people appear to undermine these critical relational processes. Laboratory studies reveal that socially anxious individuals are less likely to reciprocate the self-disclosure of their conversational partners and, in turn, their partners are less interested in future contact with them (Meleshko & Alden, 1993). Vonken and her colleagues (Vonken, Alden, Bögels, & Roelofs, 2008) used structural equation modeling (SEM) to outline the sequence of events linking behavior to social rejection. Patients with SAD evoked negative emotional reactions in both their conversational partners and objective observers, which led to perceptions of dissimilarity. Together, partners' negative emotions and perceptions of dissimilarity predicted rejection of SAD participants.

The picture that emerges from these studies is that lack of openness shuts off the development of emotional intimacy. It is important to note that this pattern emerges only, or at least more strongly, when socially anxious people are threatened with negative evaluation. When perceived threat is reduced, socially anxious people readily engage in self-disclosure and subsequently elicit the same level of partner liking as nonanxious people (e.g., Alden & Bieling, 1998). These findings

indicate that socially anxious individuals have the ability to be open and friendly toward others but that these behaviors are inhibited when they fear negative evaluation with corresponding relational decrements.

Similar deficiencies in emotional disclosure are also observed in real-life close relationships. Greater social anxiety was associated with avoidance of expressing emotion, lack of assertion, and interpersonal dependency in students' interactions with family and friends (Grant, Beck, Farrow, & Davila, 2007). Furthermore, avoidance of expressing emotions predicted increases in depressive symptoms 1 year later (Grant et al., 2007). Davila and Beck (2002) found similar results with the addition of a tendency to avoid conflict. Emotional distancing is also found in clinical samples. Sparrevohn and Rapee (2009) found that compared to controls, patients with SAD reported lower self-disclosure and expression of emotions within their romantic relationships, even when dysphoria was controlled. Subsequent work suggested that this pattern may be stronger for women (Cuming & Rapee, 2010). Given the role of self-disclosure in creating intimacy, it is not surprising that both a lack of self-disclosure and a lack of emotional expression were associated with lower perceived social support.

Laboratory studies using behavioral observations paint a more complex picture of the intimate relationships of individuals with SAD. Wenzel, Graff-Dolezal, Macho, and Brendle (2005) had couples discuss positive, neutral, and negative topics. During all types of conversations, socially anxious individuals displayed fewer *positive* behaviors (e.g., using feeling statements, providing empathy, and using positive nonverbal behaviors). When discussing problem topics, they engaged in more "very negative behaviors" (e.g., put-downs and blaming). Beck, Davila, Farrow, and Grant (2006) reported that socially anxious individuals experienced more negative affect in response to their spouses' positive behaviors, which bodes poorly for their ability to express happiness at their partner's successes. These researchers also found that relationship satisfaction *moderated* reactions to discussions of problem situations. Specifically, socially anxious participants displayed more negative behaviors (e.g., criticism, rejection, and blame) when they perceived their relationships more positively. The authors concluded that relationships characterized by trust may enhance genuine expression of emotion and self-disclosure in individuals with SAD. This is consistent with the idea that when social threat is reduced, socially anxious individuals are capable of emotion expression, although it would be valuable to study the long-term implications of negative emotion expression. Interestingly, no differences emerged between the behaviors of the partners (Beck et al., 2006; Wenzel et al., 2005), which suggests that any nonnormative emotional expressions were driven by the socially anxious partner.

Safety-seeking and relationships

Having seen that people with SAD can fail to enact the relational building behaviors that lead to emotionally meaningful social bonds, the critical question is why they fail to do so. Cognitive-behavioral theorists propose that individuals with SAD

engage in dysfunctional social behaviors, not because they lack social knowledge or skill, but because a chain of cognitive processes maintains their fears and poisons their social interactions (Clark & Wells, 1995; Rapee & Heimberg, 1997). Specifically, their negative self-beliefs lead to selective attention to threat cues and bias their predictions and judgments about social events, thereby maintaining their fears and negative self-views. For example, individuals with SAD tend to underestimate their social performance and others' liking for them, which seems likely to impede their ability to trust others and emotionally connect with them (e.g., Alden & Wallace, 1995; Rapee & Lim, 1992).

Of particular relevance to the interpersonal realm is evidence that these cognitive processes lead socially anxious individuals to engage in *safety-seeking behaviors* (SSBs), overt or covert acts intended to manage or avert perceived threat and increase a sense of safety (Salkovskis, 1991). Our research group has been particularly interested in how safety-seeking affects interpersonal interactions. Somewhat surprisingly, we found that patients with SAD are able to identify their habitual SSBs – these are not deeply unconscious defenses. The most common safety behaviors reflected themes of avoidance and impression management (Plasencia, Alden, & Taylor, 2011). Avoidance includes such actions as limiting speech, avoiding eye contact, and low self-disclosure, essentially attempting to hide the self. Impression management includes attempts to tightly monitor and control one's behavior, over-preparation (e.g., rehearsing what to say before and during social interactions), and feigned friendliness. These behaviors function to present an *artificial self* that the person believes will be less likely to evoke rejection. Both self-concealment and impression management can be viewed as *relational strategies* (i.e., global behavioral strategies for managing perceived social threats).

Importantly, both strategies were associated with negative social outcomes. Conversational partners of patients who used avoidance were less interested in future interactions, which supports the idea that avoidance leads others to disengage from closer relationships. Reliance on impression management, in contrast, resulted in higher estimated costs of future negative outcomes; that is, these individuals felt they had more to lose if they were unable to maintain the facade the next time they talked with their partner. Notably, both strategies were associated with a subjective sense of inauthenticity (i.e., the person recognized that their behavior was *fake*). In light of relational research underscoring emotional expression and authenticity, these behaviors clearly would be expected to impede relationship development. Further, even if interactions go well, one would expect little change in the negative self-views at the root of SAD since any positive feedback would not pertain to the genuine self.

To directly examine the effects of reducing SSBs on social outcomes, we asked one group of patients with SAD to eliminate their SSBs prior to a second interaction with a conversational partner (Taylor & Alden, 2010, 2011). It is notable that the overwhelming majority of patients were able to do so. Moreover, their partners' perceptions of them changed for the better and they became more interested in

subsequent interactions, whereas no improvement in social outcomes was observed for controls (Taylor & Alden, 2011). Thus, safety behaviors appear to link negative self-beliefs to poor relational outcomes. If individuals with SAD can be helped to recognize that they are not deeply flawed but rather that their adoption of safety strategies emotionally isolates them from other people, they may be able to alter those patterns and establish the close relationships they need to lead more satisfying lives (Alden & Taylor).

Future Directions

A theme running throughout this chapter is that social anxiety and SAD impede the types of proactive social behaviors essential to the development of close relationships and a sense of social relatedness. Extant research has tended to focus on reducing negative behaviors, avoidance, safety-seeking, and so on, assuming that reducing anxiety and avoidance will spontaneously increase social approach behaviors. We need to evaluate that assumption and to consider whether our interventions might benefit from incorporating strategies that enhance key relational behaviors like social initiation, self-disclosure, and empathic awareness of others. Relational and interpersonal research has identified basic principles and processes critical to good relational functioning that might guide our efforts. Given increased awareness of social anxiety in children and adolescents, another direction for future work is to identify interventions targeted at these groups in order to prevent the harm arising from severe social anxiety and to help these young people develop satisfying friendships that help to overcome their emotional isolation.

Summary

In this chapter, we have attempted to articulate the relational difficulties associated with social anxiety and SAD across the lifespan and also to explain how people with SAD unwittingly engage in behaviors that interfere with authentic self-expression and short-circuit relationship development, thereby cutting off the social connections that might modify their negative self-beliefs and fears. The end result is that they often live in a state of emotional solitude – alone in the crowd.

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Loneliness and Social Isolation in Children with Autism Spectrum Disorders

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Autism spectrum disorders (ASD) are a group of developmental disorders (autism, Asperger syndrome, and pervasive developmental disorder not otherwise specified) characterized by impairments in communication and social interaction and restricted repetitive and stereotyped patterns of behavior, interests, and activities. Difficulties with social interaction are considered the core feature of ASD and impact multiple aspects of daily life, including the ability to establish and maintain relationships with others. Some individuals with ASD may seek relationships but do not have the skills needed to successfully engage with others; on the other hand, some individuals with ASD may prefer to be alone and do not appear motivated to establish relationships with others. Both scenarios could result in aloneness.

In his description of 11 children with autism, Kanner (1943) noted that “There is from the start an extreme autistic aloneness that, whenever possible disregards, ignores, shuts out anything that comes to the child from the outside” (p. 242). Contact with people was seen as an interference that was dealt with quickly so that the child could “return to the still much desired aloneness.” “Profound aloneness dominates all behavior” (p. 247).

Kanner’s early observations suggested that aloneness was a *desired* state for children with autism. The children appeared to have a good relationship with objects, but not with people. Indeed, the parents of Donald (Case 1) described him as “happiest when left alone” (p. 218).

The distinction between aloneness and loneliness is critical for understanding children with ASD. As with the case of Donald, aloneness and/or social isolation can be a situation that is pleasurable, similar to when an individual seeks solitude or a desirable state away from the presence/interference of others (Galanaki,

2004). Indeed, this appears to be what Kanner implied when describing the behavior of children with autism.

Loneliness, on the other hand, results from negative, undesirable feelings of being alone (e.g., without relationships) or dissatisfaction with one's current relationships (Margalit, 1994; Perlman & Peplau, 1982). Loneliness implicates social desire or a need for contact with others. Thus, a critical distinction between aloneness and loneliness has to do with perceptions about one's relationships. To feel lonely, one must feel that something is missing, perhaps between desired and actual relationships. But aloneness does not have this requirement. From Kanner's descriptions, it seems clear that many children with autism do not have *social desires* for relationships with people and therefore would likely not feel lonely.

Theoretical Basis of Loneliness

The cognitive discrepancy model of loneliness (Perlman & Peplau, 1982) suggests that individuals develop a personal expectation against which they judge their relationships. Simply interpreted, this model suggests that if an individual's relationships are less than the standard they have set for themselves (their own internal representation), they feel dissatisfaction with their relationships and can experience feelings of loneliness. Thus, the discrepancy between desired and actual friendships can result in feelings of loneliness.

According to Weiss (1973), there are two basic types of loneliness, emotional loneliness and social-cognitive loneliness. Emotional loneliness refers to feelings related to a poor affective bonding with others, resulting in feelings of emptiness and sadness. Social-cognitive loneliness is related more to self-perceptions and social comparison as suggested by the cognitive discrepancy model earlier. Loneliness due to social-cognitive factors may include feeling dissatisfied with relationships, not having access to a peer group, or being excluded or marginalized from peer groups. When asked to define loneliness, typical school-aged children often cite both forms of loneliness – that of being alone, being left out, and also feeling sad (Asher & Wheeler, 1985; Renshaw & Brown, 1993).

Loneliness and Autism

The theoretical perspectives described earlier have a number of underlying assumptions. For example, to feel lonely, children must be missing something in their relationships with others. At a very basic level, children must desire and seek out relationships, especially friendships, and they need to understand the discrepancy between desired and actual friendships. Ultimately, they must possess the ability for social comparison, which relies on an understanding of self, different from others (Lee & Hobson, 1998).

This ability to differentiate self from others is central to understanding loneliness in autism. Autism involves impairment in self-other perceptions, particularly in viewing self in relation to others (Capps, Sigman, & Yirmiya, 1995; Lee & Hobson, 1998). This has been described as a difficulty differentiating oneself from others (perhaps contributing to the often observed challenge in using personal pronouns), which is also related to a lack of self-consciousness, self-reflection, and self-concept (see Lee & Hobson, for review). As a result, children with autism may not consider themselves in terms of their relationships with others, and they may less often see themselves as a friend to others (Locke, Ishijima, Kasari, & London, 2010). Thus, studies of loneliness in children with ASD must be examined in light of their understanding of their relationships in general and friendships in particular.

In this chapter, we present the results of studies that have examined the construct of *loneliness* in autism, and then we consider these findings in light of studies with children with ASD in terms of their understanding and self-perceptions of friendships, their reported quality of friendships, and their reciprocity and connectedness to social networks. We next describe the potential negative sequelae of poor peer relationships, including loneliness, anxiety, and depression in older children with autism, and the potential for early prevention and intervention efforts.

Understanding and Endorsing Loneliness in Autism

A first question is whether children with autism understand the meaning of loneliness. In a study of highly verbal 8- to 14-year-old children with ASD, children with ASD defined loneliness more in terms of the social-cognitive qualities (no one around, no one to play with) than the affective/emotional (sadness) qualities (Bauminger & Kasari, 2000). The identification of social-cognitive qualities was similar between children with ASD and typical children matched on gender and age; however, children with ASD were less likely to refer to the emotional dimension. Only 30% of children with ASD included both qualities (emotional and cognitive) in their definitions of loneliness compared to 74% of matched typical children. The implications of this study are that children with autism may have an incomplete understanding of loneliness.

However, when children were asked to give a specific and personal example of loneliness, the differences between children with and without autism were nonsignificant. In both groups, about 10% of children could not think of an example. Of children who did give examples, they were mostly similar in terms of the locus of control (internal, e.g., I don't know how to make friends, so I am lonely, versus external, e.g., children make fun of me, so I am lonely), presence of an audience (e.g., I feel lonely when the other boys are playing handball at recess), and general versus specific descriptions (reflecting whether children can describe a time that they felt personally lonely rather than a general example; e.g., I feel lonely when I am by myself) (Bauminger & Kasari, 2000; Seidner, Stipek, & Feschbach, 1988). Thus, children with and without ASD were similar in the attributes they assigned

to loneliness; this finding is in contrast to other emotional states especially those that are socially derived (e.g., pride and embarrassment), in which children with autism were less likely to give a personal example of an emotion, more often relying on rote or scripted responses (Capps, Yirmiya, & Sigman, 1992; Capps et al., 1995). This may reflect a greater understanding of loneliness attributes compared to other emotions or the difficulty both groups have in defining loneliness.

A number of factors could influence how children with ASD understand loneliness. These include individual differences such as age and the degree of cognitive impairment as well as personal histories. Developmental age is an important factor affecting whether all children can identify feelings of loneliness. Using a loneliness self-report scale (Loneliness Rating Scale; Asher, Hymel, & Renshaw, 1984), Chamberlain, Kasari, and Rotheram-Fuller (2007) found that most 7- to 9-year-old children with or without autism did not endorse loneliness at school. It may be that these young children indeed are not lonely; on the other hand, it may not be a construct they completely understand until they are much older. On the same self-report measure, studies of older high-functioning (i.e., with IQ in the average to above average range) adolescents with ASD find they often report more loneliness compared to same-aged typical adolescents (Bauminger & Kasari, 2000; Locke et al., 2010; Storch et al., 2012; Whitehouse, Durkin, Jaquet, & Ziatas, 2009). These findings suggest there may be developmental changes in the way children with ASD understand or feel loneliness, although longitudinal studies have not been conducted.

Because the ability to feel lonely likely requires the development of social comparison, knowledge of desired and actual friendships, and an understanding of one's own standing within their social milieu, children with ASD may experience loneliness later in development relative to children without ASD. Alternatively, loneliness may occur later for children with ASD because they have experienced a history of many negative social interactions. For example, some reports indicate that children with ASD are at increased risk of peer victimization and bullying and feel the need to *masquerade* as if they were normal to fit in, creating a great deal of stress on the individual (Carrington, Templeton, & Papinczak, 2003; Humphrey & Lewis, 2008). After time, a pattern of repeated rejection and victimization may contribute to the development of loneliness. Better understanding of these social interactions, particularly within the context of friendships, may inform our understanding of how children and adolescents with ASD perceive themselves in relationships and how they experience loneliness.

Autistic Children's Understanding and Self-Perceptions of Friendships

As noted earlier, one distinction between aloneness and loneliness involves one's perceptions about their own relationships. Loneliness depends on the feeling that something is missing or that there is a discrepancy between desired and actual

friendships. To explore this phenomenon in ASD, the self-perceptions of peer relationships in children and adolescents with ASD must be fully understood. There is some evidence to suggest that individuals with ASD experience a shift in self-perception of friendships over time.

Identification of friends

Despite the fact that older individuals with ASD report not having friends, younger children often identify friendships. In three studies, we found that the majority of children with autism could identify their top three friends, including a best friend (Bauminger & Kasari, 2000; Chamberlain et al., 2007; Kasari, Locke, Gulsrud, & Rotheram-Fuller, 2011). In most studies, only a very small percentage of school-aged children could not identify any friends in their classroom.

There are, however, some discrepancies between the numbers of friends children with ASD nominate and the numbers of friends that others (parents, peers) agree are friends. For example, in the Bauminger and Kasari (2000) study, parents reported *more friends* than did their children with ASD. Follow-up comments from mothers indicated that the friends they named were often more desired than actual friends, as evidenced by the interactions between the children. For example, while the children might engage in joint activities, their child with ASD mostly ignored the other child. In this case, the child with autism was likely more accurate than their parents in distinguishing between a friend and an acquaintance. Perhaps parents were unaware of the true social intricacies and nature of their children's relationships; alternatively, their reports may have reflected optimism regarding their children's friendships.

Peer nomination studies also yield conflicting evidence of friend nominations for children with ASD in the school setting. In a sample of second and third grade children, Chamberlain et al. (2007) found that children with ASD nominated *more children* in the class as their best friends than did their classmates. However, in a sample of first to fifth graders, Kasari et al. (2011) found the opposite. Children with ASD nominated *fewer classmates* as friends than did the other children in the class. Findings from both studies may reflect limited awareness and inaccurate perceptions regarding the social milieu or structure in their classes, and difficulty recognizing when peers initiated to them or when peers were available as potential friends (Kasari, Rotheram-Fuller, Locke, & Gulsrud, 2012). The overall number of nominated friends does appear to decrease with age for individuals with autism. Several reports indicate that adolescents and adults with ASD nominate few friends with nearly half indicating they have no friends at all in late adolescence and adulthood (Howlin, Goode, Hutton, & Rutter, 2004; Orsmond, Krauss, & Seltzer, 2004). The developmental shift may reflect a change in perception of friendship rather than in actual number of friends. And awareness of having fewer friends could impact their feelings about relationships and their perception of loneliness.

Self-perceptions: Meaning of friend and *self as friend*

It is possible that the concept of a friend is not well developed in children with ASD. Lee and Hobson (1998) note that children with ASD are less likely to view themselves in relation to others. Thus, they may less often see themselves as a friend or consider themselves in terms of their relationships with others. These self-perceptions (or lack of self-understandings) likely contribute to their feelings of friendship quality, loneliness, and reciprocity in their relationships with peers.

Some researchers have commented that adolescents with autism see friends as a stressful, difficult part of growing up (Carrington et al., 2003; Humphrey & Lewis, 2008). According to adolescents with ASD, a friend is someone with whom one interacts without too much conflict (Carrington et al.). They are there, but perhaps not sought after, or necessary for one's happiness. When asked to define *what is a friend?*, children with ASD between 8 and 14 years of age define a friend as being a companion, someone who cares about you, and someone you can tell secrets to. However, in general, the children with ASD were less likely to include all three dimensions of friendship (companionship, intimacy, and affection) compared to typical children (Bauminger & Kasari, 2000).

When adolescents with autism in high school are asked to define a friend, they too can identify elements such as security and intimacy (Locke et al., 2010). Desired qualities in a friend included someone who is kind, patient, trustworthy, and helpful. Yet when asked about their own qualities as a friend, these adolescents with ASD commented on their talents and abilities, "I am really smart" and "My knowledge about cars." When asked what they did not like about themselves, these adolescents with ASD identified personality characteristics, such as impatience, intolerance, and temper, the opposite of the qualities they wanted in a friend. Thus, they appear to have a negative view of their own qualities to be a friend (Locke et al.).

Friendship Quality and Reciprocity

Poor quality and the lack of reciprocity in a relationship can contribute to dissatisfaction in friendships, ultimately contributing to loneliness. It has often been reported that even a single friend can protect a child from loneliness (Ladd, Kochenderfer, & Coleman, 1996). In nearly all of our studies of school-aged children with ASD, the majority of children can identify at least one friend or multiple friends in their class. Despite being able to identify a friend, children with ASD, particularly over age 9 years, report more loneliness than do children without ASD (Bauminger & Kasari, 2000). Thus, the mere presence of a friend does not appear to lessen feelings of loneliness for children with ASD. Having a good friend may not mitigate the negative feelings associated with loneliness because the friendship may not be truly reciprocated or mutual and/or the friendship may be of poor relationship quality.

Reciprocity

An important consideration in friend nominations is reciprocity (e.g., whether a child's friendship nomination is reciprocated), which may be a protective factor in the development of loneliness. Most studies in children and adolescents with ASD are limited in their evidence regarding friendship because the authors did not gather friendship nominations as in the Bauminger and Kasari (2000) study, in which only parent reports of friendship were available. However, in two studies (Chamberlain et al., 2007; Kasari et al., 2011), peer nomination data at the classroom level was obtained. In both studies, when children named their friends in the classroom, reciprocity was lower for children with ASD than for typical peers in the classroom. Depending on the study, 18–34% of children with ASD received reciprocated nominations as friends, compared to 60% for typical peers (Chamberlain et al., 2007; Kasari et al., 2011). While these low rates of reciprocity for children with ASD are concerning, it has long been believed that children with ASD may have reciprocal relationships with friends who are outside of their classroom, although this issue has not been thoroughly tested. To this end, school inclusion with typical age-mates has sometimes been associated with more mutual friendships (Bauminger et al., 2008) or making little difference in increasing friendships (Orsmond et al., 2004).

Friendship quality

As mentioned previously, in most studies, nearly all children with ASD can identify a best friend. When they rated the quality of this friendship, however, the quality was rated lower than gender- and age-matched typically developing children. The finding of poorer relationship quality has been consistently found for younger (Chamberlain et al., 2007; Kasari et al., 2011) and older children with ASD (Bauminger & Kasari, 2000; Whitehouse et al., 2009). In most situations, the quality of companionship and helpfulness are lower than what typical friends report (Bauminger & Kasari, 2000; Locke et al., 2010). One study found increased endorsement of conflict (Whitehouse et al.), although others have not (Bauminger & Kasari, 2000; Chamberlain et al., 2007; Locke et al., 2010). Thus, children with ASD across ages appear to view the quality of their best friendships more poorly than do typical children of their best friendships. It may be that lowered friendship quality contributes to children's feelings of loneliness at school.

Feelings of Belonging and Social Connectedness

The academic environment of the general classroom has been less of a challenge to most children with ASD than has been the difficulty in navigating the social challenges (Mayes & Calhoun, 2008). There have been several recent studies on the social inclusion of children with ASD in school. Inclusion refers to the idea that all

children, including those with ASD, should be included in regular classrooms, whereas non-inclusive settings refer to the separation of children with ASD in specialized/self-contained classrooms in order to provide them with special help or support as needed.

Some researchers have advocated the inclusion setting as preferable for improving social outcomes, while others have expressed caution. Some studies find that children with autism demonstrate their motivation for friendships and social inclusion by interacting mainly with typical peers in the inclusion setting, making regular initiations toward them, but feeling lonely from unsuccessful attempts (Bauminger, Shulman, & Agam, 2003). Still such friendships seem to offer benefits to students with autism. For instance, Bauminger et al (2008) found that children with autism and with friendships with typical peers, rather than peers with a disability, displayed more social responsiveness, stronger receptive language skills, greater positive social orientation and cohesion, and more complex coordinated play.

Views of peers and social networks

Some children with ASD are able to form friendships, but it is important to emphasize that peers are not always accepting of children with ASD. Swaim and Morgan (2001) showed third and sixth graders video clips of a typical 12-year-old boy who, in one clip, acted normal and, in the other, acted *autistic*, through characteristic behaviors such as gaze aversion, rocking, hand flapping, and echolalia. Sometimes the boy was given a label of autism and other times he was not. Children rated the boy in the video acting *autistic* less favorably regardless of whether they had a label for his behavior. However, when children are given both descriptive and explanatory information about the child with autism's behavior, their intentions toward the child are improved (Campbell, Ferguson, Herzinger, Jackson, & Marino, 2004), suggesting that understanding why a child behaves in a certain way may help mitigate negative interpretations of their actions or cause children to be more accepting.

Actual experiences with children with ASD also may result in more positive views. In studies of inclusive classrooms of elementary-aged children with ASD, only a small percentage of children were actually isolated (or neglected) in the classroom social networks (Chamberlain et al., 2007; Kasari et al., 2011). Most children were at least marginally connected to other children, most often peripheral to the main social groups in the classroom. Thus, they were often connected to groups of children by just one or two children. Another small percentage of children were nominated to the popular social group, suggesting a great deal of variability in the social position of children with ASD within their classrooms.

However, in classrooms with older children with ASD, some studies find that children with ASD are more rejected than other children (Church, Alisanski, & Amanullah, 2000; Locke et al., 2010), and there are qualitative reports that children with ASD are frequently targeted for harassment or bullying (Humphrey & Lewis, 2008). There are a number of reasons why children with ASD may be bullied,

including behavior problems, social skills deficits, and social vulnerability (Sofronoff, Dark, & Stone, 2011). Future studies should examine the issue of rejection and isolation and the potential impact on loneliness more closely and over time as these issues may surface more with older children or in the context of less cohesive and supportive classrooms.

Influence of self-perceptions on connections with peers

Not only do peer perceptions affect the social connectedness of children with ASD, but so do the child's own self-perceptions. Some children with autism manage to develop and maintain close friendships with typical peers, and over time these friendships build into informal support for the child with autism's needs, as good friends naturally accommodate and support one another (Bauminger et al., 2008). These friend dyads can still have mutual difficulty understanding and supporting one another, however. The child with autism's quirks can provide selective strengths as a friend, such as original thinking rather than passively following a crowd, not playing games of social hierarchies, and lacking strong material interests (Brownlow, 2010). Despite these strengths, the friendship often operates at lower levels of engagement states, with more parallel relative to coordinated play and less shared fun, closeness, intimacy, and help (Bauminger et al., 2008).

Apparent preferences for typical peers may relate to the individuals with autism's significant amount of self-awareness about their differences, for which they self-report a tendency to stigmatize as an obstacle to their social goal of fitting in (Humphrey & Lewis, 2008). Especially for children with higher intelligence, the self-doubt seems more present. Knott, Dunlop, and McKay (2006) report that children with high-functioning autism or Asperger syndrome rate themselves far below typical age-mates in social skills and social competence, such as the ability to develop a close friendship. These children often have little confidence in their own social abilities. Indeed, because children with ASD who have higher intelligence and social skills stand out less, they may be at risk for more mistreatment by peers, as the invisible nature of the disability may render an appearance of being unacceptably odd rather than as having a disability.

Summary

Peer relationships are critical in children's feelings of isolation and loneliness. From the extant literature on peer relationships of individuals with ASD, there are several key findings. First, nearly all children with ASD can identify a friend, and most are connected at least peripherally with social networks at school. Thus, children with ASD appear to have the social desire to be involved in peer relationships, and reports from older individuals and their parents suggest that obtaining friends is very important in their lives. However, as a result of dissatisfaction with the quality of these relationships, and perhaps the stress that accompanies difficulties in understanding

the social nuances of relationships, children with ASD report more loneliness. Loneliness increases at older ages, likely because of increased self-reflection and social comparison and perhaps due to accumulated negative peer interactions. These negative self-perceptions and expectations can serve as *risk factors* for the development of loneliness, consistent with the cognitive discrepancy model. Further, significant and persistent loneliness can lead to further negative outcomes.

Potential Negative Sequelae of Loneliness

Mild levels of loneliness are viewed as potentially motivating for typical children to seek friendships (Parker & Asher, 1993); however, loneliness is also related to depression. While loneliness and depressive symptoms influence one another reciprocally in the adolescent years (Vanhalst et al., 2012), there is evidence to suggest that depression in adolescence may be a negative outcome of loneliness in early childhood. For example, parent- and peer-rated loneliness at age 8 has been found to predict depressive symptoms at age 13 (Qualter, Brown, Munn, & Rotenberg, 2010). Similarly, high probability of being isolated from social cliques at age 11–13 years predicts depressive symptoms at age 14 years; this association is mediated by loneliness (Witvliet, Brendgen, van Lier, Koot, & Vitaro, 2010). This developmental trajectory suggests loneliness could be a risk factor for the development of depression in later life.

Unfortunately less is known about the relationship between loneliness and depression among youth with ASD, especially in the adolescent years. Puberty has been associated with increased problems among individuals with ASD including development of psychiatric symptoms such as depression (e.g., Simonoff et al., 2012). It may be that social isolation and loneliness contribute to the development of psychopathology, including depression, as it does in typically developing youth. However, no studies to our knowledge have investigated the developmental trajectory of depression in ASD, particularly whether loneliness precedes it in early childhood. Adolescence itself may confer psychological risk for individuals with ASD, given increased demands on social adaptation and daily living skills in combination with neurohormonal and physical changes.

Loneliness may become particularly salient for adolescents with ASD who have experienced a pattern of repeated social failures. This is likely to emerge as social interaction becomes more desirable (as the result of intervention or maturation) and the gap between themselves and their peers becomes more evident. Increased awareness of these failures and differences may contribute to negative feelings; for example, in a study of 39 adolescent boys with ASD, 21% reported often or always feeling lonely (Lasgaard, Nielsen, Eriksen, & Goossens, 2010). Perceived social support was negatively correlated with loneliness, suggesting this may be a protective factor and target for intervention. Social rejection and awareness of shortcomings can impact self-esteem, promote social isolation, and increase risk

for psychopathology, especially depression and anxiety (Capps et al., 1995; Butzer & Konstantareas, 2003). Social pressures can cause adolescents to self-isolate, perhaps contributing to the development of psychopathology; in turn, development of psychiatric conditions such as anxiety and depression can actually exacerbate core behaviors related to ASD (e.g., Magnuson & Constantino, 2011), promoting further social isolation.

Alternatively, individuals with ASD may socially isolate without perceiving themselves as being lonely. In a review of the literature on older adults with ASD, Happe and Charlton (2012) suggest that a subset of individuals may be *protected* from some of the negative outcomes of social isolation if they had not established social networks through their work environment or friendship groups (i.e., the loss of or change in these networks would therefore not impact them). Perhaps in certain individuals, less awareness of perceived differences and decreased motivation to socialize with others serve as protective factors from the negative outcomes associated with loneliness. The authors also go on to note that for individuals who have established few friendships but have close family connections, shrinking family networks over time may be particularly impactful. More longitudinal research is clearly warranted in this area to determine the long-term effects of social isolation and loneliness and which individuals are at greatest risk for the development of associated problems (e.g., depression) as a result.

The field may benefit from modeling studies after the typically developing literature, that is, examining loneliness in a longitudinal framework to fully understand the potential impact in ASD (see Goossens, Chapter 9, this volume). Other aspects of social engagement should be included in these investigations, including perceived social support, since it appears to mediate the relationship between loneliness and depression among typical youth (Nangle, Erdley, Newman, Mason, & Carpenter, 2003; Witvliet et al., 2010). Given possible limitations in self-awareness and ability to report emotions, multiple informants may be beneficial. Moreover, given the propensity for loneliness in early life to contribute to the development of depression and other psychiatric symptoms, it may be useful for interventions to target both loneliness and depression in youth with ASD. A review of five randomized controlled trials for social skills groups in individuals with ASD ages 6–21 years indicates these studies may result in decreased loneliness, but have no effect on depression (Reichow, Steiner, & Volkmar, 2012). More targeted treatments are warranted to fully address the negative outcomes potentially associated with loneliness.

Potential for Prevention/Interventions

Peer experiences

The development and maintenance of friendships can lead to a sense of connectedness and belongingness, potentially protecting children from isolation and loneliness (see Bukowski & Verroneau, Chapter 2, this volume). Friendships

develop out of repeated experiences with peers where shared interest, mutual caring, and negotiation can grow. One issue for children with autism is the reduced number of experiences they have with peers, thus limiting the amount of time they are engaged with their peers and the number of opportunities they have to learn from these interactions. Even in the presence of other children, children with autism may not fully benefit from peer exposure. As noted by Kanner (1943), children may not notice others in the midst of children playing around them. Similarly on playgrounds filled with children, the child with ASD may be isolated or playing alone; it is not uncommon to find the child with ASD running the periphery of the yard. At times other children may be playing in the same area and even in the same activity, but the child with autism will make few attempts to engage with another child or to respond when bids from the other child are made to him or her (Sigman et al., 1999). The children with ASD may distance themselves from interactions and not take advantage of the social opportunities around them. This may explain the finding that children in inclusive settings may not develop friendships despite a great deal of exposure to typical children and presumably good social models (Orsmond et al., 2004). Thus, placing a child in a situation that will provide frequent peer experiences, as implied by inclusive school practices, may not be realized unless there are active attempts at engaging the child with ASD. Inclusion alone as a preventative practice may need further study for its effects on children with ASD.

To date, we have little evidence that children with ASD improve in their social acceptance and involvement in peer relationships without some type of intervention. There are three basic types of interventions. These include the support of an adult assigned to the child during school, peer-mediated interventions, and social skills groups.

Adult paraprofessional as support

A common intervention for children with ASD in inclusive programs is to assign the child to a paraprofessional assistant (e.g., shadow teacher). While the adult is expected to help the child in times of need, they are often explicitly told to fade away, to be in the background so as not to mark or stigmatize the child with ASD. Often, however, this appears to be precisely what happens. Individuals with ASD may view these support services as accentuating their stigmatized differences or as generally unhelpful (Humphrey & Lewis, 2008).

In a study of elementary students with ASD, nearly 60% of the children had a 1:1 paraprofessional aide to help them during recess. Observations of peer engagement during recess by independent observers found that children with ASD who were assigned an aide were the least engaged children on the playground. They were not engaged with peers or even with their assigned aide (Kasari et al., 2011). Thus, these data raise questions about the usefulness of assigned aides for the purpose of social inclusion.

Peer-mediated interventions

For most children with ASD, the support from peers provides a powerful intervention to increase social inclusion. This social support from classmates protects against peer victimization in this population, offering a more powerful shield than social support from adults, such as teachers or parents (Humphrey & Symes, 2010). Peer social relationships thereby offer critical resilience to children with autism, who overwhelmingly experience frequent peer victimization (Little, 2001) and who sadly self-report that they come to expect it (Tobias, 2009). Children with autism appear especially sensitive to the effects of ridicule, as they commonly fear being laughed at, which positively correlates with the frequency and severity of remembering past mocking experiences (Samson, Huber, & Ruch, 2011). Their social-cognitive difficulties exacerbate this vulnerability, as children with autism often misunderstand playful banter behaviors as critical teasing and the friendly cues that teasing can convey (Heerey, Capps, Keltner, & Kring, 2005).

Peer-mediated interventions involve other students (usually typically developing) taking an active, supportive role with their classmates with ASD by helping to increase social opportunities within the school setting. These interventions appear to increase children's social connections in the classroom to a greater extent than adult-child interventions (Kasari et al., 2012). While these interventions can help connect children to social groups, significant modification is needed to successfully engage children on the playground. Elementary-aged children with ASD in peer-mediated interventions decreased their levels of isolation on the playground, but were unable to increase the amount of time they were jointly engaged with others, suggesting specific playground interventions may be needed. Moreover, these interventions need further study for their potential to increase reciprocity of friendships and lessening of loneliness at school.

Another perspective to peer experiences comes from the notion of homophilic affiliation, in which individuals choose friends who are similar to them in social and demographic characteristics (Farmer & Farmer, 1996). Such a theory argues for children with ASD to develop closer friendships with children who are more like themselves. Indeed, Locke et al. (2010) found that children with ASD clustered together in an integrated drama class and were friends with each other rather than the typical children in the class whom they knew well. Such findings raise questions about the expectations of parents and teachers for children to develop friendships in classrooms in which they are the only student with ASD. To this end, social skills groups of children who share similar social difficulties have demonstrated some success in increasing friendships among the children with ASD, although the long-term effects have not been tested (Laugeson, Frankel, Gantman, Dillon, & Mogil, 2012).

Social skills interventions

There has been a proliferation of social skills interventions in the past 10 years (Kasari & Lawton, 2010). Most of these are carried out in clinics, often composed of groups of individuals with ASD. The typical model is a structured didactic

group therapy session followed for 12–16 weeks. Although these groups have been helpful in reducing associated features such as anxiety (Chalfant, Rapee, & Carroll, 2007), the generalization and long-term effects of social skills training have been poor (Bellini, Peters, Benner, & Hopf, 2007). In particular, generalization to school settings where children are experiencing the most difficult social situations is either limited or untested.

There is also debate in the field and from individuals with ASD as to the usefulness of social skills interventions (Kapp, Gillespie-Lynch, Sherman, & Hutman, 2013). Indeed, not all children with ASD need or desire an intervention for their social difficulties; and, as noted earlier, children with ASD may choose to self-isolate but not be at risk for experiencing loneliness. At older ages, adolescents and adults can determine for themselves the extent they wish to work on relationship-related skills. For younger children, whose parents or teachers may request social skills interventions, obtaining information from several sources can help gauge the type and intensity of these interventions. Information from the child, peers, parent, and teacher along with observations greatly informs the need for intervention (Kasari et al., 2011). Perhaps future work elucidating the relationship between social skills difficulties, social isolation, and loneliness will facilitate individualization of social skills intervention with the goal of mitigating loneliness for those individuals at greatest risk.

Conclusion

Loneliness is a significant problem for individuals with ASD and differs from their tendency to self-isolate or seek aloneness. Future studies need to determine the extent to which loneliness changes over time and/or results from experiences that children with ASD have with peers. Longitudinal designs are needed, as well as the development of interventions that can function to prevent some of the negative consequences of poor peer interactions and feelings of marginalization and loneliness.

Finally, we may be able to learn from some of the positive outcomes that individuals with ASD achieve in terms of their peer relationships and friendships (Cederlund, Hagberg, Billstedt, Gillberg, & Gilberg, 2008; Szatmari, Bryson, Boyle, Streiner, & Duku, 2003). Some are not lonely, nor isolated, and indeed have satisfying personal relationships. Thus, there is an important place for descriptive studies that highlight positive practices and outcomes among individuals with ASD and that might yield keys to an individual's successful adaptation.

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Solitude and Personality Disorders

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The experience of aloneness is central to our human experience. Solitude researchers distinguish *aloneness* from negative subjective states, such as loneliness or depression, or defensive behaviors, such as isolation or withdrawal (Katz & Buchholz, 1999). Solitude-seeking behaviors are not necessarily pathological or adaptive; abundant research suggests that aloneness is neither a necessary nor sufficient condition for the feeling of loneliness (Buchholz & Catton, 1999; Long & Averill, 2003; Richman & Sokolove, 1992; Suedfeld, 1982). People who seek solitude are not necessarily withdrawn or asocial; many people pursue solitary activities because of a specific desire for solitude (Leary, Herbst, & McCrary, 2003). When individuals enter the state of solitude, whether they are able to benefit or suffer from the experience depends upon their unique personality facets elaborated throughout development. In particular, the quality of one's internal resources is central in determining whether one is able to endure and benefit from the experience of being alone.

Individuals with personality disorders, despite differing greatly in terms of their manifest presentation, often have a conflictual relationship toward a desire for closeness and relatedness on the one hand and distressing experiences of isolation on the other (Blatt, 1995). Further, a number of the personality disorders are characterized by painful experiences of loneliness. Despite the conflictual relationship toward aloneness within personality disorders, there have been surprisingly few links made between these disorders and solitude research.

In this chapter, we will integrate the literatures on solitude and personality disorders through the more robust literatures linking each to the development of secure and reliable mental representations. Classic and recent psychological theories and research on personality development emphasize the quality of one's internal representations as central in determining whether one benefits from the

experience of being alone. Individuals with personality disorders may struggle with the capacity to be alone due to disruptions in the internalization of representations of consistently present and reliable others.

First, we will discuss personality and the nature of personality disorders. We will then discuss personality development and the central role of internalizing secure mental representations in achieving the capacity for aloneness (Winnicott, 1958). Theory and research illustrating how individuals with personality disorders struggle to consistently evoke secure mental representations will be presented (Blatt, 1995). We will then discuss how solitude is experienced and behaviorally expressed in a variety of personality disorders based on that disorder's core deficits in identity and relatedness. Finally, we will discuss future directions for theory and research.

Personality and Personality Disorders

Personality, an umbrella concept that encompasses the dynamic organization of psychological functioning, refers to enduring patterns of thoughts, feelings, and behaviors that are expressed in a variety of circumstances (Mischel & Shoda, 1995). Our personalities are a complex interaction of temperament, internalized experiences, and evolved behavioral patterns shaped by our interpretation of these attributes and the consequences of our life choices. Personality is dynamic in that it is in constant interaction with biological predispositions, schemas of oneself and others, evolved affective and behavioral patterns, and the demands of the external world. Central to how we experience our personality is the organization of our internal representations (Blatt, 1995; Kernberg, 1975). At the beginning of life, all experiences are relatively undifferentiated, unintegrated, and unorganized. Over time, with development and maturation of cognitive and affective systems, there is an increasing differentiation, integration, and hierarchical organization of our schemas of self and our world. The quality and organization of our personality structure strongly influences our capacity to access, retrieve, and flexibly use pertinent schematic information. The more quickly and flexibly that we can retrieve and utilize internal schemas to make sense of our world, the better we are able to regulate our emotions and maintain a coherent self-experience. Healthy individuals flexibly react to different circumstances in context-appropriate ways, paving the way for the capacity to create, enjoy life, develop intimacy, and invest in goals and relationships. In contrast, when internal representations are limited in breadth and rigidly applied, the more difficult it becomes to regulate our emotions and maintain a coherent self-experience. In the absence of a capacity to adaptively process and respond to affectively valenced information, we are likely to feel unmoored by novel contexts and respond to them as if they are old ones.

Personality disorders involve chronic, long-standing traits and patterns of responding to distress that are often limited in variability and rigidly applied regardless of appropriateness to context (Bender & Skodol, 2007; Shedler &

Westen, 2004). Because such personality patterns tend to enact the very experiences trying to be avoided by the individual, these patterns come to define that individual's experience (Wachtel, 1997). Thus, in personality disorders, the ways the individual thinks, feels, acts, and relates to others directly restrict the capacity to work, pursue goals, and enjoy intimate relationships.

Although conceptualizations of personality disorders are diverse and have evolved over time, most models conceptualize these pathologies as primarily disorders of self and relatedness (e.g., Blatt, 1995; Fonagy, Gergely, Jurist, & Target, 2002; Kernberg, 1984). In fact, the criteria specified for each of the personality disorders in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV-TR; American Psychiatric Association [APA], 2000) centrally describe problems with sense of identity and/or interpersonal problems. For example, impoverished interpersonal relationships are a cardinal feature of both schizoid and avoidant personality disorders; such individuals prefer to be alone and often seek solitude. Central to both dependent and borderline personality disorders are difficulties with aloneness as well as preoccupation with fears of abandonment and the dissolution of close relationships (Gunderson, 1996; Zanarini et al., 2007). Histrionic and narcissistic individuals often need to be the center of attention and have difficulty not being admired by others.

In the *DSM-5* (2013) "Alternative Model for Personality Disorders", self and relatedness have become core aspects of the proposed definition of a personality disorder, with symptoms organized along these two domains. For example, the proposed criteria for borderline personality disorder (BPD) evaluate problems in self-functioning – particularly identity diffusion feelings of emptiness – and interpersonal functioning. It is important to note that these problems of self and relatedness are not separate but rather highly interdependent and have a cyclical relationship with one another (Blatt, 1995; Kernberg, 1984). For example, chronic feelings of emptiness and uncertainty about oneself may lead individuals with BPD to look to their relationships to define who they are. Given the affective lability associated with this disorder, how such individuals see themselves in relation to others may then be highly dependent on the affective context – "I feel good because the person I love is good," and conversely "I feel bad because this person is bad to me." Further, with a sense of self so centrally tethered to others, when there is a threat to that relationship ending, one comes to feel that the self is also threatened – "If I am not her boyfriend, then who am I?" This may lead to intense fears of abandonment as well as desperate and impulsive attempts to pull the person back. Thus, as can be seen in this illustration, one's sense of relatedness cannot be understood in the absence of the one's sense of self.

Development of Mental Representations as Related to Solitude

Winnicott's (1958) conception of the "capacity to be alone," or one's ability to endure, even prosper, in solitude, has become the theoretical touchstone for many solitude theorists and researchers (e.g., Burger, 1995; Larson & Lee, 1996; Long &

Averill, 2003; Suedfeld, 1982). In Winnicott's view, this achievement is understood as the product of having internalized stable and secure representations of self with others, a notion that has been advanced by attachment and object relations theory and research (Blatt & Levy, 2003; Levy & Blatt, 1999). These theories posit that in normal personality development, representations of self in relation to others become increasingly more differentiated and integrated (Blatt, 1995; Kernberg, 1975). The infant's experiences, initially organized around moments of pain and pleasure, become increasingly differentiated and integrated representations of self and other.

Through the experience of being regulated, the child comes to internalize a representation of self in relation to a regulating other such that at a later stage of personality development, the child is able to draw internally upon this integrated *self being soothed by a regulating other* representation. Although at an earlier stage of development external contact with the primary caregiver was necessary in regulating affect, the child may now internally evoke a regulating representation, and concrete contact with caregivers becomes a less immediate need. This capacity has been termed *evocative constancy* – the capacity to retain and recall an object that is no longer immediately present (Blatt, 1995). Evocative constancy is central to the capacity to be alone and prosper in solitude because it allows for the individual's internal experience to be *populated* with loving and caring others, even when no one else is present. Thus, the internalization of a consistently present and reliable other is what paves the way for the capacity to be alone.

In the absence of an assuredness of the presence of a regulating other, considerable resources must be directed both outward toward monitoring the presence or absence of the caregiver and inward in order to reestablish homeostasis. This allocation of resources significantly impinges on the child's experience, as the child must direct a great deal of attention on short-term strategies for securing resources from caregivers (Tuber, 2008; Winnicott, 1958). The experience of aloneness is no longer one of safety, but rather one of danger and unmet needs. Such experiences impinge on the child internalizing a representation of self being consistently and reliably regulated by another.

Winnicott's (1958) theory of the capacity to be alone – that of a developmental milestone and sign of mental health resulting from a child's early experiences of comfortably *sharing* aloneness with the mother – is widely accepted among solitude theorists and researchers (e.g., Burger, 1995; Larson & Lee, 1996). Despite this, there is only a small body of research supporting the link between internalized representations and the capacity to be alone (Richman & Sokolove, 1992). In a recent study, Detrixhe, Samstag, Penn, and Wong (2011) evaluated the quality of object relations and internal resources in predicting attitudes toward solitude and mental well-being. Using the *Object Relations Inventory* (ORI; Blatt, Wein, Chevron, & Quinlan, 1979), they found in a nonclinical sample that one's attitude toward solitude and sociability mediated the positive relationship between loneliness and the complexity of representations of oneself and attachment figures. This finding

suggests that, consistent with Winnicott's conceptualization of the capacity to be alone, one's quality of object relations strongly influences one's attitude toward solitude and experience of loneliness.

Theory on Mental Representations and Personality Pathology

Attachment and object relations theory and research have linked problems in the internalization of representations of *self being soothed by a regulating other* to the subsequent development of personality pathology. Fonagy et al. (2002) contend that many features of personality pathology can be understood as originating in a failure to internalize representations of one's affect states that are accurately mirrored by caregivers. They note that such representations are established through a mirroring of the child's affective experience from caregivers that is both congruent with the child's internal experience and *marked* or playfully exaggerated in a manner that modulates the affect and protects the child from a *too real* reflection of the emotion. For example, children who fall down are often comforted by an affected expression of *oh no! do you have a boo boo?* but may become even more upset if caregivers look truly panicked by the injury.

Fonagy et al. (2002) note that without an experience of marked and congruent mirroring, the child may experience a lack of differentiation between the caregiver's affect state and his/her own internal state. This may manifest in individuals with personality pathology through impairment in the ability to read and interpret the minds of others and view self and others as separate and whole beings. Further, if a child does not receive contingent mirroring, he/she will nonetheless take in the caregiver's reflections, even if the affect state of the caregiver does not map onto the child's own affective experience. The child comes to internalize the caregiver's incongruent affect states and projections, which creates in the child an alien experience of self. These distorted representations may include identifications of the self as bad, aggressive, malevolent, destructive, or deserving of harsh punishment. As a result, there is a discontinuity between the child's affect states and the alien representations of the self. Only by projecting the alien aspects of self onto the other can the child achieve a sense of continuity within the self. Therefore, such an individual may behave in a way that induces anger and frustration in the other in order to locate the alien experience in that person. Conversely, such an individual may need to withdraw from those in whom the alien aspect of self has been located, leading to a cycle of intense engagement and withdrawal into painful solitude.

Blatt, Zohar, Quinlan, Zuroff, and Mongrain (1995; Blatt & Shichman, 1983) conceptualize personality development as involving two fundamental parallel developmental lines – (i) an anacritic or relatedness line that involves the development of the capacity to establish increasingly mature and mutually satisfying interpersonal relationships and (ii) an introjective or self-definitional line that involves the development of a consolidated, realistic, essentially positive, differentiated, and integrated

self-identity. These two developmental lines normally evolve throughout life in a reciprocal, dialectic, and mutually facilitating transaction. Blatt (1995) and colleagues (e.g., Blatt & Levy, 2003; Blatt & Shichman, 1983; Levy & Blatt, 1999) conceptualize various forms of psychopathology as an exaggeration of one of these developmental lines at the expense of development of the other line, each with distinct disordered behavior. Anacritic psychopathologies are those disorders in which patients are primarily preoccupied with issues of relatedness and use primarily avoidant defenses (e.g., withdrawal, denial, repression) to cope with psychological conflict and stress. These disorders include BPD, dependent personality disorder (DPD), anacritic depression, and histrionic personality disorder (HPD). Individuals with such disorders tend to fear abandonment and have difficulty tolerating aloneness.

In contrast, introjective psychopathology includes patients primarily concerned with establishing and maintaining a viable sense of self, with concerns about autonomy and control as well as conflict around self-worth. These patients use primarily counteractive defenses (e.g., projection, rationalization, intellectualization, reaction formation) to cope with conflict and stress. Introjective patients are more ideational and concerned with establishing, protecting, and maintaining a viable self-concept than they are with the quality of their interpersonal relations. Issues of anger and aggression, directed toward the self or others, are usually central to their difficulties. Examples of introjective disorders include paranoid personality disorder (PPD), obsessive-compulsive personality disorders, introjective (guilt-ridden) depression, and overt narcissism. Individuals with such disorders tend to seek isolation, although not usually in the service of productively utilizing solitude toward personal growth.

Research on Mental Representations and Personality Pathology

A number of clinical theorists and researchers (Adler, 1985; Adler & Buie, 1979; Bender & Skodol, 2007; Blatt, 1995; Kernberg, 1975; Levy, 2005) have suggested that those with personality disorders such as BPD are vulnerable to feeling rejected, abandoned, and alone due to impairments in evocative constancy. Whereas healthy, integrated individuals are able to evoke representations of soothing experiences of others when stressed or alone, those with BPD struggle to do so and are therefore dependent on the actual presence of others (Adler & Buie, 1979; Blatt & Auerbach, 1988; Blatt & Shichman, 1983).

Consistent with this clinical theory, research suggests that those with personality disorders have less differentiated and integrated representations of self and others. Westen and colleagues (Segal, Westen, Lohr, & Silk, 1993; Westen, Ludolph, Lerner, Ruffins, & Wiss, 1990), using various social cognitive measures, have consistently found that patients with BPD show deficits in a range of social cognitive capacities such as the complexity of representations of people, capacity for emotional investment, and understanding of social causality. Wilkinson-Ryan and Westen (2000) also found using a clinician-rated scale that the factor *painful incoherence* best

distinguished BPD patients from non-BPD patients; one of the strongest items loading on this factor was *feelings of emptiness*. Patients with BPD also provide less coherent representations of significant others (Barone, 2003; Diamond et al., 2003; Fischer-Kern et al., 2010; Fonagy et al., 1996) and are less able to reflect on their mental states and the mental states of others (Diamond et al., 2003; Levy et al., 2006) on the *Adult Attachment Interview* (AAI; George, Kaplan, & Main, 1985). Levy et al. (2002) and Benedik (2009) each found that those with BPD showed less differentiated representations than healthy controls on the ORI (Blatt et al., 1979).

Richman and Sokolove (1992), comparing 20 patients with BPD with 20 neurotically organized individuals, found that the BPD patients reported a more pervasive experience of aloneness than those organized at a neurotic level. BPD patients also showed less developed representations and less capacity for evocative memory for affectively charged representations. Esplen, Garfinkle, and Gallop (2000) similarly found a reduced capacity for evocative memory for affectively charged representations on the UCLA-LS to be linked to the capacity to self-soothe in their study of patients with bulimia nervosa. Thus, impairments in evocative constancy may be strongly related to the capacity to be alone in psychopathologies with conflictual relationships to closeness and dependency.

Clinical theories of depression in BPD may be particularly relevant to understanding the experience of aloneness and behavioral solitude in BPD. Several authors (Grinker, Werble, & Drye, 1968; Gunderson, 1996; Masterson, 1976) have described depression in borderline patients as characterized by chronic, empty loneliness and boredom, as opposed to guilt, remorse, and a sense of failure in non-borderline depressed patients. Indeed, a number of studies have found this phenomenological difference in borderline versus non-borderline depression (Levy, Edell, & McGlashan, 2007; Rogers, Widiger, & Krupp, 1995; Westen, Moses, & Silk, 1992; Wixom, Ludolph, & Westen, 1993).

Clinical theorists (Beck, 1983; Blatt & Shichman, 1983) have distinguished between self-critical (or autonomous) and dependent (or sociotropic) depressions. Blatt et al. (1995) found that the dependent factor was made up of two dimensions: one characterized by interpersonally based depressions involving the loss of a real relationship and another called anacritic neediness that is characterized by anxiety related to feelings of helplessness, fear of separation and rejection, and emptiness. Those with BPD, regardless of depressive symptoms, scored higher than those with depression on anacritic neediness, which was significantly associated with interpersonal distress, self-destructive behaviors, and impulsivity, whereas self-critical and interpersonal depression was not.

Adler (1985) posits that depression in borderline individuals may be characterized by feelings of *aloneness* due to an inability to maintain stable representations of significant others. What remains unclear is how to best to understand the representational deficits seen in BPD. Theorists such as Adler (1985), Fonagy et al. (2002), Gunderson (1996), Kohut and Wolf (1978), and, to various degrees, have proposed deficit models to explain the unintegrated representations of patients

with BPD, contending that during development those with BPD failed to sufficiently internalize representations of self being reliably regulated by another. In contrast, Kernberg (1975, 1984) contends that the difficulties experienced by those with BPD are a result of defensive processes. Although Kernberg acknowledges that representational deficits may play a role in BPD pathology, he argues that problems with evocative constancy are related to defensive splitting – the dividing of people into all-good or all-bad representations. For Kernberg, splitting is a normal developmental process common to children who do not have the cognitive capacity to integrate ambivalent ideas and feelings. In adults, who are capable of integrating ambivalence, positive and negative mental images are defensively kept apart in order to protect one view from the other. Often this defensive splitting takes the form of seeing oneself as *all good* and the other as *all bad* or vice versa. Thus, borderline patients may not see their own aggression toward others and yet are acutely aware of indications of another's aggression (even if not present) as it maintains the "I am good–they are mean" split. This may vacillate back and forth quickly – in one moment seeing oneself in an all-good light and the other all bad and then seconds later the roles may reverse. This often leads those with BPD to feel overwhelmed by another's presence, leading them to push people away. However, moments later the individual may feel alone and abandoned, leading them to desperately seek contact with others. This dynamic has led to the popular characterization of patients with BPD, expressed in a book title, *I hate you – Don't leave me* (Kreisman & Strauss, 2010). Thus, defensive splitting may be a process that is centrally responsible for the painful experience of loneliness felt by these patients.

Kernberg (1975, 1984) further contends that individuals with BPD struggle to be emotionally intimate with others due to its potential to evoke feelings of fear and vulnerability. Opening up and allowing for desire of another person can be scary to anyone. Individuals with secure representations grapple with those feelings by considering a range of information about past experiences, such as times they might have been hurt as well as loved by others. They consider how this person and situation are similar and different from the past, how one might have grown since past experiences, and how best to address these concerns with an integrated and fully considered response. However, the person with BPD might instead defensively split off (or exclude from awareness) their dependent longings, thus protecting them from their fears. Experientially, this defensive process leaves the person only aware of the dangers of the relationship and not the potential benefits; behaviorally this might be expressed through withdrawal and expressed anger toward the love interest. As is the nature of personality disorders, this dynamic is often experienced across multiple relationships, such as friendships, romantic relationships, and therapeutic relationships. It is not uncommon for such patients to drop out of psychotherapy after a so-called good session in which feelings of closeness are aroused by the therapist being particularly empathic or responsive.

Although there is a wealth of clinical data on splitting in patients with BPD, empirical evidence is less abundant though suggestive of its merit. Baker, Silk,

Westen, Nigg, and Lohr (1992) found that those with BPD had a greater tendency to view others as malevolent rather than to split their representations. In contrast, Greene (1993) found that those with BPD were more likely to use image-distorting defenses such as splitting in which they saw themselves as both “omnipotent” and “bad.” Gould, Prentice, and Aisnlie (1996) found validity for a self-report measure of splitting that was related to borderline and narcissistic personality disorders as well as measures of self-image stability, self-esteem, negative affectivity, and lower levels of cognitive complexity. Linville, as well as Showers and colleagues (Linville, 1985; Zeigler-Hill & Showers, 2007) found using a card-sorting task that those higher in self-complexity and lower in integration reported more stable emotional states (Campbell, Chew, & Stratchley, 1991; Linville, 1987; Rafaeli-Mor & Steinberg, 2002) and became less distressed in response to negative feedback and less excited in response to positive feedback (Linville, 1985; Niedenthal, Setterlund, & Wherry, 1992). Low integration was significantly related to having unstable self-esteem (Zeigler-Hill & Showers, 2007). Consistent with the concept of splitting, those low in complexity and integration displayed a *spillover effect* in which negative evaluations in one area of their lives spill over into unrelated aspects of their lives (McConnell et al., 2005; McConnell, Strain, Brown, & Rydell, 2009).

Recent studies using intensive repeated measurement techniques have also found evidence for splitting and its relationship to BPD and dysregulated affect. Coifman, Berenson, Rafaeli, and Downey (2012) found using experience-sampling diaries over the course of 21 days that those with BPD as compared to healthy controls showed greater polarity in the experience of affective and relational experiences. Consistent with Kernberg’s (1984) contention that splitting is more likely to occur during intense affect, these investigators found that heightened interpersonal stress increased the likelihood of such polarities in experience.

Despite this evidence, it is important to note that whether the problems in evocative constancy seen in patients with BPD are the product of a deficit or defense is not mutually exclusive. Deficits in representational capacities could leave one vulnerable to defensive splitting due to the lack of integration needed to resolve a split. Further, by not considering multiple sides to an issue, defensive splitting may deny individuals the opportunity for integration and representational development, which repeated over many interactions may leave the individual with a deficit (Levy, 2005).

Expression of Behavioral Solitude in Personality Disorders

Although the various personality disorders differ greatly in terms of their manifest presentation, each can be understood in the context of core conflicts around closeness and relatedness on the one hand and distressing experiences of isolation on the other. For example, such deficits may manifest in isolation and a denied desire for closeness (schizoid personality disorder (SPD)), isolation despite a desire for closeness (avoidant personality disorder (APD)), seeking relationships despite a

denied desire for closeness (narcissistic personality disorder (NPD)), or seeking relationships with a strong desire for closeness (DPD). In BPD, individuals are particularly known to struggle with loneliness and fears of abandonment (Choi-Kain, Zanarini, Frankenburg, Fitzmaurice, & Reich, 2010; Gunderson, 1996; Klonsky, 2008; Zanarini et al., 2007).

BPD

As noted earlier, the developmental experiences of individuals with BPD may contribute to difficulties internalizing representations of others as caring (and the self as cared for), particularly in times of distress. Due to difficulty evoking these types of representations, they often require the tangible and immediate presence of another person in order to feel soothed and contained. Accordingly, the experience of aloneness is often very difficult to tolerate for these individuals. Gunderson (1996) argues that this intolerance to aloneness should be considered the *essential feature* of BPD insofar as it discriminates BPD from other disorders and also provides a coherent framework for conceptually linking the characteristic difficulties observed in BPD. For instance, fear of abandonment may be observed as a precipitant of self-destructive behavior, affective instability, and angry outbursts; similarly, the negative affective consequences of aloneness may lead to impulsivity and transient psychotic symptoms (Gunderson, 1996). Relatedly, Klonsky (2008) found that the BPD criterion of chronic emptiness was strongly correlated with feelings of isolation and loneliness preceding and following episodes of self-injury.

Studies of symptom course in BPD patients over a 10-year period have provided additional evidence that intolerance to aloneness, along with chronic dysphoria, represent the more enduring, stable aspects of the disorder (Choi-Kain et al., 2010; Zanarini et al., 2007). In particular, intolerance to aloneness, abandonment concerns, and dependency were among the features that were the slowest to remit over time (Zanarini et al.); among interpersonal symptoms in particular, affective dysphoria (i.e., anxiety, depression, emptiness, or anger) when alone was the last feature to remit – taking 10 years to reach a remission rate of 50% – even though this feature was endorsed by most of the patients at baseline (Choi-Kain et al.). Taken together, these findings suggest that intolerance to aloneness is a highly characteristic and enduring feature of BPD consistent with etiological models of the disorder.

NPD

Patients with NPD are characterized by grandiose self-assessments, strong needs for admiration, and difficulty empathically relating to others who see things differently (APA, 2000). Those with NPD have a complex relationship to aloneness, in that such individuals often deny or dismiss their needs for closeness and yet depend on others for admiration and validation of a positive self-appraisal. This apparent contradiction can be best understood in the context of this disorder's etiology. NPD, in

Kernberg's (1975, 1984) view, develops as a consequence of parental rejection, devaluation, and an emotionally invalidating environment. The child copes with parents who are inconsistent or who only relate in order to satisfy their own needs by defensively withdrawing and forming a pathologically grandiose self-representation. By combining aspects of the real self with fantasized aspects of what the child wants to be, as well as fantasized aspects of an ideal, loving parent, the grandiose self serves as an internal refuge from the harsh and depriving environment. The negative self-representation is disavowed and not integrated into the grandiose representation, but can be seen in the emptiness, chronic hunger for admiration and excitement, and shame that also characterize the narcissist's experience (Akhtar & Thomson, 1982). Thus, dismissiveness and feelings of emptiness go hand in hand with needs for contact with others that involves admiration and validation.

Subtype distinctions in the expression of NPD have been noted that have implications for this disorder's relationship to solitude. Kohut and Wolf (1978) described three subtypes of NPD based on how the conflict around distance versus closeness is negotiated. *Merger-hungry* individuals must continually attach and define themselves through others; *contact-shunning* individuals avoid social contact because of fear that their behaviors will not be admired or accepted; and *mirror-hungry individuals* tend to display themselves in front of others. Regardless of subtype, each shows a dearth of true intimacy, with relationships used in the service of validation of a positive self-appraisal. Further, each subtype uses solitude as a respite from threats to one's grandiose self-representation rather than utilizing aloneness in the service of internal growth.

HPD

Patients with HPD are characterized by dramatic emotionality that functions to bring attention toward oneself. These individuals share many features with BPD, in that each requires the concrete presence of another person in order to feel contained. They also share many features with NPD, in that each may seek an *audience* from which recognition arises. More unique to HPD is conflict and shame around sexuality, which may be either unconsciously repressed and converted to physical symptoms or counterphobically expressed with sexually seductive and provocative behaviors (Psychodynamic Diagnostic Manual Task Force [PDMTF], 2006). Individuals with HPD struggle to be alone and often seek interpersonal contexts that will provide a desperately needed attention, but this style of relating is often superficial and at the expense of deeper intimacy.

SPD

Patients with SPD are in many ways characterized by their aloneness and apparent indifference toward relationships (APA, 2000). Such individuals are thought to not desire intimacy and closeness and shun family, friend, and romantic relationships as a result. Further, individuals with SPD appear to be indifferent to the kinds of

praise and criticism that can be powerfully motivating for others. As a result, such individuals appear emotionally detached in social interactions, although recent research has begun to challenge the notion of absent desire underlying this manifest disinterest. Shedler and Westen (2004; Westen & Shedler, 2007) used a large sample of clinicians characterizing their own patients as well as prototypical patients on a wide range of personality descriptors to create empirically derived typologies. Their prototype of SPD goes beyond interpersonal avoidance to describe an inner experience of fear of embarrassment and humiliation. Thus, the internal experience of an individual with SPD may actually be highly vigilant of and intolerably pained by difficulty in engaging the social world, which is defended against by isolation and an apparent indifference toward relationships. Therefore, while patients with SPD may prefer behavioral solitude, this research challenges the assumption that a dearth of intimacy is their desired state.

PPD

Patients with PPD are characterized by a pervasive suspiciousness that leads to attacks on the fidelity and trustworthiness of others (APA, 2000). Unlike psychotic-level paranoia in which suspicions are beyond the bounds of reality testing, those with PPD may have actual relationships within which they fear being deceived or maligned. Kernberg's (1984) notion of defensive splitting is particularly relevant for understanding this disorder, in that such individuals do not see their own aggression toward others (i.e., hostile accusations) and yet are acutely aware of indications of another person's aggression. Accusations of distrust are likely to be made without sufficient basis or may be evoked by the paranoid person's behavior, which could lead others to withhold or hide information that may in turn be misconstrued as evidence of distrust. It is important to note that for defensive splitting to successfully protect the all-good image of the self, there needs to be another on whom the all-bad image can be projected. Thus, while individuals with PPD may isolate themselves by either pushing others away by their hostile accusations or retreating into solitude to seek respite from a world perceived as unsafe, the need to locate the experience of danger in others may pull them back toward relational experiences.

APD and DPD

APD and DPD fall into the *anxious or fearful* cluster of personality disorders (APA, 2000). Patients with APD are characterized by intense fears of criticism, humiliation, and embarrassment that lead to withdrawal from the social world to avoid this feared outcome. Patients with DPD are characterized by fears of their own lack of competence and capability to function autonomously, leading to clingy, submissive, and dependent relationship patterns. Thus, the manifest presentation of these disorders is quite different; those with DPD desperately approach relationships and, as a result, are rarely alone, while those with APD desperately avoid relationships.

and are often alone. However, Shedler and Westen's (2004; Westen & Shedler, 2007) empirically derived prototypes of avoidant and dependent personality disorders were found to share many key features, at times making it difficult to distinguish between the two. These patients were found to share what they termed a depressive core (i.e., "tends to feel inadequate, inferior, a failure," "helpless, powerless," and "will be rejected/abandoned") from which different coping strategies related to behavioral solitude arise (i.e., excessively avoiding vs. needing people).

Future Directions

As can be seen, the possible combinations of manifest presentations in the personality disorders are great, but each reflects underlying core conflicts around closeness and relatedness. Despite the conflictual relationship toward experiences of aloneness in the personality disorders detailed earlier, there have been surprisingly few links made between these disorders and solitude research. Yet there are ways in which each literature could clearly benefit from integrating knowledge from the other.

Solitude research has consistently demonstrated that those with the capacity to be alone have better mental health outcomes than those without (Katz & Buchholz, 1999; Larson, 1997; Larson & Lee, 1996; Suedfeld, 1982). However, surprisingly few researchers have evaluated solitude in the context of patient populations who are characterized by loneliness and poor mental health outcomes. Our review of the literature identified only one empirical study (Richman & Sokolove, 1992) that evaluated a personality-disordered sample with a widely used measure of solitude (UCLA-LS; Russell, 1996). While research has begun to evaluate the quality of object relations in predicting attitudes toward solitude and mental well-being in nonclinical samples (Detrixhe et al., 2011), future research should seek to extend these findings in clinical samples for whom loneliness is a distinctive feature (e.g., BPD). One of the strengths of the work of Detrixhe et al. was the use of a well-validated measure of quality of object relations (ORI; Blatt et al., 1979) that has been widely used in personality-disordered samples (Benedik, 2009; Levy et al., 2002). Building on the work of Richman and Sokolove, future research could extend their findings with a more rigorous measure of quality of object relations, such as the ORI. This work could also be built upon by assessing solitude from a variety of domains; in addition to utilizing a solitude-related well-being measure such as the UCLA-LS (Russell), personality-disordered groups could also be evaluated with measures of behavior (e.g., hours spent in solitude), attitudes toward solitude (e.g., the Capacity to Be Alone Scale (CBAS); Larson & Lee), and attitudes toward social experiences (e.g., the Sociability Scale (SS); Cheek & Buss, 1981).

The personality disorder literature could similarly benefit from a greater integration of the solitude literature. Although clinical theorists and researchers have noted the central role of loneliness for understanding BPD, relatively little attention has been paid to understanding the experience of solitude for other

personality disorders. Future editions of the *DSM* should continue to move beyond overt descriptions of signs and symptoms of personality pathology to include a greater focus on the function of isolation and intimacy. Such assessment would include the many domains of functioning impacted by deficits in self and relatedness— affect, behavior, cognitions, and interpersonal functioning (PDMTF, 2006). Further, a conceptualization of personality pathology should include not just deficits in these domains but also the presence of internal resources that might buffer against the impact of symptoms (i.e., the capacity for intimacy and healthy object relations).

Further, a conceptualization of personality disorders that emphasizes descriptions of overt signs and symptoms may present barriers to treatment. For example, a strikingly low number of schizoid adults present for outpatient treatment (APA, 2000), which may reflect not only the disorder's characteristic tendency to isolate but also a complacency on the part of the mental health community who assumes such individuals prefer isolation and “don't want treatment anyway.” An understanding of the disorder that includes a greater focus on object relations, underlying need states, and the capacity to be alone may be essential in reconceptualizing how to welcome such patients into therapy.

Lastly, it is notable that the *DSM-IV-TR* (APA, 2000) treats *social isolation* as a particularly problematic behavior, seeing it as symptomatic of not only personality disorders but also a variety of symptom disorders. Clearly, solitary behaviors that cross a certain threshold in duration and intensity may place a person at risk for mental illness. However, little is known about that threshold or whether an optimal, normative balance between alone time and together time actually exists. Future study might investigate possible personality variables that determine whether solitude-seeking is a source of well-being or a sign of pathological isolation.

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The Intersection of Culture and Solitude

The Hikikomori Phenomenon in Japan

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In the movie *Left-Handed*, a teenage boy named Hiroshi 1 day retreats to his room and locks out the rest of the world. For the next 2 years, he does not emerge. He communicates by posting scribbled requests for food and water on his door. His mother unwittingly reinforces his isolation by attending to his needs and hiding the crisis from others. Help from his father is lacking too. Other than 1 flailing attempt to force Hiroshi out, the father is conspicuously absent and occupied at work.

Hiroshi's moratorium of solitude would be memorable enough simply as a fictional movie. But his story is all the more striking because Hiroshi's character is played by Kenta Negishi, a teenager who experienced a similar period of social withdrawal in real life. This phenomenon of severe social isolation has been described extensively in Japan, and from it the term *hikikomori* has emerged to describe both the person (the social *isolate*) and the condition (the social *isolation*). Herein, we adopt the convention of referring to hikikomori as the latter.

Hikikomori is in many ways an ideal case study in solitude. As an extreme form of solitude, it can help highlight its unique features. As a complex behavior with equally complex origins, it is amenable to scholarly analysis from a wide range of disciplines including anthropology, medicine, psychology, and sociology. And as a relatively recent phenomenon, it is a timely and contemporary issue that has captured the attention of the general public and mass media.

Areas of discussion and debate surrounding hikikomori parallel that of other aspects of solitude covered in this handbook. What are the differences in hikikomori across the lifespan? How is hikikomori viewed from a clinical perspective? What

are the sociocultural influences on hikikomori? In this chapter, we begin with a brief history of hikikomori, followed by an examination of the definition of hikikomori and key theory surrounding hikikomori. Then, we examine hikikomori at multiple levels: first, we delve into the individual level by exploring the clinical features of hikikomori; second, we address the group level by describing the family context; and, third, we include the societal level with social impacts and international perspectives outside Japan. We conclude the chapter with a review of data on treatment for hikikomori and considerations for future research on hikikomori.

History of Hikikomori in Japan

Though the term hikikomori entered the mainstream Japanese lexicon in the late 1990s, hints of the phenomenon can be seen as early as 1978. At that time, Yoshimi Kasahara described cases of *withdrawal neurosis* or *taikyaku shinkeishou* (Hirashima, 2001; Kasahara, 1978; Ushijima & Sato, 1997). School refusal syndrome (Uchida, 2010) and student apathy syndrome (Lock, 1986) – which resemble hikikomori in terms of withdrawal from participation in school life – were also a topic of discussion in the 1980s in Japan. However, generally scholars did not further take up these terms. Instead some years later, the term hikikomori began appearing in the psychiatric literature to describe cases of youths going into an extended period into social isolation into their rooms. In 1998, the prominent Japanese psychiatrist Tamaki Saito wrote a best-selling book (thus making him even more prominent!) bearing the word hikikomori in its title (Saito, 1998), and since then, it has become a term as well known to the typical Japanese as karaoke is to a Westerner.

With attention from outside Japan, the next issue became how to translate hikikomori. Japanese researchers have used the term *social withdrawal syndrome* (Takahata, 2003) or, more commonly, *social withdrawal* (Kobayashi, Yoshida, Noguchi, Tsuchiya, & Ito, 2003; Kuramoto, 2003). No translation will fully convey the meaning and intent of the word, and we often prefer to describe hikikomori simply as a severe form of social isolation. And perhaps no translation is necessary. In a testament to its global reverberations, hikikomori is now included in the *Oxford Dictionary of English* ("hikikomori," 2012) and has been described in other languages such as Italian (Aguglia, Signorelli, Pollicino, Arcidiacono, & Petralia, 2010).

Defining Hikikomori

Definitions of hikikomori consistently highlight solitude in one's residence as its core feature. However, other aspects of the definition of hikikomori have been inconsistent or unclear. For instance, a definition used by an expert panel in 2003

Table 25.1 Research criteria for hikikomori.

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1. The individual spends most of the day and nearly every day confined to home.
 2. The individual has marked and persistent avoidance of social situations (e.g., attending school, going to work).
 3. The individual has marked and persistent avoidance of social relationships (e.g., friendships, contact with family members).
 4. The social withdrawal and avoidance cause either marked distress in the individual or impairment in the individual's normal routine, occupational (or academic) functioning, or interpersonal functioning.
 5. The duration of social withdrawal is at least 6 months.
 6. The social withdrawal and avoidance are not better explained by another mental disorder, such as social phobia, major depressive disorder, schizophrenia, or avoidant personality disorder.
-

was ambiguous about what mental illnesses had to be excluded and to what extent there had to be functional impact on school or work (Ministry of Health Labor and Welfare, 2003). More recently, researchers have tended to define hikikomori as “a state of social withdrawal for more than 6 months, not going to work or school except for occasionally going out, and not communicating with people besides family members” (Koyama et al., 2010).

Whereas a definition like this offers a conceptual picture of hikikomori, it can be problematic when applied in practice. For instance, in the large survey of Japanese community members that used the aforementioned definition, respondents were asked in a single question whether they met the criteria read in the aforementioned definition. Because multiple concepts were contained in a single question (a “double-barreled question”), responses from this study are difficult to interpret.

In an effort to operationalize a research definition of hikikomori, we proposed a set of six criteria necessary for hikikomori (Teo & Gaw, 2010). Since publication, we have slightly modified the definition, which in its current form is shown in Table 25.1. We believe this definition overcomes several limitations of prior definitions. First, it eliminates an age specifier as onset of social withdrawal can occur at any age (Kondo et al., 2013). Second, it is more easily adaptable to survey research, avoiding the double-barreled question design. Third, it includes a criterion for distress or functional impairment, which is an effort to avoid medicalizing simple solitude. Nonetheless, an important limitation of this working definition is that a robust empirical basis for each criterion has not been established, and thus further refinement will doubtless be necessary. For instance, it may be that the 6-month duration criterion is too strict. As will be described later, treatment studies of hikikomori have shown poor response rates, suggesting that intervention before the social withdrawal becomes protracted and less amenable to treatment may be important.

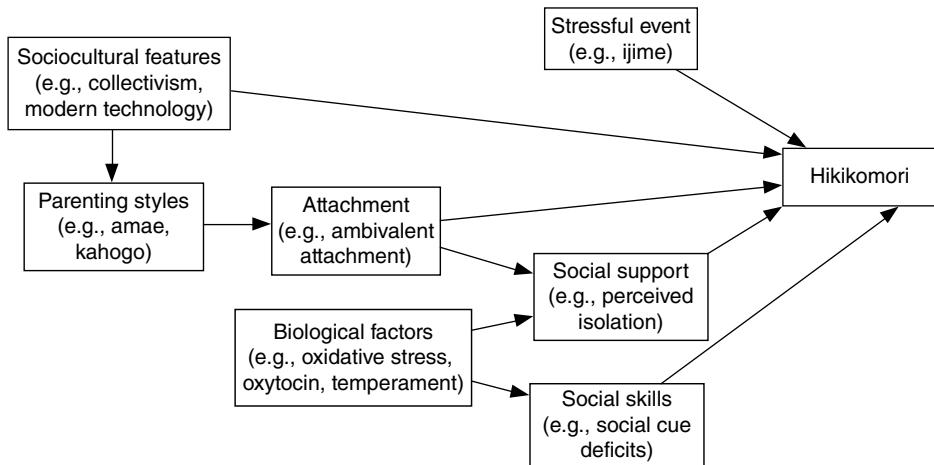


Figure 25.1 Conceptual model of hikikomori.

Theoretical Underpinnings

Besides clarifying a definition for hikikomori, developing a conceptual or theoretical model is another important step in advancing the young field of hikikomori research. As with other complex behavioral phenomenon, a good conceptual model for hikikomori will include proposed biological, psychological, and social factors relevant to hikikomori. These factors might influence hikikomori in any of a number of ways – as causes, consequences, or intermediate influencers (such as mediators or moderators). At this early stage of research on hikikomori, our model is mostly speculation, rather than a synthesis of available empirical data. In Figure 25.1, we present our working conceptual model for hikikomori, and later we describe several relevant sociocultural theories.

There is perhaps no better place to begin consideration of the development of hikikomori than with 1 of the giants of psychology: Erik Erikson. Erikson proposed a stage model of human development (Erikson, 1950). In each of the eight stages, the individual must resolve a key conflict in order to successfully cope with the next stage. In early adulthood, according to Erikson's model, the individual's challenge is to find intimacy – emotionally and otherwise – in one's relationships. Those who are unsuccessful find themselves with loneliness and isolation. Though young adulthood is years later than the typical adolescent onset of hikikomori, Erikson's theory offers a tantalizing initial suggestion that social isolation might be a consequence of impaired psychosocial development.

Another theory for the development of hikikomori utilizes the notion of attachment. Attachment theory argues that the special relationship between infant and parent has downstream impacts on one's personality and other relationships (Bowlby, 1969, 1973; Weinfield, Sroufe, Egeland, & Carlson, 1999). This is an attractive model for development of hikikomori because – as will be discussed in

more detail later – those with hikikomori often report a history of conflict with their parents. Krieg and Dickie empirically tested the role of attachment theory on the development of hikikomori on a group of 24 hikikomori and 60 controls. After having subjects complete a variety of questionnaires and scales, they used path analyses to demonstrate that a combination of shyness, rejection by parents and peers, and ambivalent attachment can predict hikikomori (Krieg & Dickie, 2013). A limitation of this study was that it was cross-sectional, relying on subjects to recall experiences from early childhood.

Cultural characteristics play a role in the manifestation of hikikomori in Japan. First and most broadly, Japanese society favors conformity and collectivism, and this may promote the development of mental health problems (Kawachi & Berkman, 2001). However, this effect can be counteracted by the health-promoting effects of social cohesiveness. Second, the behavior of social withdrawal may be relatively more favored and culturally acceptable in Japan. In the West, where individuality is more highly valued, troubled youth are more likely to exhibit externalizing behavior, such as acting out in defiance, causing disturbances, or engaging in risky or violent behavior. In Japan, as in other collectivistic cultures, acting out in this way conflicts with social imperatives for interpersonal harmony and developing identity within the context of relationships with others. Instead, the tendency is for internalizing behavior, where problematic energy is directed at the self as a coping strategy.

The concept of *amae* may also contribute to the prevalence of hikikomori in Japan. *Amae* refers to a common form of parent–child (usually mother–son) indulgence in Japan that often serves to protect children from the outside world (Doi, 1973). This doting, protective parenting style may foster dependency of a child on his or her parents. Indeed, authors have suggested overprotectiveness is more common in families where individuals develop hikikomori (Nakamura & Shioji, 1997). Furthermore, when the parent of an individual experiencing hikikomori presents for help, it is the mother nearly 9 out of 10 times (Kobayashi et al., 2003; Takahata, 2003). To the best of our knowledge, direct empirical testing of these cultural influences on hikikomori remains to be conducted.

Combining the perspectives of psychological and cultural theory, we have argued that hikikomori may be considered a culture-bound syndrome (Teo & Gaw, 2010). The term *culture-bound syndrome* is flawed in many ways, not the least of which is that such syndromes have repeatedly been found not to be culture *exclusive* (Sumathipala, Siribaddana, & Bhugra, 2004). In terms of hikikomori, we consider the term mostly useful in succinctly highlighting the importance of culture in understanding why hikikomori emerged in Japan rather than, say, Jamaica. We suggest that hikikomori preferentially meets the following characteristics in Japan: (i) it is a discrete, well-defined syndrome; (ii) it has been argued as a specific illness; (iii) it is expected, recognized, and to some degree sanctioned as a response to certain cultural precipitants; and (iv) it has a higher incidence or prevalence compared to other cultures (Gaw, 2001; Teo & Gaw, 2010).

Clinical Features

Though most medical experts do not consider hikikomori a diagnosis, practically speaking, it is usually treated as a condition warranting clinical attention. This is because the level of dysfunction and distress in hikikomori and their families is commensurate with severe medical and psychiatric disorders.

Phenomenology

Though length and degree of isolation in hikikomori is variable, it is generally long and severe. In a sample of 50 family members of individuals with hikikomori, the average duration of hikikomori before visiting a health professional was 3.4 years (Kobayashi et al., 2003). In another survey of community mental health clinics, average length was even longer at 4.8 years and an impressive 20 years in the longest case (Takahata, 2003). Kondo and colleagues have assembled one of the largest series of hikikomori cases and found similar results: a mean of 4.3 years, a wide standard deviation of 4.1 years, and one staggering case of nearly 26 years. Though the character Hiroshi in *Left-Handed* was not shown going outside while in isolation, in actuality most hikikomori do occasionally leave their residence. Sakai and colleagues managed to quantify this, showing in their sample that 86% of hikikomori went outdoors. On average, they went out 12 times a month (compared to 24 times for controls, $p < 0.001$) and spent 3 h for each outing (compared to over 9 h for controls, $p < 0.001$) (Sakai, Ishikawa, Sato, & Sakano, 2004). Hikikomori often have reversed sleep-wake cycles and go out in the middle of the night when least likely to encounter others.

Sakai and colleagues also developed a list of behaviors characteristic of hikikomori. Using data from nearly 800 families who completed questionnaires, they formulated a long list of potential behaviors associated with hikikomori. Using factor analyses, they were then able to whittle this list down to 45 behaviors in 10 categories: aggression, social anxiety, obsessions and compulsions, avoidance of family, depression, lack of activities related to daily living, lack of social participation, decreased activity, irregular schedules, and “incomprehensible maladapted behaviors” (Sakai et al., 2004). The association between hikikomori and aggression has been of particular concern. One in 5 admits to violent behavior (Ministry of Health Labor and Welfare, 2003), such as punching holes in walls of their room or even physical violence against family members. One case series found 29% of hikikomori had a history of attacking their parents physically (Hattori, 2005).

On a psychological level, those with hikikomori are frequently grossly and globally apathetic and amotivated, with an attitude bordering on nihilism (Teo, 2012). When asked about their own feelings, thoughts, ambitions, or interests, a typical answer is “I don’t know” (Nabeta, 2003). They may desire to oppose the grain of society but also feel intense anxiety about doing so, lest they be judged poorly by society or ultimately fail (Ogino, 2004).

Relating hikikomori to known psychiatric disorders

Is hikikomori a psychiatric disorder? Is it a catch-all term for social isolation that really encompasses many different disorders? The not-so-simple answer may be yes and yes. That is, there may be a bit of truth to hikikomori's distinction from traditional psychopathology, though most cases of hikikomori can be explained as a consequence of other psychiatric disorders.

Those who argue hikikomori can be fully explained by other psychiatric disorders can make several strong arguments. First, hikikomori – because it is withdrawal from social interaction – is a behavior. Second, as a behavior, social withdrawal is a known feature of many psychiatric illnesses, ranging from depression to schizophrenia to schizoid personality disorder. Third, empirical diagnostic studies have found a strong pattern of multiple psychiatric disorders among hikikomori. A recent study of cases of hikikomori evaluated at community mental health centers and diagnosed by unstructured clinical interview and collateral information as available (e.g., psychological testing) found that nearly all cases could be given a psychiatric diagnosis. The most common diagnoses were personality disorders, psychotic disorders, mood disorders, anxiety disorders, and developmental disorders (Kondo et al., 2013).

On the other hand, there are some tantalizing suggestions of some cases of *pure hikikomori*, those who do not fit the mold of any traditional psychiatric disorders. This possibility was first suggested by Takayuki Kinugasa who introduced the term primary social withdrawal and described three cases that had particular personality traits but not full-blown personality disorders (Kinugasa, 1998). Mami Suwa extended this work, describing initially a case series in which 2 of 14 were undiagnosable (Suwa & Suzuki, 2002) and then a case series with 10 primary hikikomori (Suwa, Suzuki, Hara, Watanabe, & Takahashi, 2003). Our review of diagnostic studies of hikikomori also found a pattern of a minority of cases in which diagnoses could not be applied (Teo & Gaw, 2010). To date, the most rigorously designed diagnostic study of hikikomori was a large epidemiological study that found 46% of hikikomori lacked any lifetime experience of a psychiatric disorder (Koyama et al., 2010). Importantly, this study evaluated hikikomori in the general community, as opposed to studies in clinical settings (Kondo et al., 2013) that will tend to overrepresent the illness severity of hikikomori (and thereby increase the likelihood of having psychiatric disorders).

However, many questions still remain to be studied before the notion of primary hikikomori can be accepted. Studies need to include more comprehensive diagnostic evaluation. For instance, the study by Koyama and colleagues did not evaluate for schizophrenia and many other disorders, and therefore many *undiagnosed* cases may have simply been under-assessed. Likewise, purported primary hikikomori may be mild cases of an autism spectrum disorder since these individuals have deficits with social interactions. Supporting this hypothesis is the increasing prevalence of reported autism spectrum disorders globally (Kogan et al., 2009) and higher than previously estimated incidence of adult autism in the general population (Brugha et al., 2011).

Risk Factors

Perhaps the two most striking correlations with hikikomori are gender and age, though there is a caveat with each. Most studies have found a heavy male predominance, typically around a 4:1 male-to-female ratio (Kondo, 1997; Kondo, Iwazaki, Kobayashi, & Miyazawa, 2007; Ministry of Health Labor and Welfare, 2003; Saito, 1998). The true discrepancy may be lower due to a cultural tendency for women who isolate themselves at home to not be viewed as ill or encouraged to seek treatment. The age of those experiencing hikikomori also is skewed to the young. Studies have often found an average age of onset ranging between 17 and 22 years (Kondo et al., 2007, 2013; Koyama et al., 2010; Takahata, 2003). A limitation here is that most Japanese studies do not describe an eligible age range for study inclusion or restrict those older than 30 or 40 from being included. Conversely, in countries like the United States, social isolation has primarily been researched among geriatric populations (see Wethington & Pillemer, Chapter 14, this volume). Thus, much like the gender gap, the apparent youth predominance would likely lessen with study of older adults.

Those with hikikomori often have a history of aversive or traumatic childhood experience. The most often cited example is difficulty in school. Bullying is a prominent social problem in Japan, and individuals with hikikomori relate stories of taunting, being shunned by social circles, or outright physical abuse by school peers. The earlier mentioned problem of school refusal (*futoukou*) has in fact been reported to be the most common diagnosis in child and adolescent psychiatry in Japan (Honjo, Kasahara, & Ohtaka, 1992). In short, school refusal can be a harbinger of later hikikomori, found in 70% of cases observed by one clinician (Saito, 1998).

Family History and Dynamics

Instead of focusing on the individual with hikikomori as the source of psychopathology, another approach is to examine the family of the hikikomori. Two lines of reasoning apply here. The first is that dysfunction among parents may help trigger hikikomori in the child. In essence, parental psychopathology acts as a risk factor for hikikomori, much like a family history of depression increases an individual's own risk. The second is that dysfunction in the relationship between parent and child may contribute to the development of hikikomori. In other words, it is problematic interactions and communication that promote hikikomori. As discussed earlier in the section on theoretical underpinnings, family dynamics such as ambivalent child-parent attachment may promote the development of hikikomori. Psychodynamic therapists have speculated that helicopter mothers (often described as *kahogo*) and absent fathers – much like the dramatization of Hiroshi's parents – contribute to the development of hikikomori (Myoki, 1997). Furthermore, family therapists – who are most attuned to interactions among family members – have

commented that members of the contemporary family in Japan do not meaningfully communicate among each other (Vosburg, 2009).

One recent study provides a preliminary suggestion of the importance of the first factor. In their study, they found that mental illness in the mother was predictive of hikikomori for the child (Umeda, Kawakami, & The World Mental Health Japan Survey Group, 2012). However, they did not find a significant correlation between child-rearing style of either mother or father and hikikomori. This study had considerable methodological limitations including being underpowered to evaluate all the included factors and the possibility of detecting a significant result simply by making multiple comparisons. Another study of the parents of 50 individuals with hikikomori found that family functioning was abnormal in general as well as across six subdomains of functioning (Kobayashi et al., 2003). Because it was a cross-sectional study, it is unclear whether poor family functioning was the cause or consequence of hikikomori.

Social Context

Epidemiology

Early estimates of up to a *million* people with hikikomori in Japan (Saito, 1998) were overstated, but even with more recent and reliable estimates, it is clear that hikikomori in Japan is hardly rare. The best available data come from a community study in which 4000 face-to-face interviews were conducted utilizing a standardized definition of hikikomori (Koyama et al., 2010). Using weighted data, which allowed them to extrapolate estimates to the entire country, they estimated 1.2% of community-residing Japanese between ages 20 and 49 had a history of hikikomori at some point in their life. Furthermore, using reports from family members about their children, they estimated that 0.5% of households currently have a member with hikikomori (Koyama et al.). On a nationwide level, this would mean 232,000 Japanese currently suffer from hikikomori.

Shifting qualities of modern society. Empirical data demonstrating links between features of modern society and hikikomori are lacking, but this has not prevented many a commentator from speculating on the role of modern society. One set of influences falls into the broad category of the Japanese economy. Disillusionment among Japanese youth in the context of the country's recalcitrant economic stagnation is mentioned, for instance. Indeed, Japan has had to add two new terms to describe segments of its labor force: *freeter*, a nontraditional worker who only takes part time or a series of temporary jobs, and "NEET" (not in education, employment, or training) who have suspended any endeavors to find employment. As those with hikikomori, by definition, do not actively participate in educational or work activities, they are doubtless a factor in the surge in freeter and NEET.

Another set of influences relates to Japan's educational system. Recall the story at the start of this chapter of Hiroshi who one day stopped attending school. A study of Japanese college students found a trend of increasing numbers of college students dropping out and taking extended leaves, from about 1% each in 1980 to 1.5% and 2.6%, respectively, in 2005 (Uchida, 2010). Also, what might have been deemed protracted school refusal in the past nowadays is likely to be classified as hikikomori. Margaret Lock (1986, pp. 101–103) described three cases of school refusal, one of which was a 16-year-old who stopped going to school 2 years prior to presentation. She wrote, "when his mother tried to persuade him to go he had retreated, carrying his futon, into the space between the ceiling and the roof of the family house. According to the psychiatrist in charge of the case, Yasuyuki's mother carried food to her son's hiding place every day for 2 years...."

Modernization of society more broadly has also been suggested as a factor, with hikikomori as a sort of reflection or response to modern lifestyle (Kato, Shinfuku, Sartorius, & Kanba, 2012). Even more specifically, Internet and video game use has been linked with social isolation, most notably in Korea, where it has become a major public health issue (Block, 2008).

International perspectives. Hikikomori has been understood as a quintessentially Japanese phenomenon, but in recent years, reports of similar phenomena in other societies have emerged. South Korea probably has the closest cultural similarities to Japan and the most reports of hikikomori after Japan. In Korea, those with hikikomori are referred to as *socially withdrawn youth*. Also, the 6-month duration of social isolation is reduced in Korea to a less strict 3-month period (Lee, 2010). Case reports of hikikomori have also emerged in quite culturally distinct areas of the world, including Oman (Sakamoto, Martin, Kumano, Kuboki, & Al-Adawi, 2005), France (Furuhashi et al., 2011), Spain (Malagon, Alvaro, Corcoles, Martin-Lopez, & Bulbena, 2010), and the United States (Teo, 2012). Finally, a nine-country international survey presented a prototypical case vignette of hikikomori and found that psychiatrists around the globe felt such case presentations existed in their country (Kato et al., 2012). This study has provided a rational basis for a study we are currently undertaking: a multi-country pilot study using standardized, research-grade instruments that will describe features of hikikomori across cultures.

Treatment and Recovery

Though many different approaches have been tried to treat hikikomori, strong encouraging data are lacking (Teo, 2010). Results among studies are difficult to compare because of what can be summarized as study heterogeneity: varying patient populations, outcome measures, and other study design elements. Moreover, outcome findings are generally not terribly encouraging.

An initial barrier is simply lack of interest and willingness to participate in treatment. One study of hikikomori deemed only 54% (183 / 337) as *help-seeking*.

Moreover, in some cases, it took a year or more of family support and persuasion before the individual even sought professional help (Kondo et al., 2013). Even when visitation to the patient's home is used to obviate the onus of self-presenting, individuals with hikikomori are extremely resistant to participation (Lee, Lee, & Choi, 2013). Also, relatively few of those with hikikomori reach a meaningful level of recovery and only with extended treatment. A study of hikikomori with comorbid social anxiety disorder found just 27% (10/37) of sufferers were able to functionally recover (defined as participating in full-time work or school) after an average of almost 5 years of outpatient treatment (Nagata et al., 2011).

Psychosocial interventions have been at the heart of treatment for hikikomori. Organizations such as New Start utilize counselors known as *rental sisters* or *rental brothers* to initiate contact and act as a liaison between hikikomori and societal reintegration (Jones, 2006). The actor portraying Hiroshi in the movie *Left-Handed* attended an alternative school (called *free schools* in Japan) designed for students unwilling or unable to attend traditional schools. Other approaches have ranged from work farms to social skills training groups. A small study of a 7-week educational group for parents of those with hikikomori failed to show a significant improvement in general health or family functioning (Hata, Maeda, Aso, & Hiroyama, 2004). If a person with hikikomori is amenable to treatment, individual psychotherapy may be useful, as was suggested in our case study (Teo, 2012).

System-level policy interventions that have the input of economists, sociologists, and public health-oriented clinicians may become an essential complement to the more individual and family-level interventions that are the focus of on-the-ground clinicians. Some social scientists that have studied hikikomori have lamented inadequate consideration of societal factors such as education and labor policy (Furlong, 2008) and economic conditions (Toivonen, Norasakkunkit, & Uchida, 2011). Given the uninspiring level of success of clinical interventions, these other approaches might ultimately offer a better chance of success.

Future Directions

Research on hikikomori is still in its infancy, which leaves much excitement for future areas for exploration. Here we outline five suggestions that we believe will significantly advance the field while also being feasible with the budget constraints of this emerging field.

The first suggestion is not so much an area as much as an approach. Multidisciplinary research teams are desperately needed to understand this complex phenomenon. A purely medical perspective is simply insufficient. Research teams that incorporate experts from clinical disciplines (psychiatry, social work, family therapy) as well as the academic fields of psychology, sociology, and anthropology are more likely to achieve meaningful success.

Second, researchers should utilize standardized research methods. This is *de rigueur* in medical research but has been slow to occur in hikikomori research. At a minimum, a standard definition of hikikomori that can be easily operationalized in research studies is necessary. Our bias, not surprisingly, is for the research definition described in Figure 25.1! Diagnostic studies of hikikomori need to utilize structured or semi-structured diagnostic interviews. None is perfect, but options include the Composite International Diagnostic Interview (CIDI), Structured Clinical Interview for DSM-IV Disorders (SCID), and Mini-International Neuropsychiatric Interview (MINI). In the same vein, standard survey instruments will allow more meaningful comparison and interpretation of research results. For instance, in our pilot international study, we are having hikikomori subjects complete well-known measures of solitude: the UCLA Loneliness Scale (Russell, Peplau, & Ferguson, 1978) and Lubben Social Network Scale (Lubben, 1988).

The third suggestion is for qualitative research studies. We are rather astonished that, to our knowledge, there have been no studies using rigorous qualitative methods to understanding hikikomori. In our opinion, a *rigorous* qualitative study will be grounded in a theoretical understanding, will include in-depth interviews or focus groups, and will carefully analyze transcripts for themes. Such studies could be very helpful for hypothesis generation, which could then inform creative treatment interventions for hikikomori.

Fourth, to begin to address causal factors in hikikomori, prospective longitudinal studies are necessary. Cross-sectional studies, which assess a single point in time, simply do not have the ability to determine cause–effect relationships. Longitudinal studies are naturally more time-consuming and expensive, but starting with a cohort that is suspected to be at risk for developing hikikomori would help minimize this. Besides psychological measures, we would be particularly excited about the inclusion of biological factors. Putative biological mechanisms in the pathophysiology of social isolation might include oxidative stress (Krolow et al., 2012; Schiavone et al., 2009) and oxytocin (Karelina & DeVries, 2011).

Finally, epidemiological studies of hikikomori in countries outside of Japan will directly tackle the question of to what extent hikikomori is a universal problem. One simple and inexpensive way to do this would be to add a series of questions to an ongoing epidemiological study.

Conclusion

Hikikomori is one of the most profound depictions of human isolation, of solitude gone awry. We may struggle to understand why people like Hiroshi would so dramatically and drastically shut themselves away. But we can all empathize with the experience of loneliness and solitude. Our hope is that more clarity about hikikomori will both help those struggling to overcome it and translate into an understanding of solitude and social relationships relevant to all.

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Part V

Disciplinary Perspectives

A View from Biology

Playing Alone and with Others: A Lesson from Animals

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Animals, including humans, can play alone or with others. From an evolutionary point of view, playing in *solitude* can be a fruitful activity as much as playing with a friend, especially when the activity is variable, rich of many behaviors included in the ethogram of the species, and free from stereotypes or aberrant behaviors. If solitary play respond to such requisites, it can also lead to an even more intense and complex social activity, as we will see later.

Defining play is a difficult matter (Burghardt, 2005, 2011). Compared to other behaviors, whose modalities and functions are easier to be detected, animal play remains an intriguing challenge for researchers interested in the study of this ephemeral and controversial phenomenon. Both solitary and social play include activities that may appear to an observer to have no obvious immediate benefits for the performer, but which involve motor patterns typical of functional contexts, such as food provisioning, shelter construction, defense from predators, and reproductive behavior (Bekoff, 2001; Martin & Caro, 1985; Pellis & Pellis, 1996; Power, 2000). Recently, Burghardt (2005) listed five criteria that an activity must follow to be considered play. According to Burghardt's definition, a playful animal behavior must be (i) incompletely functional (play includes elements or is directed toward stimuli that do not contribute to current survival), (ii) rewarding/voluntary (play often appears to be spontaneous or intrinsically motivated, or the stimulation produced is rewarding or reinforcing; no apparent external stimulus seems to be involved in triggering the session), (iii) structurally or temporally modified (behavioral patterns in play may be exaggerated in intensity or duration from their

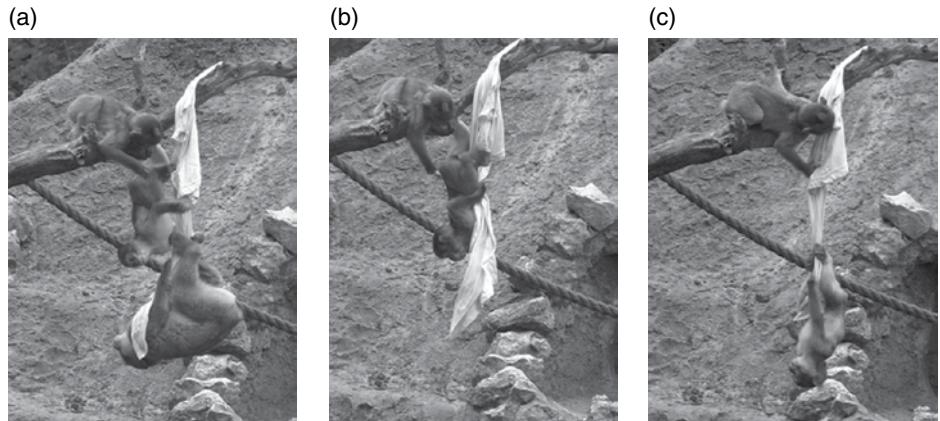


Figure 26.1 A sequence of a complex playful session—(a) polyadic and (b) and (c) dyadic—in Barbary macaque (*Macaca sylvanus*). Three animals (two infants and one adult male) are playing acrobatically by using an object. This type of object play can also be defined as social, locomotor–rotational, and polyadic (more than two individuals involved (a)). Photos credit by Elisabetta Palagi.

normal expression; play may appear earlier in development compared to other functional behaviors; this is particularly true for play fighting, chasing, wrestling, locomotor play, and courtship play), (iv) performed in a repeated manner (play bouts are generally long lasting but not rigidly stereotyped; animals seem not to tire of performing a behavior for long period), and (v) initiated in a relaxed context (animal playing is generally adequately fed, healthy, and free from stress or intense competing systems). As a matter of fact, the main difference between *playful* and other activities is not in the actual behavioral patterns performed, but in the way they are performed.

Both solitary and social play behaviors are widespread in mammals (Fagen, 1981). However, these behaviors can have different functions according to species, sex, age, relationship quality, group membership, context, and habitat (Breuggeman, 1978; Cordoni, 2009; Dolhinow, 1999; Pellegrini, Dupuis, & Smith, 2007; Poirier, Bellisari, & Haines, 1978). For this reason, the study of play joins and cuts across a variety of disciplines from developmental to evolutionary biology, from ethology to neuroscience (Pellis & Pellis, 2009). Hence, it is not surprising that comparative studies of play behavior can make contributions to a wide array of fields (Palagi, 2007).

Animal play can involve a physical activity (locomotor–rotational and acrobatic body movements) or might involve the use of objects. Both of these types of play can be carried out in solitary or social contexts. Obviously, it is often difficult to disentangle each type of play from the other, since they can be mixed together in extremely sophisticated (and fast!) sequences forming a single natural category (Candland, French, & Johnson, 1978; Thompson, 1998) (Figure 26.1). For this reason, no single, simple definition of play category is satisfactory (Power, 2000). Nonetheless,

categorization helps ethologists to identify, measure, describe, and quantify, in a more or less standardized way, the different playful activities of animals.

This chapter deals with some aspects of solitary and social play in animals, including humans. First, I begin by describing solitary object play and the potential implications it has in individual cognitive development. I then turn to discussing the few quantitative studies published on solitary locomotor–rotational (SLR) play in animals. I propose that SLR play can be a prelude to *social* play. Finally, I conclude by outlining the importance of immature social play in scaffolding adult behavior and social competence.

Solitary Object Play and Its Implications in Cognitive Development

Exploration, object play, and tool use are all activities which animals perform with objects. Due to the absence of clear-cut components, object play can be confused with exploration and tool use (Ramsey & McGrew, 2005). However, a tentative distinction between exploration and object play is possible when the diversity of their functions and their action-sequence modalities are considered.

When *exploring*, animals acquire information on the environment in which they live, thus reducing uncertainty. The apparent goal is to familiarize with a novel object or situation in order to gain the advantage of knowing more about it (Power, 2000). Therefore, in evolutionary terms, exploration is a *receptor* activity which has likely been favored by natural selection because of its survival functions (e.g., locating food, escaping from predators, stimulating learning, exploiting the environment in an effective way). From an operational point of view, exploration (i) consists of prolonged, stereotyped actions involving different sensory modalities; (ii) tends to decrease over time; and (iii) is insensitive to the ethological process known as *habituation*. A novel object is generally approached in a very cautious manner until the object becomes familiar to the subject. The body posture is nervous and tense, and the first approaching phase is characterized by a change in heart rate and respiration, the physiological changes which prepare the animal for an immediate and fast reaction. Lorenz (1956) observed that, when encountering a novel object, ravens first flew up and looked at the object for a long period of time before approaching it. Geladas (*Theropithecus gelada*), a species of Old World monkey found only in the high grassland of the deep gorges of the central Ethiopian plateau, require at least three different phases of familiarization when approaching to a novel object. When new stones were introduced into their enclosure, both juvenile and adult geladas first inspected them visually at some distance, then sniffed and touched the stones, and finally began to mouth and manipulate them (Palagi, personal observation). Generally, in the presence of a novel object, when the three steps were far from being overcome, primates experience an internal motivational conflict and begin to perform some self-directed behaviors such as scratching, gravel digging,

and self-grooming, which are generally considered behavioral indicators of anxiety in primates (Norscia & Palagi, 2011; Troisi, 2002).

Object play, which generally follows an exploration phase in animals, differs from exploration at both the functional and operational levels. Animals generally prefer to play with conspecifics (Cordoni & Palagi, 2011) because a *living playmate* provides a greater variety of feedback compared to inanimate objects. However, when playmates are absent, playing alone with objects can be a good substitute and may lead to the development of useful behavioral traits. For example, a sex bias in playing with sticks by wild juvenile chimpanzees has been discovered. Compared to males, females frequently tend to carry sticks in a manner evocative of rudimentary doll play, which closely resembles those of young female human animals. Kahlenberg and Wrangham (2010) suggest that this female play practice might be linked to a female's innate interest in infant care, with stick-carrying being a form of play-mothering.

During object play in animals, objects are used to create novel, uncertain, and challenging situations, which animals have to cope with (Špinka, Newberry, & Bekoff, 2001). This is self-rewarding for the subject that, concurrently, can assess and improve its motor/cognitive abilities; in this sense, object play is an *effector* activity. One of the most elucidating examples of the use of objects to create uncertainty can be found in bonobos (*Pan paniscus*), our closest living nonhuman primate relative. During play sessions, bonobos like to walk on horizontal branches with their eyes covered while trying to maintain equilibrium and to avoid falling down. During their *blindman's bluff* game, they cover their eyes with large leaves or cloth while trying to catch playmates (Palagi, personal observation). It is therefore clear that the object is a means to create a novel, self-handicapping situation, which the subject has to cope with.

During object play, the object might be licked, tugged, shaken, chased, thrown, and recovered, in fast, repeated, and brief idiosyncratic sequences, which do not have any apparent short-term functional goal. The long-lasting sequential structure, which characterizes object play, differs from object exploration. In fact, there are typically no signs of distress in the animal during object play; instead, the animal approaches the object in a relaxed mood, suggesting the relative safe condition of this playful context.

When an animal manipulates an object from the environment to modify the form, position, or condition of another object, we can speak about *tool use* (Beck, 1980). Although tool use is known to occur in species ranging from naked mole rats (Shuster & Sherman, 1998) to owls (Levey, Duncan, & Levins, 2004), in nonhuman primate species, we can find the best examples of tool use both in captivity and in the wild. Some primate species show a true understanding of the contingencies of a tool use task. For example, wild capuchin monkeys take the intrinsic characteristics of a tool into account when choosing a hammerstone to crack a nut (Visalberghi et al., 2009). Among the apes, chimpanzees are the most accomplished tool users (McGrew, 1992; Whiten et al., 2001). Recently, it has been observed that chimpanzees use tools to hunt prey (Huffman & Kalunde, 1993; Pruetz & Bertolani, 2007). Tool construction was observed to involve several steps, including trimming the tool tip to a point. The modified sticks were used in the



Figure 26.2 An adult female plays with a bucket. Photo credit by Elisa Demuru.

manner of a spear, rather than a probe or rousing tool. Contrary to object play, tool use is a goal-directed behavior with a clear immediate function to the observer.

The evolutionary explanation of juvenile *object play* focuses on its role in providing exercise for certain behaviors needed as adults (Ramsey & McGrew, 2005). As for object play in the adult phase, it can help adults to preserve their basic motor/cognitive skills, thus maintaining behavioral plasticity (Figure 26.2). As a matter of fact, independently of animals' age, object play can be potentially helpful when new environmental stimuli emerge. Stone handling (SH) provides some interesting insights into this topic (Huffman & Quiatt, 1986).

SH: A case study of solitary object play

SH is a peculiar form of solitary object play that consists of highly sophisticated manipulating actions, which an individual can perform when alone or when in proximity with conspecifics (Huffman, 1984). SH has been widely demonstrated to be culturally transmitted across generations in captive and provisioned free-ranging troops of the *Macaca* genus (Huffman, Leca, & Nahallage, 2010; Nahallage & Huffman, 2008). Recently, Huffman and coworkers found that, as it occurs for some forms of play in humans, Japanese macaques have SH cultures: different study groups showed "distinctive levels of clustered SH traditions" (Leca, Gunst, & Huffman, 2007). The authors found not only that SH differed in its frequency across different macaque troops but also that it had a different behavioral structure, with each troop showing a distinctive set of patterns (Leca et al., 2007). This suggests that solitary object play, a culturally transmitted activity in macaques, is a means by which animals can learn and adopt new forms of behavior. The *motor training hypothesis* predicts that object play can strengthen the neuromuscular system (Bekoff & Byers, 1981; Byers & Walker, 1995; Fairbanks, 2000). It has been reported that object play climax coincides with the period of neuronal differentiation, rapid synaptogenesis, and the acme of cerebral activity (Jacobs et al., 1995; Rakic,

Bourgeois, Eckenhoff, Zecevic, Goldman-Rakic, 1986; Zecevic, Bourgeois, Rakic, 1989); thus, playing with objects may have a role in shaping the neural connections underpinning fine-hand movements (Fairbanks, 2000; Nahallage & Huffman, 2007). The basic functions of SH, as it occurs for other kinds of solitary play, vary according to the structure of the behavior itself, social and environmental contexts, species characteristics, and age of players (Nahallage & Huffman). The acquisition of *new* forms of SH is seen in animals below the age of 5 years; however, those adults who acquired SH during their infancy still continue to practice it. Recently, it has been supposed that SH may undergo a functional shift from neural-motor development in youngsters to basic maintenance of neurophysiological pathways in adults. SH bouts of adults are generally shorter than those of immature individuals even if more complex and sophisticated in the form. Adult SH demands more concentration effort as it is witnessed by the fact that adult subjects prepare their SH location by selecting stones in different parts of the enclosure and carrying them to the preferred areas. Adult SH typically occurs in the afternoon after all other social activities have taken place (Nahallage & Huffman). Nahallage and Huffman interpreted their findings as being driven by a need for adults to concentrate on a solitary activity after *social overloading* from the long day of interactions with others. However, the primary function of adult macaque SH seems to be linked to the maintenance of neurobiological potential and health (Nahallage & Huffman). As it occurs in humans, elder macaques experience memory decline, cognitive impairment, and pathologies of the prefrontal cortex (Hof & Duan, 2001). In humans, the risks associated to these kinds of neuronal degeneration are limited by engaging in concentrated mental, leisure activities (Verghese, Lipton, Hall, Kuslansky, & Katz, 2003), which can stimulate the growth of new neural networks which bypass the damaged brain areas (Coyle, 2003). Due to the strong similarity of the brain organization of human and nonhuman primates (Hof & Duan, 2001), such manipulating, leisure activities may have similar functions in the adults belonging to the diverse primate *taxa* (Nahallage & Huffman) (Figure 26.3 and Figure 26.4).

As a whole, SH playful activity, even when it is performed in a solitary way, can represent an important means to acquire environmental competence (juvenile phase) and to maintain good levels of neural activity (adult phase).

SLR Play

Locomotor–rotational play (LR play), a very neglected topic in the array of studies on animal play behavior, can be distinguished in two different categories: (i) SLR play, during which animals engage in running, jumping, rolling, twisting, somersaulting, and pirouetting, and (ii) *social* LR play, during which individuals chase each other (Burghardt, 2005; Palagi, 2009; Power, 2000). SLR play is present in the juvenile phase of several species of ungulates, carnivores, pinnipeds, rodents, and primates and tends to decrease with age in almost all species (Byers, 1998). SLR

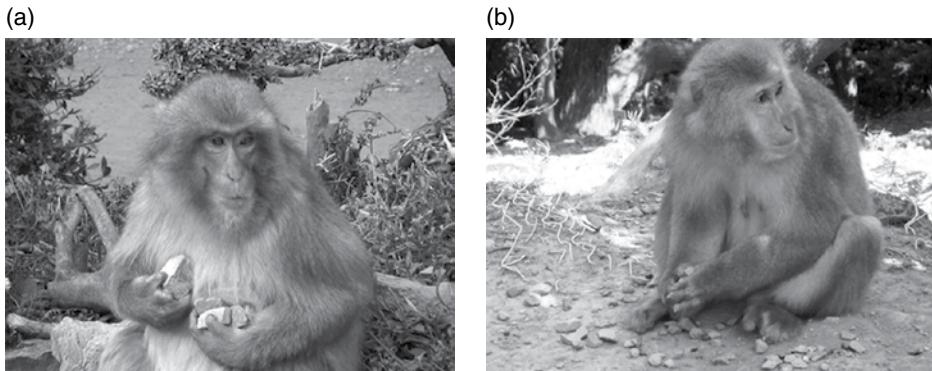


Figure 26.3 SH phases of Japanese macaque (*Macaca fuscata*) in Arashiyama: (a) collecting and (b) manipulating stones. Photos credit by Charmalie A. D. Nahallage and Michael A. Huffman.



Figure 26.4 An example of SH in human children from Berenty (South Madagascar). Photo credit by Elisabetta Palagi.

play can show different degrees of versatility and variety as a function of the species involved and of the environment where it occurs (on the ground, in the trees, in the water, etc.). Juvenile ungulates, rodents, and primates stand out for the complexity of their SLR sessions, which are particularly frequent during the sensitive period of maximum development of the muscular–skeletal system (Byers). Particularly, in primates, the modified repetition of sequences, the diversified interactions, and the innovative behavioral patterns are also important qualities of SLR play and are essential to the adaptive plasticity of behavior (Fedigan, 1972).

The capacity to rapidly respond to sudden stimuli or to reacquire equilibrium from a disadvantaged body orientation is crucial during many different situations such as escaping from predators, getting advantage during a conflict, or catching a prey (Aldis, 1975; Špinka et al., 2001). In this perspective, pirouettes, somersaults, head rotations/headshaking, and other patterns of LR play would lead to both

immediate and delayed physical benefits; that is, the greater the complexity of SLR play, the greater the advantage to the animal (Petrů, Špinka, Charvátová, & Lhota, 2008). Primate SLR play is extremely acrobatic with individuals searching for the most self-handicapping positions and movements during their performances. It appears to be self-rewarding for animals as also suggested by the presence of playful facial expressions (see succeeding text).

In primates, SLR play generally tends to be more frequent during the infant and juvenile periods even though in some primate species adults may engage in solitary locomotor sessions. In wild chimpanzees, for example, the median frequency of pirouette episodes increased from early infancy, reached a plateau during the weaning period, and virtually disappeared after late adolescence (Nishida & Inaba, 2009), even though this kind of practice does not necessarily stop with the onset of puberty and can continue into adulthood. In fact, if it is true that physical training has delayed benefits, it is also true that its effects are not permanent as they tend to disappear quickly after exercise stops. Moreover, playing alone in an acrobatic way may have additional immediate effects especially in those species showing high levels of sociality and which base their relationships on a system of playful reciprocal trust like bonobos.

SLR play in the service of social play: A case study in bonobos

Many researchers state that imitation can play an important role in the social transmission of communicative signals and that imitation can be part of playing (see Miklósi, 1999, for an extensive review). From this perspective, the observation of another playing may increase the observer's behavioral propensity and motivation to engage in a play session. Adult bonobos often engage in solitary energetic sessions, where subjects challenge themselves in extremely acrobatic performances during which their vestibular apparatus (the sensory system, situated in the inner ear, which provides the leading contribution about movements and sense of balance) is strongly solicited (Palagi & Paoli, 2007). At every age, bonobos love to climb, jump, dangle, and pirouette from supports in the environment while twisting in an extremely rapid way. They often somersault on the ground covering several meters and alternate such performance with short and fast running bouts (Palagi, personal observations). Špinka et al. (2001) argued that self-handicapping movements and body positions used to practice for awkward situations can be considered as good precursors for signals of an individual's playful intention. In 2008, I decided to test the hypothesis of the social function of SLR play in adult bonobos. If, in adult bonobos, SLR play has an important role in soliciting a social play session (in a sort of *play for the sake of play itself*), the frequency of social play after a solitary play session should be higher than the frequency of social play recorded after other kinds of self-directed behaviors such as feeding, moving, and auto-grooming. I found that bonobos use this communicatory tactic to elicit a playful response in the receiver, that is, *play for the sake of play itself*. In fact, about

50% of the solitary play sessions were followed by social play. Moreover, social play was more frequent when preceded by solitary play than by other self-directed behaviors, and, particularly, the solitary play sessions directly preceding social sessions had higher rates of pirouettes and somersaults, which are the most self-handicapping play patterns adopted by animals. In fact, an animal, when pirouetting rapidly, cannot leap or run precisely due to the difficulty in evaluating distances and directions. When an observer detects a conspecific performing a self-handicapping movement, the non-harmful intentions are intrinsically available, and, consequently, the playful mood of the *sender* may infect the observer, thus soliciting its behavioral propensity to engage in play.

The capacity of the great apes to create or invent new communicative signals by modifying preexisting behavioral patterns (ontogenetic ritualization as defined by Tomasello & Call, 1997) is probably at the basis of this sophisticated use of solitary play in bonobos. A similar process can be found also in chimpanzees. Juveniles of this species may initiate a play bout by slapping the potential playmate. If the receiver realizes that a play interaction often begins with the initiator raising an arm in preparation for slapping, the former may anticipate by responding even when only the first part of the movement is performed. By noticing the anticipation of the receiver, the initiator may realize that the arm raising by itself is sufficient to elicit a playful response and thus, at some future encounters, use the same pattern to elicit play (Tomasello, Gust, & Evans, 1990). A similar mechanism can explain the use of pirouettes/somersaults observed in adult bonobos for *inviting* conspecifics to play. Although most evidence of ontogenetic ritualization is reported for immature subjects, it appears plausible that also adult apes are able to understand the cause–effect of a gesture, to anticipate its function, and, consequently, to use a modified version of that gesture as a communicative signal. A few years ago, my research group found a similar result in juvenile lowland gorillas, which used solitary play in a similar way as that described for bonobos (Palagi, Antonacci, & Cordini, 2007). We can say, therefore, that solitary play in some primate species can be a prelude to social play.

Why Study Playful Expressions during Solitary Play?

Charles Darwin in *The expression of the emotions in man and animals* (1872) was the first to provide accurate descriptions and detailed analyses of human facial expressions. Darwin underscored that human facial expressions have strong similarities with those of other animals. Such similarity represents a shared heritage of our species, which supports the evolutionary continuity between humans and other mammals. According to some, the origin of human facial expressions, such as smiling, dates back to an ancestral nonhuman primate (van Hooff & Preuschoft, 2003; de Waal, 2003). Due to the highly stereotypical and conservative nature of primate facial expressions, researchers have identified specific and similar facial

displays in related species (e.g., macaques, *Macaca* spp.; geladas, *T. gelada*; chimpanzees, *Pan troglodytes*; bonobos, *P. paniscus*). There are two neuroanatomical pathways to facial movements. One is a route through the facial nucleus in the pons of the brainstem, which regulates spontaneous and emotional facial expressions. Another one controls voluntary movements which can be produced through activity in the facial representation areas of the motor cortex (Parr, Waller, & Fugate, 2005). This last pathway underpins the capacity to voluntary control facial expressions which, in this case, are not necessarily linked to the emotional state of the subject.

In primates, several facial expressions can be observed during play (e.g., play face) and submission contexts (e.g., the bared-teeth display), and it has been hypothesized that they are homologous (and similar in their form) to laughter and smiling in humans (Preuschoft & van Hooff, 1995; de Waal, 2003; Waller & Dunbar, 2005). Playful facial displays, due to their interactive nature, are more common during social than during solitary play sessions. Yet, the great apes show play faces even when playing alone. In monkeys, the facial expressions are generally fixed, whereas in hominoids, they vary in intensity. Such variability in the intensity of playful facial displays appears to be strictly associated with the positive emotions experienced by the subject (Parr, 2003). This theory is supported by the observation that bonobos (like chimpanzees) sometimes exhibit a play face while engaging in solitary play, unlike macaques, capuchins, and marmosets (van Hooff & Preuschoft, 2003; de Marco & Visalberghi, 2007). Van Hooff and Preuschoft posited that these “private emotional expressions” may reflect a capacity for self-reflection or self-awareness, which are the precursors to more complex forms of cognition in social communication (p. 257). Recently, Pellis and Pellis (2010) demonstrated that the play signals or expressions may serve a self-regulating function in spider monkeys (*Ateles geoffroyi*). In this primate species, headshaking functions to facilitate amicable social contacts and occurs frequently during juvenile play fighting. Yet, juveniles also shake their heads during solitary locomotor play. Pellis and Pellis tested three different hypotheses to account for headshakes occurring in a solitary context: (i) the experience of the unexpected hypothesis, (ii) the immature misdirection of signals hypothesis, and (iii) the *whistling past the graveyard* hypothesis. The play as “the experience of the unexpected hypothesis” was found wanting because solitary headshakes were most frequent in early infancy, before the onset of the juvenile peak in play. The “immature misdirection of signals hypothesis” was also inadequate because the headshakes were correctly directed at conspecifics, but not at inanimate objects that were manipulated and mouthed. Both also failed to predict the occurrence of the observed solitary headshakes in adults. The hypothesis best supported by the data was that of *whistling past the graveyard*, which predicts that, under some situations, headshaking is self-directed to promote action and take heart when confronting contexts of uncertainty. In this perspective, facial expressions performed when a subject is engaging in a solitary activity generating certain emotions (both positive and negative) can be effective in maintaining emotional homeostasis in the subject itself.

In conclusion, the systematic study of primate facial expressions, body postures, and movements during solitary play could give interesting insights into animal emotion and cognition, thus making the behavioral separation between *Homo sapiens* and other mammalian species progressively subtle (Darwin *docet*).

Becoming Adults: The Importance of Social Play

In primates, solitary play is usually the first type of play to emerge (Fagen, 1981). Social play soon follows and tends to replace solitary play, peaking in frequency around the first year of age among medium-sized anthropoid primates (Govindarajulu, Hunte, Vermeer, & Horrocks, 1993; Zucker & Clarke, 1992). There is, therefore, a shift in the type of play with increasing age.

In primates, the neural areas involved in the motivation, frequency, and cooperation of social play are the amygdala and hypothalamus. The amygdala is involved in recognizing and generating emotions (e.g., Adolphs, 1999), which might include fear, anger, and anxiety (Adolphs et al., 2005; Davis, 1992). Moreover, the amygdala plays a role in regulating sexual play in adult primates that suggest its potential importance to the study of play evolution (Pellis & Iwaniuk, 2002).

Given its connections with other limbic areas and the prefrontal cortex, the hypothalamus is a crucial component of the limbic system and can modulate the neural activity in regions of the forebrain, such as other limbic structures and the neocortex (Lewis & Barton, 2006). Lewis and Barton found an evolutionary relationship between social play activity and the amygdala and hypothalamus. As these correlations do not hold for solitary play and as they persist after controlling for overall body and brain size, the authors suggested that the amygdala and hypothalamus are neural components associated uniquely with the performance of *social* play in primates. Further evidence of the involvement of these two brain areas in regulating emotions, cooperative propensity, and social play comes from Rilling et al.'s data (2012), who studied the neural systems underpinning social cognition in bonobos and chimpanzees. These two species diverged from a common ancestor with humans about 6 million years ago (Goodman et al., 1998) and from each other 1–2 million years ago (Becquet, Patterson, Stone, Przeworski, & Reich, 2007; Hey, 2010). Despite their phylogenetic closeness, they exhibit striking differences in their social behavior, with bonobos exhibiting more adult play (Palagi, 2006, 2011; Figure 26.5), a greater variety and frequency of sociosexual behaviors (Paoli, Tacconi, Borgognini Tarli, & Palagi, 2007), and higher tolerance levels (Hare & Kwetuenda, 2010; Hare, Melis, Woods, Hastings, & Wrangham, 2007). Rilling et al. (2012) found that bonobos' amygdala and hypothalamus were larger compared to those of chimpanzees.

These areas are sensitive to the changes occurring during the pubertal phase. For example, the sexual differentiation of the amygdala and hypothalamus correlates with surges in gonadal hormones, which may be due, in part, to the occurrence of



Figure 26.5 A sequence of R&T. Lingala, a subadult female, is play biting a hand of Nayemb, an infant female. Photo credit by Elisa Demuru.

play behavior itself, which in turn responds to gonadal hormones, influencing brain development prior to adulthood (Lewis & Barton, 2006). In this view, playing socially with peers during the juvenile phase seems to be crucial for primate brain development and acquisition of social competence. But how does immature social play increase adult social competence? In other words, what are the unique and long-term benefits of juvenile play?

There is evidence that the opportunity to engage in social play sessions with peers, even if for short-time periods, prevents juveniles from becoming socially incompetent (Herman, Paukner, & Suomi, 2011). For example, rhesus macaques deprived of social contact during the first year of life are able to develop a normal behavioral repertoire if they receive some *therapy* sessions during which they have the opportunity to play with socially experienced monkeys (Novak & Harlow, 1975; Suomi & Harlow, 1972).

Play deprivation experiments reveal similar results in rodents. If juvenile rats are reared next to a conspecific, but the two animals are separated by a wire mesh, so that they can see, smell, and sit close to each other, they also show the deficits associated with being reared in complete isolation. Moreover, normal juveniles housed for a prolonged period with a non-playful peer later themselves become socially impaired. These data strongly suggest that the lack of opportunity to engage in play, and not a lack of a generic social contact, determines a critical deficiency in animal social competence (Pellis & Pellis, 2009). And this is not limited to rats. There is a large body of research showing that shy-anxious children, who often do not have play partners, also tend to be socially unskilled (Bohlin, Hagekull, & Andersson, 2005; Stewart & Rubin, 1995; Weeks, Coplan, & Kingsbury, 2009 – see also Coplan & Ooi, Chapter 7, this volume).

Social play has also short-term benefits, and again data come from primates and rodents. Recent studies on these groups demonstrated a link between mild stress

and social play (Antonacci, Norscia, & Palagi, 2010; Klein, Padow, & Romeo, 2010; Palagi, Cordoni, & Borgognini Tarli, 2004; Palagi, Paoli, & Borgognini Tarli, 2006; Palagi et al., 2007; Pellis & Pellis, 2009). For example, in rats, a short period of social isolation determines an amount of social play when the temporary-isolated subjects are placed back with partners. Moreover, experimental studies revealed that rats treated with adrenocorticotrophic hormone (ACTH, a stress-related hormone) increased their play levels compared to those of saline-treated controls, thus suggesting that moderate amounts of stress or anxiety promote social play (Pellis & Pellis). Accordingly, in order to cope with forthcoming anxiety associated with the presence of food, captive primates increase their play levels during the time period preceding food distribution. Moreover, dyads playing during the pre-feeding time show high levels of tolerance around food (Palagi et al., 2004, 2006). By helping animals to dissipate tension at the short-term level, social play appears to represent a strategic toolkit to cope with mild stressful conditions. This is particularly interesting given the commonly held view that play is suppressed by stress – instead, it would appear that play regulates stress.

The Ontogeny of Play: Comparing Humans and Chimpanzees

Social play is a fundamental component of the behavioral repertoire of the youngsters of many species of mammals, including humans, and its developmental trajectories (onset, peak, and offset) have evolved in concert with the extension of the immaturity period (Fairbanks, 2000; Pellis & Iwaniuk, 2000). Social play is first experienced between mother and offspring (Biben & Suomi, 1993; MacDonald & Parke, 1984). Peekaboo, a typical mother–child game seen in humans, also occurs in the great apes as do other activities that involve bouncing, throwing, and swinging infants (Pellis & Pellis, 2009). Mother–offspring playful interactions represent for infants a good starting point to learn how to manage play sessions (fine-tuning) that will later be fully developed in interactions with peers (Tomasello et al., 1990; Tamis-LeMonda & Bornstein, 1993). Primate social play in older immature subjects (juveniles and subadults) also functions to establish a dominance order among individuals (Paquette, 1994). Individuals acquire information on the strength and weakness of group members by engaging in play fighting (chimpanzees, Paquette, 1994; humans, Pellegrini, 1995). Due to their phylogenetic closeness and prolonged immaturity phase (Burghardt, 2005; Palagi, 2007; Pellegrini et al., 2007; Power, 2000), chimpanzees and humans have similar developmental pathways for play.

In a recent study on the ontogeny of play in chimpanzees, we found that in both infants and juveniles, social play was significantly more frequent than solitary play. Infant chimpanzees engaged in solitary play sessions more frequently than juveniles did, whereas social play did not differ between the two age categories. Our finding on solitary play is in agreement with data coming from children

(Cordoni & Palagi, 2011). Even though comparisons across ages of different species have to be taken carefully, there is a good overlapping between the percentage of solitary play in infant (29.27%) and juvenile chimpanzees (14.45%) with those of preschoolers (0–3 years, 17–23%) and kindergarten-aged children (3–6 years, 17%), respectively (Rubin, Maioni, & Hornung, 1976; Rubin, Watson, Jambor, 1978). The tight age distribution of solitary play found in the two species can have a plausible explanation: solitary play in both humans and chimpanzees works in a period of high sensitiveness during which the performance of motor–rotational patterns can significantly alter development.

Behavioral overlapping in children and immature chimpanzees disappears when we focus on social play activity. The behavioral transition from solitary to social play in children occurs during the preschool period (Pellegrini, 2009), whereas, in chimpanzees, social play constantly covers a wider age range, from infancy (0–3 years) to juvenility (4–7 years). However, if within social play we consider play fighting (or rough and tumble, R&T), striking similarities between humans and chimpanzees can be found. In agreement with our findings, Scott and Panksepp (2003) demonstrated that R&T play is at a plateau until children are at least 7 years old.

Focusing on playmate selection in R&T practice, we found that chimpanzees invited peers to play more often than non-peers, thus suggesting a preference to engage in play with similar-size individuals. When playing with infants, juveniles have to self-handicap, promote reciprocal role-taking, and limit the number of types of patterns used. For this reason, for juveniles, playing with infants is not challenging enough, and, on the other hand, for infants, playing with juveniles is too dangerous (Mendoza-Granados & Sommer, 1995). Indeed, the functions of R&T in chimpanzees shift through the different developmental stages. Infant R&T has a role in socialization and in motor–cognitive development (Power, 2000), whereas, in juveniles, it includes competitive elements directly involved in dominance relationship establishment (Paquette, 1994; Pellegrini, 2002; Pellegrini & Smith, 1998). In humans, up to around 10–11 years, the great majority of R&T is for fun and enjoyment. During infancy, R&T can shift into real fighting, but this is due to a lack of play competence, characteristic of this specific age phase (Humphreys & Smith, 1987). On the other hand, human adolescent R&T is positively correlated with aggression and is negatively correlated with social preference, suggesting that play fighting contains a strong competitive component which can be used, in the future, to gain an advantage during real contests (Pellegrini, 1995).

In conclusion, like in humans, play in chimpanzees shows a number of changes, both quantitative and qualitative, across the ontogenetic pathway, thus suggesting that chimpanzee play can have different functions according to the developmental stages of animals. The fact that our closest living relatives share strong similarities in social play with children suggests that human play ontogenetic pathways, apart from being shaped by cultural elements, are also biologically rooted and hardwired.

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A View from Anthropology

Anomie and Urban Solitude

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The notion that modern cities – or, more properly, modern economic relations in cities, with their hypertrophy of calculation and contractualism (Mitchell, 2002) – might produce isolation, alienation, and personal disorder (or “anomie”) was a distinctive assumption made, and supported both philosophically and empirically, by early professional sociologists at the end of the nineteenth century. As the German sociological pioneer Georg Simmel remarked, registering the full onrush of the modern city in early twentieth-century Berlin, with its proliferating commodities, technologies, and speed and density of personal contacts, “one never feels as lonely and as deserted as in this metropolitan crush of persons” (Simmel, 1903/1971, p. 334). But within the same contexts of urban modernity, solitude was also embraced as a distinctive social possibility for some, as freedom for self-cultivation. The city provided the conditions for both the greatest separation and dismay and the greatest personal refinement and specialization. More recently, social media have attracted similar concerns, for with their simultaneous intensification and distancing of interpersonal contacts, they also present a paradox of increased choice and connection being paralleled by increased isolation and withdrawal.

In this chapter, I review anthropological works that examine such urban, mediated solitude as a lived experience and that seek to understand how solitude is shaped by distinctive social relations and means of interaction. I follow anthropological and sociological thought about solitude from early considerations of urban isolation and individualism to key recent contemplations of digital intimacy and neoliberal subjectivity. After considering some foundational definitions of solitude and anomie, I first address anthropological treatments that examine solitude as a category of social thought and move on to examine those that are based on ethnographic encounters with solitary people (who are often also socially marginalized and psychologically distressed). Finally, I survey recent ethnographic

theories that understand contemporary experiences of solitude and personal isolation through dominant economic and technological trends.

From an anthropological and sociological perspective, the lonely or isolated individual is always viewed as product of his or her society. For Simmel's French contemporary Émile Durkheim (1893/1984, 1897/2006), individual separation and isolation were not to be taken as the sign of personal failure or an absence of social relations, but were rather the result of specific pathologies in the modern forms of social solidarity, namely, in the division of labor and in urban cultural forms. Indeed, the remarkable insight that Simmel and Durkheim each gave expression to – that solitude and loneliness were a distinctive product, if not always a desirable one, of the novel forms of *social* organization of industrialism, capitalism, and urbanism – has decisively shaped sociological and anthropological arguments about modernity, the city, and moral personhood. More recently, intensified worldwide communications and the mediation of everyday life by *social networks* have raised a similar specter of increased personal separation and isolation, likewise attributed to changes in the tempo and quality of social relations. "Is Facebook making us lonely?" ask journalists and commentators (Marche, 2012). Beyond the possibilities for communication opened by intensified social connectivity, anthropologists and social theorists are beginning to realize that more difficult questions may need to be asked of our interconnected lives, parallel to the contradictory currents of social life in modern cities, such as whether the ever-increasing availability of media for socializing is affecting solitude itself, and thus the capacity to be alone and to think and feel by oneself (Turkle, 2011; see also Amichai-Hamburger & Schneider, Chapter 18, and Ducheneaut & Yee, Chapter 29, this volume). By treating solitude as something lived through and felt as a social experience, one that is neither solely a negative outcome of weakened social ties nor of new technological mediations of the same ties, recent anthropological approaches broaden our sense of what solitude is as social reality, how it relates to wider social and political forces, and even how it can sustain the individual in his or her social being.

Varieties of Solitude and Anomie

It is from Durkheim, of course, that we draw the term *anomie*, which is used across social science literatures to refer to the experience of chaotic, normless, and disaggregated social relations widely taken as characteristic of modernity and perhaps even more so of globalization. Anomie is not directly equivalent to solitude or even loneliness, but it is often used to describe a marginal figure who is poorly integrated into otherwise thick networks of social relations. Developed first in Durkheim's study of the forms of solidarity paradoxically produced by urban specialization and the division of labor in industrial society – forms of solidarity that he called *organic*, on the metaphor of a body with its diverse organs – *anomie* named a pathological form of this *organic solidarity* that resulted in individual

isolation rather than convivial cooperation (Durkheim, 1984, pp. 291–309). As he further developed the term in his study of the social forms of suicide and as it was appropriated into American social science, anomie came to be associated primarily with cities as social contexts of deviance and delinquency (I trace some of these appropriations of anomie in the sections that follow).

As with Simmel's account of urban specialization, however, Durkheim's notion of anomie was ambivalent, stressing as much the benefits that some – such as divorced women – might gain from being freed from social regulation and dominant power relations as the deviancy unrooted moral subjects may then be free to indulge (Durkheim, 2006, pp. 297–300). More importantly, even as these thinkers highlight the involuntary, constraining imposition of this solitude in modern society, they also stress that the rich interiority of the person is at stake, and implicated, in even the most apparently *external* forms of separation. For them, individuality and aloneness is always a plural experience, never simply contemplation of an autonomous self or removal from the urban crowd, but rather an experience deeply affected by other histories, alien images, and the residues of interpersonal relations, forming a fabric of uncountable connections and a rich resource for sociological reflection.

Of course, what Simmel and Durkheim each, in their way, registered was hardly novel in itself; philosophers have long toyed with the ironies of loneliness amidst a multitude or the richness of discourse and interiority experienced by a solitary thinker. However, these modernist sociologists gave both expression and intellectual form to a dynamic and paradoxical *social solitude*, a sense of the self as, at once, apart from others and yet simultaneously dependent on their constant presence in daily transactions (cf. Coleman, 2009). As distinct from the (apparently) solitary retreat of a lone thinker or the introspective reverie of those who seek freedom by meditating over their true and authentic self *prior* to social mediation, the urban solitude examined by Simmel and Durkheim is based on constant, unceasing exchange with others. As Raymond Williams has written about this theme in modernist literature, for the city dweller, the “man on the street,” solitude is a social state, “an active exchange, even an active community, within the imagined speech of thought.... The only knowable community is in the need, the desire, of the racing and separated forms of consciousness” (Williams, 1973, pp. 244–245). Similarly seeking to escape from the opposition of self and world by which much of Western epistemology is grounded, Merleau-Ponty's phenomenological emphasis on embodiment likewise situates the self in incessant and contrastive encounter with others. “Solitude and communication,” he writes, in the context of a reflection on the pitfalls of an epistemological solipsism, “cannot be two horns of a dilemma, but two ‘moments’ of one phenomenon, since in fact other people do exist for me.” He continues, “My experience must in some way present me with other people, since otherwise I should have no occasion to speak of solitude and could not begin to pronounce other people inaccessible” (Merleau-Ponty, 1962, p. 359). The anthropological accounts I survey here all rest on such a recognition that solitudes are always plural, are interdependent, and indeed can form the basis for a sociality of strangers.

Other Solitudes

Equipped as anthropology is with both a fully relational notion of the self and a method, ethnography, predicated on intensive interaction with other people, solitude poses some acute conceptual problems to the discipline. First, how is one to conceive of solitude as a social state, a phenomenon of a peopled life, a result of processes that are interactional and shared, without eliminating its distinctiveness as a real experience of *being alone*? Second, can we speak of a solitude which is not anomic, autistic, or otherwise pathological but at the same time does not immediately dissolve into the spontaneous harmony of separated parts (as Durkheim, somewhat optimistically, at first imagined the operation of organic solidarity)? One answer is to evade the experiential questions entirely and examine solitude primarily as a category of social thought. Thus, religious systems, philosophical speculations, and biomedical materialisms all can be explored for how they frame and organize solitude differently, from the meritorious retreat from the world in contemplation and religious asceticism, to egoistic separation from it (often, in order to act upon the world from a position of Archimedean remove), to our more recent folk theories of neurological dysfunction that ground social isolation in a prior biochemical imbalance or neuropsychological condition.

When solitude is, thus, *thought* in society, it is often marked and even valued for its difference from the secular routines of production and reproduction and gains a kind of critical force from that difference. Indeed, the French anthropologist Claude Lévi-Strauss once went so far as to speculate that a dream of solitary self-sufficiency haunted all societies, in some atavistic core drawn from common mythologies or from the hard experience of the social world. *Social man*, he wrote, with a Gallic universalism, lives in hope for an impossible world where one could live apart and *keep to oneself* ("un monde où l'on pourrait vivre entre soi") (1969, p. 497, emphasis his; French original, 1967, p. 570). The realizations of this hope have been various, from communities that celebrate the heroic separation of "world renouncers" to the more recent fascination with neurological disorders like autism. These expressions of a collective yen for solitude have intrigued anthropologists most concerned with integration, dependency, and belonging.

For example, the anthropology of India has long stressed that, in a world of hierarchical social relations, adopting institutionalized roles of mendicant and holy man could often offer a pathway to individual autonomy, as well as a means of survival outside the dense connections of a local community, via renunciation and refiguration of relations of dependency. More importantly, the "world renouncer" provides those inside social roles a distinctive position from which to reflect on "caste society" (Dumont, 1980; Parkin, 2002, p. 85). A similar critical value is assigned to autism under the dominance of contemporary biomedical materialisms which too narrowly bound the range of "normal" sociality and pathologize both mild and severe deviations from routines of interaction.

Accordingly, the anthropologists Elinor Ochs and her collaborators, working within the canons of psychological and medical knowledge production, and Richard Grinker, writing more as a cultural critic and father of an autistic daughter, have lately stressed the need to explore the sociality of autistic individuals – some of whom are severely impaired in their use of language and their ability to relate to others. They argue that by revisiting autism, both the development and scope of the diagnostic category and the distinctive experiences and communicative repertoires of those at first marked out as simply “lacking” social skills, we may reflectively construct a new understanding of the limits and strains of mainstream social existence and what we mean by “sociality” (Bagatell & Solomon, 2010; Grinker, 2007; Ochs & Solomon, 2010).

It is thus a paradoxical benefit of anthropological thought, committed to investigation of the cultural context, content, and connection of the person to other similarly constituted persons – to the study of *social life* – that it is still able to identify and preserve instances of solitary separation and to investigate the social value they bear. The solitude of the mendicant, the hermit, or even the apparently “abnormal” individual often can be found to offer a critical position relative to the exactions of society. But this anthropological approach is not merely a matter of cataloguing forms and types of socially valued, or pathologized, separation from norms. In the remainder of this chapter, therefore, I examine ethnographic soundings of solitude, isolation, and marginality that echo these analytic framings of solitude as categorical reality. In these ethnographic figurations of solitude, it often initially appears as a personal failure, a symptom of mental illness, and an urban *problem*. Yet these ethnographic approaches diversely embed and contextualize solitude as personal adjustment to pathological social conditions; as a political and economic dominant of modernity; as a philosophical and speculative necessity, a tonic against the isolating effects of society itself; or finally as an individual struggle for meaning in the face of changing conditions of existence (this last being one way we can read *anomie*).

Urban Scenes of Anomie

In the disciplinary genealogy of urban anthropology, solitude first flourishes as a topic of critical reflection in the urban sociological literature of the early twentieth-century American city. Working in the 1920s and 1930s, amidst massive urbanization and in-migration, and drawing on an already-rich German tradition of sociological writing (Frisby, 1985; Hannerz, 1980), the Chicago School of sociologists trained their attention on places where people were lonely, isolated, or adrift. Often partly employed as journalists, as social workers, or, in at least one case, as an investigator for the Juvenile Protective Association (Fritz, 2010, pp. 17–45), these young sociologists aimed to identify the distinctive populations of the city. They surveyed the new populations of industrial urbanism, the social forces that

brought them as migrants to the city, and the institutions in which they lived. They explored the social worlds of the hobos and the bohemians, the small-town boys and girls who arrived on every train in search of new prospects, the vast enclaves and encampments for transients, the rooming houses and the employment bureaux, and (famously) the taxi-dance halls where single men paid “ten cents a dance” to professional women dancers (Anderson, 1923; Cressey, 1932). These sociologists went after the “world of the rooming-house man” and his nighttime search for companionship or heart-tugging stories like that of the “charity girl” who finds herself alone and without friends in the big city.

The first-person account of one such charity girl features prominently in Harvey Zorbaugh’s social ecology of Chicago, *The gold coast and the slum*, in which the girl narrates a series of personal defeats that left her dreams dashed and her life, particularly her sexual morals, in disarray. Alone in the city, she turns for support first to her own labor power, then draws on the resources of her sexuality (contracting a kind of temporary marriage in exchange for a place to live), and finally, it is implied, falls back upon the charitable associations of the city (Zorbaugh, 1929).

For the early Chicago School sociologists, such solitude presented more than just experiences that could be quantified, isolated, and then added up. Instead, living alone in the rooming houses or amidst transient populations, in places that were “in no sense a social world” (Zorbaugh, 1929, p. 82), represented alternatives among a wide array of adaptations to a problematic social reality, the *city*. Solitude in the city was part of the political problematic of the city itself, one which raised, insistently, questions of how we are situated relative to each other in modern society. Zorbaugh and his advisor Robert Park both stressed the inapplicability, as they saw it, of community-based norms of democracy to the vast, disaggregated society of the great city. Park wrote that the city is “remarkable for the number and kinds of people crowded together in physical proximity, without the opportunity and, apparently, with very little desire for the intimacies and mutual understanding and comprehension which ordinarily insure a common view and make collective action possible”; he concluded gloomily that, sooner or later, urbanites would witness “all traditional forms of local government fail or break down altogether” (in Zorbaugh, pp. vii–viii).

By the late 1930s, however, though much remained constant in the framing of the Chicago School project, the emphasis shifted from the political to the personal and more broadly “social” costs of city life, measured as disease and deviance (Faris & Dunham, 1939). In a retrospective theoretical summary of the work undertaken by the Chicago sociologists, Louis Wirth stressed the thin and weak relations he took to be characteristic of the city: “Personal disorganization, mental breakdown, suicide, delinquency, crime, corruption, and disorder might be expected under these circumstances,” he wrote (1938, p. 23). At the same time, Robert Merton elaborated his theory of social-structural conflicts or strain impelling anomie and social – if not personal – dissolution and disorganization; his

theory established what would become the characteristic professional focus of urban sociology on social isolation, deviance, and their shared roots in the anomie social relations of modern urban society (Merton, 1938).

By contrast, urban anthropology has retained the early Chicago School emphasis on urban political belonging and on specific adaptations to a problematic social reality. Work in the field has usually combined experiential research with a consistent political focus, both broadly conceived as a mission to redress inequality (especially in light of the racial segregation characteristic of American cities) and more narrowly construed as analysis of the institutions which actually foster participation and belonging in cities (e.g., Sanjek, 1998). By the time that Ulf Hannerz (1969) was exploring the internal tensions of race and urban order in a "ghetto" neighborhood in Washington, DC, and Sally Merry was focusing on how people in 1970s Boston managed the anonymous danger presented by strangers (Merry, 1981), a distinctive allegorical inversion of urban modernity was the dominant trope in urbanist anthropology. Urban anthropology in this *on the streets* tradition not only tabulates and isolates the forms of social disorder but sets an intimate involvement with others (on the part of the sociologist or anthropologist and by proxy the reader) against the segregating effects of disciplinary authority and the corrupting personal dissolution of anomie (see Karpak, 2010, for further examples).

More recent ethnographers doing fieldwork with homeless, isolated, or marginally housed and socially disconnected men and women aim to highlight the worlds of coherence, social richness, and individual self-worth that such people construct in constraining and difficult circumstances (Bourgois & Schonberg, 2009; Garcia, 2010; Gowan, 2010). The techniques of this ethnography rely on personal histories that are much richer than those offered for the stock characters of the solitary *dwelling-house man* or *charity girl* but equally driven by conventions of ruptured morality and personal deviance compensated for by honor and self-sufficiency. Such ethnographic works, moreover, emphasize the intense subjective reality of the hallucinatory worlds and demanding bodily existences which are lived out on the streets or in addiction, through accounts of selfhoods which do not fall into coherent life histories or conform to public standards of rationality.

Much more directly about solitude – framed as marginality, chronic illness, or isolating dependence or addiction – than about relationality or intimacy, these ethnographies have still placed a strong emphasis on the political-economic forces which frame these experiences and constitute the margins where these subjects dwell. Not incidentally, those psychological disorders (such as schizophrenia) which most clearly and radically separate the individual from the collective and which have historically been associated with marginality, homelessness, isolation, and alienation are a recurrent theme in anthropological accounts of marginality as social isolation and solitude. Yet even as these ethnographies stress the lived reality of psychic and social isolation, they explicitly distance themselves from the norms of individual-focused clinical medicine, with its case-histories,

enframing biological theories of causation, and pharmaceutical theories of treatment (Martin, 2007). Rather, these ethnographers seek to ask questions about shared and routine experiences and cultural logics shaping what are otherwise idiosyncratic and isolated selfhoods.

Such a phenomenological approach to illness, isolation, and disorder was pioneered by Robert Desjarlais (1997) in his moving study of a shelter in Boston. The mobile populations of homeless men and women who live in the shelter are set apart, systematically and through multiple codes of language, behavior, and even architecture, from the norms and codes that shape the society of reason and production. The very architecture of the shelter, housed in a semi-abandoned state office building, shapes experiences of danger, marginality, and confusion which cohere as the underside of the modernist certainties ideally promised by the state (Desjarlais, 1997, pp. 44–65). The street-shelter nexus, he points out, is very accurately described by the paranoia and sense of isolation of those labeled *schizophrenic*, and constitutes an environment of unpredictability, instability, and enforced mobility between insecure locations. These men and women might, indeed, suffer primarily from being too closely connected to the social world of the streets, rather than being isolated from it by psychosis; “the longer they lived on the streets, the less they lived as social beings” (pp. 114–122). Meanwhile, the life of predictable habit, routine, and sincere connection between expression and action insisted upon by those who run the shelter imposes a model of personhood which is distant from the residents’ daily struggle for coherent life and meaning on their own terms – idiosyncratic, individual, and isolating as that could often be. “The more sincere I am,” Desjarlais quotes Roland Barthes as saying, “the more interpretable I am.” The homeless residents of the shelter are enjoined by rules and regulations to strive for that interpretability. Desjarlais prefers to dwell with the residents where they already are “struggling through” and to attend to their concern with what he terms “barter, ragtime, and the day and the cigarette at hand” (Desjarlais, pp. 181–183).

In a series of recent articles, Tanya Luhrmann (e.g., 2007, 2010) has also stressed social causes for the dissociation, lack of coherent personal narrative, psychosis, and hallucinatory consciousness which she saw in women at a homeless shelter in Chicago. For Luhrmann, as for Desjarlais, much that we may consider schizophrenic behavior can – without doubting its reality or its diagnostic significance – be explained and understood as a result of repeated and routine experiences of *social defeat* in interactions with shelters, with mental health and social welfare bureaucracies, and with other residents of marginal neighborhoods. Luhrmann points to “the daily constant grind of humiliation, repudiation, and rejection that these women experience” as “individuals caught in webs of human relationships that can strangle the vulnerable and weak” (Luhrmann, 2007, pp. 162–163). The verbal and mental isolation which is taken as a primary *symptom* of internal or mental disorder is thus reevaluated as a positive response to an experienced world, an active withdrawal which has both internal coherence and external communicative validity – a finding which resonates with Ellen Corin’s long-term

work with schizophrenic individuals in Montreal, in which she documents their “positive withdrawal” and choice of solitude (Corin, 2007). By following the pathway of such a “new epidemiology” of psychiatric illnesses, Luhrmann has written, anthropologists have been led to “confront the social dimension of our bodily experience in a manner as arresting as when Freud first suggested that illness was intrapsychic and interpersonal” (Luhrmann, 2010, p. 165).

Likewise, João Biehl’s eloquent first-person ethnography of Catarina, a woman living alone in a charitable home for those abandoned by their families in Brazil, demonstrates that it was the systematic interpretation of her experience through the lens of mental illness (by her relatives and her caregivers) that left Catarina, positively bereft of social relations, as a patient of a psychopharmaceutical regimen (Biehl, 2005). Biehl explores the long, painful abandonment of Catarina by both family and social welfare institutions, developing a critique of cultural logics – running from the intimacies of the Brazilian family to the large-scale triage of the state’s medical bureaucracies – that produce *zones of social abandonment*. He shows how, in cases like Catarina’s and many others, a diagnosis of mental illness is preferred over physical illness – with its attendant responsibility of biomedical care – or a social understanding that would have stressed fractured family relations, licensing her isolation as a nonrational, nonsensical person. Ultimately, he examines Catarina’s solitude as a dynamic, lived experience, one in which her personhood is maintained in daily struggle, while his own investigation of her medical history reveals an underlying degenerative neurological condition that is a catalyst for her broader, equally real social condition of abandonment.

If the subjects of the Chicago School ethnographies were left in solitude by weak or fragile social connections, the subjects of all the newer ethnographic work reviewed in this section are – in a way we might identify as Durkheimian – bound to their isolation by a concatenation of positive social forces. Of course, to say their condition is socially produced is not to say that it is wholly attributable to particular social or political arrangements – there is an element of contingency and of dynamic interaction between etiological factors here.

Neoliberal Solitude

The homeless, unsheltered, and often uncared-for and lonely persons who are at the center of the ethnographies by Desjarlais, Luhrmann, and Biehl by no means represent the full flourishing of human capability. These are wounded existences, lives diminished to the long littleness of mere duration, who are “struggling along”, in the eloquent phrase of Alice Weldman, one of Desjarlais’s informants (Desjarlais, 1997, p. 19). However, the isolated condition which initially strikes one as the condition of these *patients* of psychopharmaceutical regimes, subject to a shelter’s or an institution’s disciplinary care, bears a striking resemblance to what another vein of political theory and ethnography explores as the characteristic and usual

experience of modern persons, as subjects of a solitude imposed by power (Sennett & Foucault, 1981).

Michel Foucault's influential account of modern disciplinary institutions – schools, asylums, workhouses, and prisons – identified in all of them a technique of isolation and separation that, for him, was best summarized by a model prison dreamed up by the early nineteenth-century philosopher Jeremy Bentham (Foucault, 1995). The institutionally-produced solitude of the modern subject mapped by Foucault, not incidentally, finds a most striking contemporary iteration in Lorna Rhodes' ethnographic inquiry into supermax prisons and new penal technologies of solitary confinement, which seek to reproduce what she and others have called a *punitive individualism* (Rhodes, 2004, p. 84). Such powerful techniques for producing moral solitude have a wider social and political application, however, in contemporary neoliberal political-economic management strategies, which like Foucault's prisons and work-houses operate by privatization, individualization of risk, and a stringent focus on the autonomous person as the source and site of all agency (Gershon, 2011; Harvey, 2005).

The formal view of an atomistic market society comprised solely of rational individuals, which is the basis of much modern economic theory, at its extreme tips over into an terrible, icy, calculating, and violent world of *no relations at all*, one that we can, borrowing a turn of phrase from Clifford Geertz, call "Bentham's dream, Foucault's nightmare" (2000, p. 139). The "limit to which" such an abstract sociality is directed, as Peter Bearman notes, is a pure heterogeneity, "in which there are no groups larger than the individual, such that all relations are instrumental exchanges through which individuals use others to achieve their unique ends" (Bearman, 1991, p. 503; Gellner, 1998).

Not all analysts arrive at such dour conclusions about the institutionalization of individuality and its personal costs. For example, Eric Klinenberg argues in his recent sociological study of the increase in solo living in American society that living alone does not, experientially, produce the kind of social isolation nor political collapse that was feared by Chicago School sociologists nor the kind that is diagnosed by more contemporary theorists who worry about the decline of social capital and an erosion of the conviviality and associational base of American civic life. For Klinenberg's interviewees, living alone is a choice and an opportunity, characterized by time to invest in one self, and is balanced by the cultivation of social relationships and activities (Klinenberg, 2012).

Klinenberg's interpretation of living alone effectively turns the older argument about anomie and its social consequences on its head, situating solo living as the *realization* of American individualism and the rising rates of single-person households as the sign of American success as an affluent democracy. Indeed, Klinenberg is notably optimistic about the promise of technology to provide companionship for solitary people, in the form of robot caregivers or simply social media, though he does not address the parallel fears of technological surveillance that have been raised by other commentators. The descriptions of solo living that Klinenberg

collects express an ideological affirmation of neoliberalism's assumptions about the autonomy of the self. By contrast, more in line with Foucault's inquiries into modern subjectivity, recent ethnographic approaches to neoliberalism focus on the models of personhood that it is based upon, and the forms of social practice – from home to work to school – which forge this novel, and markedly political, conception of the self as one, apart from others.

Marked by an ethic of separation and by a preference for contractual rather than political or juridical relations (let alone relations of love, dependency, or guilt), neoliberalism is visible not only in the rise of *living alone* but in the comprehensive effort to individualize and monitor every social transaction and ultimately to price every relationship. We may think of new metering technologies that regulate the flow of everything from electricity to information in ever more precise ways; the itemized bills we receive from every hospital visit; the constant updating of credit scores and recourse to them even within long-standing client relationships; or any of a range of other devices by which a moment of assessment now intervenes across any and all relationships, marking each transaction as one in a disconnected series of contracts, each with their unique price (Collier, 2011).

Neoliberalism's distinctive orientation to the self, in contrast to liberalism, is not to treat selfhood as a site or center of motivation, will, and labor power – to be variously guided, disciplined, and exploited – but rather as a site of reflexive *self-investment*. The neoliberal self, as described in a number of studies of schools, workplaces, and, most importantly, traders, executives, and entrepreneurs in new financial markets (Cahn, 2011; Ho, 2009; Urciuoli, 2008; Zaloom, 2006), is constituted by a fungible set of *skills, positions, and knowledges*. The person as experienced from within neoliberal forms of social organization is a contingent and ever-changing combination of agency and capital (primarily intangible capital) or, like a corporation, an assemblage of values in search of maximal return.

Perhaps the most isolating consequence of this broad set of ideologies and practices is that collective solidarity and mutual aid as enshrined in the classic insurance schemes of the welfare state have been set under attack by the notion that *selves* are responsible for their own care and survival – another iteration of *punitive individualism*, this time outside the walls of the prison house. This has intense psychological and political effects, as real people – as opposed to the abstract *agents* of neoliberal theory – try to navigate the rapidly shifting demands of self-improvement and investment and to hedge against large-scale external risks over which they can exert no real control. Noelle Molé has tracked this transformation from the solidarity economy of postwar Italy to what she calls the *bachelor economy* of the country's present pursuit of economic reforms, including new neoliberal norms of temporary employment. She points out that the "new figure of the neoliberal economy is the elite bachelor-entrepreneur able to change partners with ease" (Molé, 2012, p. 382) and follows the rise of a new category of harassment and new psychiatric diagnoses which are explicitly associated with precarious employment conditions, as well as a new set of judicial mechanisms that try to

remediate such “existential damages”. As Molé demonstrates, behind the figure of the bachelor lies the reality of the single woman, the immigrant mother, the widower, or the unemployed college graduate, all of whom have had the promise of secure passage through the life course in the company of others – a generational cohort, a family, and a nation – diminished and now stand alone against a general precarity. (We might note that, in his own day, Durkheim too took the bachelor as the best representative of anomie individuality and its ultimate failure: “The bachelor... can legitimately attach himself to whatever he wants, he aspires to everything and nothing satisfies him” (Durkheim, 2006, p. 299).)

Neoliberalism thus elaborates a highly “reflexive” conception of agency, “in which people are subjects for themselves – a collection of processes to be managed” (Gershon, 2011, p. 539; Urciuoli, 2008). However, as Molé’s work indicates, this is not a *reflective* conception of moral personhood, one in which ends may be evaluated and set against any shared or individual project of an ongoing selfhood and identity. The result is a much more isolated, monadic conception of the whole person, itself an assembly, than classical liberalism ever contemplated, even in critiques of alienation; the self “owns itself as a business,” and neoliberalism thus is marked by a “moral paucity,” a lack of languages for connection, interdependence, and care (Gershon & Alexy, 2011, pp. 799–800). All contracts, ideally, can be quit entirely once fulfilled; outside the context of legally regulated contractual alliance, the self has no entanglements. In turn, time itself *contracts into* a series of individual moments, each one of which is an occasion for assessing risk (Zaloom, 2006).

As with the ethnographies of marginal persons surveyed earlier, however, the abiding ethnographic lesson here is the immense effort of will, intellection, and agency that is put into surviving, psychically, even within the most constraining and isolated of situations; “people continually struggle to make neoliberal principles livable given their other understandings of how one is social” (Gershon, 2011, p. 544). Neoliberal agency, and its privative notion of the self as a site of only short-term connections, cannot finally obliterate all the other ways in which real people, alone and together, are social beings. But in its refiguration of obligation as contract, dependency as risk, and time and self as partible and isolable, neoliberal conceptions of personhood pose challenges to the very reflective, perhaps even pensive and certainly intimate, social self that may be experienced in solitude.

Conclusions: Solitude Toward Difference

Social networks have developed in the past few years as novel digital media that promise, often explicitly, to respond to and ameliorate the classic modernist condition of anomie: social isolation, separation, and solitude. Digital technologies not only bring information to our homes and handsets, but they also create a virtual world for self-presentation and relational connection. For the theorist Sherry

Turkle, however, all the demands that digital communications now make in our lives have pushed “stillness and solitude” to the margins of everyday experience while installing a new ethic of constant self-promotion, a noisy clamor which leaves little room for engagement either with the self or with others’ distinctive, particular, and private selfhoods (Turkle, 2011, p. 434).

In contrast to solitude as something shaped and normed by social forces, Turkle seems to celebrate solitude as retreat from the demands of social interaction. However, Turkle draws on a psychoanalytic conception of self and solitude which resonates with the anthropological and philosophical literatures of social solitude analyzed in the previous sections. Moreover, her conception of solitude offers, importantly, another way to balance the value of solitude and the need for connection.

Digital media, in Turkle’s account, challenge solitude because they demand constant attention, and their interruptions introduce distance and discontinuity into the flow of experience. The flows of thoughts, of interiority, and of affects on which truly personal experiences are based, now, are tied to external demands and devices. The self and the world are forced into a new proximity. According to Turkle, digital media both intensify the quantity and reduce the quality of social relations, much in the way Simmel feared that the increased number of social contacts in the modern city diminished the depth of the individual emotional life; for Simmel, the ultimate outcome of urban experience was a flat affect and reduced imaginative engagement with other people, leaving one lonely. As Turkle stresses, however, the further point is that loneliness is nothing other than a “failed solitude” (2011, p. 462).

The failure that leads to loneliness in all the accounts of solitude collected here, then, is an absence of imaginative engagement with others (including with one’s own other selves, past and possible) on terms beyond the immediately given context and moment of interaction. In these accounts, solitude can only be known over time and through encounters with others. Reciprocally, knowledge of others requires the contrastive foil of solitude and separation (Briggs, 1970; Povinelli, 2006). Merleau-Ponty’s embodied phenomenology, discussed previously, likewise offers a vision of self-knowledge in contrastive encounter with others. Solitude, on these terms, becomes the *reflective* experience of the self *and of others* as socially constituted beings. As Merleau-Ponty is careful to point out, however, this is no justification for basing knowledge on introspection alone.

Solitude, in which I am “by myself,” is – as the ancient philosophers already knew – the state in which I am actually plural; it is only in conversation with others that I can, provisionally, become “one” again, one “unexchangeable person” (Arendt, 1973, p. 476). In sum, neither radical community nor radical isolation produces what solitude can provide. In political communion with others, I can only be the “artificial person” which is erected by legal norms, by citizenship, and by forms of civic recognition. In radical isolation, as we have seen with neoliberal forms of power, there is no self at all, just a series of discontinuous moments.

These are abstract poles, rationally constructed, between which some live more convivially and others more alone (Gellner, 1998). But given the extremes, it is no wonder that some should prefer the solitude of the lonely crowd, the cultivation of the self for no given end, and the solitude of the inactive and inoperative (Deleuze, 1997).

Social solitude, “being alone together,” offers a way to think about urban societies and other states of being and belonging, even psychologically extreme ones, while preserving difference and individuality. On these terms, another person’s solitude can be approached using all the traditional tools (and some less traditional) of the ethnographer. Foremost of these tools is copresence with the other and recognition of his or her difference, but shared silence is also included in the toolkit of ethnographic engagement. The anthropologist of solitude must understand that not all communication can be made coherent and not all action is offered in the sincere expectation that it will be interpreted. But even so, being alone together provides a starting point for exploring the other’s experience of solitude. An ethnography of solitude should, finally, explore the construction of various solitudes, as a social-theoretical matter, while remaining alert to the hints and traces of that radical alterity and even loneliness that other people always bear within themselves, which always exceeds our rational constructions and which can only be cultivated in solitude.

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A View from Sociology

The Role of Solitude in Transcending Social Crises – New Possibilities for Existential Sociology

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In this chapter, I explore how people employ solitude to confront social conditions that compel them to make sense of their place in society. By attending to this effort, I hope to contribute to the discourse of existential sociology, a branch of sociology that explores how people are “selves in various states of becoming, persevering, transposing, and dying” within the society that contains them (Kotarba & Fontana, 1984, p. viii). Specifically, my chapter aims to make visible the role solitude plays when prominent intellectuals draw their conclusions about the social world. The *atmosphere* of solitude as experienced by subjects – its existentializing moments – is a neglected area of study even though, as will be evident, it contains rich insights about how the self internalizes the human condition and material consequences of existing in society. By illuminating their narratives about society, I explain how the narratives fuse individuals and society in ways that are “structurally interdependent … interpenetrating,” an attribute already addressed by Edward Tiryakian in his timeless work *Sociologism and existentialism* (1962, p. 52). Indeed, for existentially oriented sociologists, the self assembles itself *in response* to society, an incisive observation made by Joseph Kotarba and Andrea Fontana in their important work *Existential self in society* (1984). For Kotarba and Fontana, “the existential self is the product of both experience *and* [italics added] the language used to render that experience understandable” (Kotarba & Fontana, 1984, p. xii). By exploring self and society where the line is blurred between the two, one of the founding figures of sociology, Émile Durkheim, notes: “We cannot live without representing to ourselves the world and the objects which fill it,” and by virtue of those representations, “we get attached to the world at the same time that we get attached to ourselves” (cited in Tiryakian, 1962, p. 48).

Because the discourse of existential sociology has yet to fully give an anatomy to conditions of solitude where existentializing is posited to occur, I begin by critiquing how the highly empirical variant of sociology tends to view society as an *outside* phenomenon. This sentiment is shared by Steven Shapin (1990), who noted that this overwhelmingly large and frequently acute entity we call society can been internalized inside individuals as well, a theme he explores in the context of seventeenth-century England. A discussion of how solitude was addressed beyond the seventeenth century follows where I discuss how social thinkers or intellectuals have attended to forced solitude in crisis situations. Particular attention will be paid to how their social narratives display existential elements of happiness, passion, and hope, along with angst, despair, and alienation, all of which provide critical *social* knowledge (Corrigan, 2008). This task, I concede, is rather challenging: a 2011 *Boston Globe* article which highlighted the transition in the social sciences toward a more favorable view of solitude still emphasized how positive experiences with solitude was one that was based on choice; that is, someone in *forced* solitude would presumably not experience its beneficial effects (Neyfakh, 2011). My penultimate task examines solitude's epistemological component of *surrender and catch* – a method propounded by sociology of knowledge¹ thinker Kurt Heinrich Wolff (1912–2003) (epistemology is that branch of philosophy that examines what knowledge is and how we come to know about this knowledge). For Wolff, *surrender and catch* is an epistemological method that can seize the totalizing experience and realization of one's predicament in the existence and web of life, an experience that blurs the line between self and society. Wolff noted how such episodes can stem from life experiences that are joyful *and* stressful (1976). Through Wolff, I steer readers to consider how existential social narratives generated by those experiencing solitude under crises – unbeknownst to them – are products of their own *surrender and catch* experiences. Finally, I note how the protagonists' social narratives, borne during compelled or forced solitude, contain important insights about the society, and the human will needed to survive it.

The *Outside* Society

One reason why the discipline of sociology has yet to fully illuminate the social narratives borne from solitude is due to the historical birth of the discipline during the Industrial Revolution. In this epoch of rapid social change and development, social thinkers maintained an anxious grip on the social world as they tried to understand the human condition within the leviathan forces of industrializing society. The process was dramatic and conflict-ridden. The ethos of modernity – mass production and consumption, rationality, efficiency, calculability – colonized the hitherto rarely contested worldviews borne from rural, religious, and traditional lives. By the nineteenth century people flocked to their respective cities, dealt with their political economies, technologies, and cultures; they were nourished

by science as well as eliminated by it through the practices of modern warfare and technological displacement of workers. This created urgency for sociologists to have totalizing conclusions about large swathes of corporeal society. The belief was that changing the social structure thus changed society and ultimately the people within it. During this period, sociologists Auguste Comte (1798–1857), Harriet Martineau (1802–1876), Karl Marx (1818–1883), Émile Durkheim (1858–1917), and Max Weber (1864–1920) all shared the view that society was primarily a phenomenon *outside* the mind. Within this framework, classical sociologists sought access to the *insides* of societies.

As sociology evolved, sociologists and their differing orientations caused the discipline to fork into two major trajectories. One, its prototypical iteration, gave pride of place to hypothesis testing and statistics to inform our understanding of social life. This branch of sociology was articulated most clearly in the historical debate in 1903 between Émile Durkheim, one who established sociology as an academic discipline, and his intellectual detractor, Gabriel Tarde. Although Tarde is considered a sociologist as well, he viewed society as an aggregate of individual dynamics. In contrast, Durkheim envisioned society as a collective output of institutions that shaped groups and thus *could not be reduced* to the individual (Damle & Candea, 2008, p. 767). The legendary 1903 debate between the two figures at Paris' *École des Hautes Études Sociales* saw Durkheim defending (and promoting) a scientific sociology where societies could "be measured, their relative sizes compared ... [to] study of a world hitherto unknown, different from those explored by the other sciences. This world is nothing if not a system of realities" (Damle & Candea, p. 764).

Durkheim's positivism was further explicated in *The elementary forms of religious life*, first published in 1912, where he argued how religion was not a personally spiritual phenomenon, but the "most powerful combination of physical and moral forces" that raises *groups* of people to "a higher plane of existence and transforms them" (Durkheim, 2008, p. 446; Tiryakian, 1962, p. 23). It should be noted, however, that his close contemporaries did the same in their theorizations. In 1848 Karl Marx's *Communist manifesto* confidently predicted that communism would unfetter workers from their exploited status and that they would *become* and *be* something more than their exploited group status under bourgeois domination. Max Weber (1968) saw how the calculability and mechanistic demands of modern society created an *iron cage* of rationality of which those in society should be weary. Harriet Martineau (1837/2009, 1838/2012) conducted her two most important empirical studies in the United States and noted how general laws exist about society and discussed the necessary methods to be employed to uncover new means of existences for women and humankind.

The alternative sociological discourse culturally and interpretivistically documented society's symbolisms for its constituents. By the late 1960s, through Peter L. Berger and Thomas Luckmann's seminal work, *The social construction of reality* (1967), the foundations of social constructionism found enough traction to make the claim that our *realities* are social constructions of particular periods.

Harnessing symbols, interpretations, and meanings rather than arithmetic, Berger and Luckmann demystified a reified objective society. However, this discontent with a cold objectivity was not new. Approximately three decades previous, thinkers of the Frankfurt School – Herbert Marcuse (1964), Max Horkheimer and Theodor Adorno (1944), and Erich Fromm (1994), to name but a few – expressed their major disappointments with the cold objectivism of modernity and its fetishism of science and technological development. Peering back at humankind and its horrible endeavors during the two World Wars, only to be faced with the threat of nuclear annihilation with the Cold War that followed, their cumulative sentiments indicted a humanity that was perceived to be far from civilized in spite of their modern technological developments.

During the 1970s, iterations of social constructionism manifested through the poststructural discourse that employed the methodology of deconstructing social structure, especially culture and language. Through sociologists such as Michel Foucault (1988, 1995), Jean Baudrillard (1998), and Stuart Hall (1997), deconstruction rendered society's social structure as one that could be confronted and eviscerated. This discourse responded to a growing consensus that history was not going to inevitably be on the worker's side (per Karl Marx) and that society was no longer a totalizing iron cage of rationality (per Max Weber). Instead, room was made for feminist discourse, ethnic/racial narratives, and cultural theories that conceptualized social change and group empowerment from the bottom-up rather than from the system downward. With such diversified sociological articulations, healthy tensions created disciplinary richness and symbiosis. Sociology accepted these divergent paths, sometimes grudgingly, perhaps because they operated on different sides of the same epistemological coin. Why this divergence transpired is due to an acute awareness by all sociologists that society's institutions and stimuli are exponentially bigger than the self. Society's interwoven social structures – culture, social class, religion, gender, ethnicity/race, and economy – and all its satellite institutions and traditions script us for much of our daily lives at all levels of the human experience. In its wake, sociological themes on social problems and inequalities became ones that were intersected by different identities and exigencies, acceptable in its complexities.

Socio-solitude in Seventeenth-Century England

Given the entanglements within society between its historical *zeitgeist*, the material consequences affecting the human condition, and those affecting social thinkers, we need to explore the content of their existential narratives about a continuously evolving social world. Sociologist Steven Shapin (1990) undertook the task in a brilliant exegesis that examined historical figures of seventeenth-century England, all of whom provided critical social narratives while in solitude. Shapin notes how upon examining the accounts of the period, one does not “have to listen hard” to

hear the “hermit’s voice” (p. 208). Shapin notes how during this period, “everywhere, there are voices claiming to speak from solitude, reporting on the solitary state, commenting on social life, as it were, from the other side” (p. 208).

In “The mind is its own place,” Shapin highlights iconic figures of the period that reveal to us their acquired profundities resulting from experiences with solitude. Shapin first concentrates his discussion on the themes invoked by protagonists experiencing an apolitical solitude, embodied in the voices of romantics, poets, and even aristocrats. For example, Shapin cites how poet John Keats experienced inspiration in “*La Belle Dame Sans Merci*” when he was “alone and palely loitering” by his “solitary hearth.” Percy Bysshe Shelley, on the other hand, celebrated in “*Alastor: Or, the spirit of solitude*” how the character in the poem “lived … died” and “sung in solitude”; similarly, English romantic poet William Wordsworth wrote in “*I wandered lonely as a cloud*”: “For oft, when on my couch I lie, in vacant or in pensive mood, they flash upon that inward eye, which is the bliss of solitude” (p. 192).

For Shapin, some of the most “far-reaching methodological insights of the Scientific Revolution … have been secured in solitude” (1990, p. 194). Sir Isaac Newton (1642–1727) – considered by many to be the most influential scientist who ever lived – delinked himself from the bonhomie of Cambridge University’s social and academic life during his formative period of scholarship (Burt, 2001; Shapin, 1990; Westfall, 1980). One of Newton’s most respected biographers, Richard Westfall, documented how Newton spent over 35 years in virtual seclusion at Cambridge’s Trinity College, where he “formed no single friendship that played a perceptible role in his life from among his fellow students” (Westfall, p. 75). Even upon acquiring fame, “none of his fellow students left any recorded mention that they had once known him.” For Westfall, the “silent, thinking lad … had become the solitary and dejected scholar of Cambridge” (1980, p. 75). Between 1661 and 1696, Newton would only emerge from solitude in instances compelling enough for him to respond to queries and detractions to his writings. The author of the epic 1687 work *Principia* that revolutionized science and mathematics, Newton seldom left his chamber and frequently ate alone in the confines of his room. For Westfall, Newton would have preferred “to be left alone permanently” (1980, p. 377).

For Shapin, solitude provided insight “as much for historical actors as for the historian” (1990, p. 193). Shapin also transplanted his analyses across time to the eighteenth century to include philosopher Jean Jacques Rousseau (1712–1778). Jean Jacques Rousseau’s final work, *Reveries of the solitary walker* (1980), saw him reflect on his status as a philosopher immersed in his solitude – surprisingly not in the ecology of the natural environment, but within the concrete jungle of Paris. Divided into 10 chapters labeled as “Walks,” Rousseau noted in his First Walk how he had given himself over “entirely to the pleasure of conversing” with his soul “since this is the only pleasure that men cannot take away” from him. In the First Walk, he finds resolution on those who lambasted his idealistic paeans on egalitarianism: “If by meditating on my inner life I am able to order it better … my meditations will not be entirely in vain Thinking of the prize my heart deserved,

I shall forget my misfortunes, my persecutors and my disgrace" (Rousseau, 1980, p. 32). By the Third Walk, Rousseau critically observes of social thinkers:

I have met many...who were more learned in their philosophising, but their philosophy remained as it were external to them... They studied human nature in order to speak knowledgeably about it, not in order to know themselves; their efforts were directed to the instruction of others and not to their own inner enlightenment. (1980, pp. 48–49)

Rousseau's *dénouement* on the human dynamics of society is perhaps exemplified in the statement: "I became a solitary or, as they say, an unsociable misanthropist, because I prefer the harshest solitude to the society of malicious men which thrives only on treachery and hate" (1980, p. 112).

Shapin also traversed into the nineteenth century to discuss social thinkers and their potent critiques of society in the United States, American transcendentalist poet Henry David Thoreau (1817–1862) was driven to assess his place in society by retreating for 2 years to Walden Pond, MA, in 1845. In the fifth chapter of *Walden* titled *Solitude*, Thoreau delighted in how solitude allowed the whole body to be in "one sense" as he goes and comes "with a strange liberty in Nature," becoming "a part of herself" (1854/2011, p. 69). Thoreau did drolly concede how his initial fears of the woods was analogous to how people were "still a little afraid of the dark, though the witches are all hung, and Christianity and candles have been introduced" (1854/2011, p. 69). Thoreau's solitary "recovery" in the woods resulted in an incisive critique of society, allowing him to display a quasi-ethnographic sociological imagination, a type of sociological insight that allows the observer "the capacity to shift from one perspective to another, and in the process to build up an adequate view of a total society and of its components" (Mills, 1959, p. 211). For Thoreau:

Society is commonly too cheap. We meet at very short intervals, not having had time to acquire any new value for each other... We have had to agree on a certain set of rules, called etiquette...to make this frequent meeting tolerable...we live thick and are in each other's way, and stumble over one another... Certainly less frequency would suffice for all important and hearty communications... It would be better if there were but one inhabitant to a square mile, as where I live. (2011, p. 71)

In solitude, thinkers often explore emancipatory mechanisms for removing socially limiting conditions. Some find it in a quiet room, while others find it outdoors in their favorite ecosystems. Solitude's ostensible birthing of great ideas notwithstanding, it appears that social thinkers having experienced solitary reflections are quite adept at critically commenting on social life and society. Indeed, for Shapin, these narratives have emerged "with remarkable consistency in our culture" (Shapin, 1990, p. 209). The consistency of solitude's contribution to social critique stems from how intermittent delinking provides the distance needed

for social thinkers to observe clearly. These dynamics may not be readily explicit in the *immediate* context of social life because cultural, class, political, ethnic, gender, and technological stimuli are so numerous. It is in this regard that solitude for the thinker serves as a “place of knowledge … the setting for profound understanding of both self and society” (Shapin, pp. 192–193).

Beyond the Seventeenth Century: Solitude and Crises

Beyond the seventeenth century, examples of iconic figures with solitude-inspired social narratives about existential and political crises abound. Arguably, one of the more explicit explorations of crisis since the seventeenth century can be found in the works of Friedrich Nietzsche (1844–1900). As one of the most important existential thinkers of his time as well as ours, Nietzsche’s solitary summers in the small Swiss village of Sils Maria ultimately produced classic works such as *Thus spoke Zarathustra* (1883–1885), *Beyond good and evil* (1886/2011), and *Twilight of the idols* (1889/2009b). Many of his social critiques attended to how one can confront what he saw as the crisis of humanity. Nietzsche’s formulations about the crisis of humanity indicted a society with a failed Christianity, where God was dead – where its practitioners and their distorted practices destroyed God – and how there needed to be a project of human emancipation based on new value systems that could replace older value systems. Nietzsche referred to this process as the *transvaluation of values*, a phrase which found much textual exposition in *The Anti-Christ* (Nietzsche, 2010). For English novelist Will Self, the transvaluation of values was essentially a “systematized destruction of systems” (Chu, Morgan, & Wardle, 1999). The process of abolishing society’s old value system required the need to have a *will to power* that could allow the self to master life in the guise of being an exponentially capable human being – an *übermensch* – that could overcome all of life’s brutal challenges and hardships.

It would be a mistake to conceive of Nietzsche’s ideas as purely atmospheric, sloganized in a hyperromantic world that rarely dealt with the hard material consequences of life. Indeed, Friedrich Nietzsche was unlike John Keats or William Wordsworth. He suffered from a variety of serious illnesses such as syphilis and diphtheria, with Sax (2003) going as far as noting that he suffered meningioma, or brain tumors. Whatever the cause, during Nietzsche’s relatively short life, he drew a variety of philosophical conclusions from his suffering, most notably that existential empowerment – that power in us to continue living and existing in society – must be understood in relation to the body. To live his philosophy, Nietzsche embarked on many solitary sojourns at a variety of idyllic settings, adopting strict physical regimens to improve his physical health (Chu, Morgan, & Wardle, 1999). Thus, human emancipation, for Nietzsche, was about self-mastery of the mental with physical selves, a process that required one to be an *übermensch*.

In one of his more famous proclamations from *Ecce Homo*, published posthumously in 1908, Nietzsche noted how “Philosophy, as I have so far understood and lived it, means living voluntarily among ice and high mountains—seeking out everything strange and questionable in existence, everything so far placed under a ban by morality” (2009a, p. 4). Such an account can be appreciated for its metaphorical value alone, yet Nietzsche did ascend some of the peaks of the Swiss Alps, such as Piz Corvatsch, at a daunting 11,322 ft, in hopes of enhancing metaphysical and physical strength, molding his will to power in the process (Botton, 2001). During his solitary sojourns up the mountains, he wrote of how mountain air was the “air of the heights” where “the ice is near, the solitude … immense—but how peacefully everything lies in the light” (2009, p. 4). Additionally, Nietzsche’s other famous work, *Human all too human* (1878), was begun in the solitude of the Swiss countryside he so loved.

Another treatment of solitude by Nietzsche’s can be seen in *Zarathustra*. Vicariously living through the prophet, Nietzsche illuminates how Zarathustra relied on solitude for three purposes. First, Nietzsche saw solitude as a place for meditation and reflection that invariably leads to the point where, upon being bloated with wisdom, one must leave the state and share with society the knowledge and insights acquired. Indeed, the work begins with Zarathustra descending from the mountains after 10 years where in spite of “his solitude … [he] did not tire of it” (2006b, p. 3). But because of his love for humanity, Zarathustra – metaphorically treating solitude as the sea – decided to “climb ashore” to spread his wisdom (p. 4). The second treatment of solitude for Nietzsche was how it functioned as a place to return to for healing, especially after being exposed to too much cultural detritus and stimuli from an unawakened society. This function of solitude is exemplified with dicta such as “Flee, my friend, into your solitude! I see you dazed by the noise of the men” (p. 36). Also, Zarathustra advises listeners – especially those who belonged to the “herd” – to “go into isolation” as a means to “seek the way to yourself” and not to be thwarted by those in the herd who made one feel guilty about isolation (p. 46). In the book, Zarathustra himself returns to the mountains frequently to reset his system, not unlike Nietzsche’s perennial summer returns to Sils Maria, to wait “like a sower who has cast his seeds” (p. 63), but only after the prophet has ensured that his listeners “have heard everything” (p. 117). Nietzsche exclaimed, through Zarathustra, “Oh solitude! You my home solitude! How blissfully and tenderly your voice speaks to me!” (p. 147).

Finally, Nietzsche, through Zarathustra and his forthright view of life, warned about solitude’s deleterious effects if harnessed incorrectly: “One day solitude will make you weary, one day your pride will cringe and … you will cry ‘I am alone!’” (p. 47). As a place that can harbor great dangers, Zarathustra warns that “whatever one brings into solitude grows in it, even the inner beast. On this … solitude is ill-advised for many. Was there ever anything filthier on earth than the saints of the wilderness? Around them not only hell broke loose—but pigs too” (p. 237).

Although he excelled in psychological insight about solitude, Nietzsche's social narratives made visible important social tendencies exhibited by modern societies. In *Human all too human*, he points to the capriciousness of society:

The modern spirit has come to rule in all areas, with its unrest, its hatred of moderation and limitation, at first unleashed by the fever of revolution, and then, when attacked by dear and dread of itself, applying the reins to itself again. (Nietzsche, 2006a, p. 167)

Insofar as humanity's reliance on the state is concerned, Nietzsche cautions that "the state is a clever institution for protecting individuals from one another; if one goes too far in ennobling it, the individual is ultimately weakened by it, even dissolved" (2006a, p. 183). More importantly was Nietzsche's view on war, which he saw as the "sleep or wintertime of culture" (2006a, p. 271). Moreover, in his criticisms against revolutionaries who believed in overthrowing old societies for the establishment of new ones, Nietzsche wrote that "An overthrow can well be a source of energy in an exhausted human race, but it can never be an organizer, architect, artist, perfecter of the human character" (2006a, p. 281). Nietzsche, however, spared the institution of science from vitriol since it had "as its goal the least pain and the longest life possible—that is, a kind of eternal happiness ... a very modest kind in comparison with the promises of religions" (2006a, p. 105).

Arthur Koestler (1905–1983), Hungarian-Jewish philosopher, author, and novelist, had experiences with forced solitude that brought him face-to-face with death. While covering the Spanish Civil War as a journalist, he was captured by nationalist Francisco Franco's troops in early 1937, suspected of being a left-wing sympathizer. Sentenced to death, Koestler spent months in prison until June of the same year. Although only disclosed after his imprisonment for obvious reasons, Koestler was indeed a member of the Communist Party of Germany, and his assigned interview of Franco as a journalist was done on behalf of the *Comintern*,² using the London-based newspaper *News Chronicle* "as a cover" (Koestler, 1966, p. 5). Koestler wrote about harrowing nights waiting execution in his prison diary and through recollections after his release, which were later published in *Dialogue with death* (1966). *Dialogue* includes accounts of many nights where Koestler would hear prisoners being led away to face Franco's firing squad, uncertain if he would be next.

Ultimately freed through a prisoner exchange, Koestler survived the ordeal. *Dialogue* contains, along with psychological themes, some of the more emblematic themes that solitude during crisis includes: the narratives about society and how one survives or transcends it. Perhaps of all the narratives that most sociologically blurred the line between self and society was when Koestler hinted that the blurring was itself needed when one's future was uncertain. In such a situation, society is rendered an epic disappointment, with Koestler noting how "one is never so curious about the future of humanity as when one is locked up in an iron cage, guarded by two gorillas" (p. 91). Trapped in raw despair, Koestler noted that

"the only consolation you could give to a condemned man on his way to the electric chair would be to tell him a comet was on the way which would destroy the world the very next day," blurring the distinction between global catastrophe with the absolute extinction of the individual (p. 92).

Koestler also tried to find morsels of strength during his forced solitude. This he did by downplaying the suffering meted out to him by society: "This is why situations lived through are never so bad in reality as in imagination. Nature sees to it that trees do not grow beyond a certain height, not even the trees of suffering" (p. 117). Koestler also harnessed the acquisition of prison resources as a metaphor for social struggles in life, noting that "here inside the prison walls the struggle is waged for a cigarette, for permission to exercise in the courtyard, for the possession of a pencil. It is a struggle for minimal and unworthy objects, but a struggle for existence like any other" (1966, p. 197). After acquiring his freedom, Koestler concluded rather sociologically: "Those who uphold the Theory of Race and deny the influence of environment on the development of the human being should spend a year in prison and observe themselves daily in the mirror" (1966, p. 197).

In contrast to Koestler, the forced solitary confinement of Milada Horáková (1901–1950) ended tragically. A Czech lawyer, freedom fighter, politician, and arguably the most prominent pan-European feminist, Horáková was executed by Stalinists during the Cold War in Czechoslovakia. During her youth, Horáková was active in resisting the Nazi Occupation of Czechoslovakia. She was ultimately captured by the Nazis, was sent to prison, and spent the remainder of World War II at Theresienstadt concentration camp located in the country. After World War II concluded, she served in the country's parliament until the 1948 Communist takeover of the country (Doležalová, 2012; Kelly, 2012). A year later Horáková was arrested again, this time by the Communists, accused of trying to overthrow the regime, a charge that historians have unequivocally deemed as false. Subjected to brutal torture and significant time spent in solitary confinement, as well as forced to stand in the numerous sham trials orchestrated by the Stalinists throughout the Eastern Bloc during this period, she was sentenced to death on June 8, 1950.

Having written on a variety of subjects related to women's welfare such as the quality of life of unmarried women and children born out of wedlock, as well as having drafted bills that would improve the status of women in family law and in blue-collar professions (Doležalová, 2012), her most memorable writings were not propagandistic nor based on public policy: on the night before her execution, alone in her cell, jailers allowed her to write three letters (Kelly, 2012). The powerfully poignant letters were written to her husband Bohuslav, teenage daughter Jana, and Horáková's mother-in-law, who would be Jana's caretaker upon her mother's demise. One could only imagine the depth of Horáková's inventory-taking about her life, uncluttered in the fateful hours before her demise. Yet her writings during this difficult period speak volumes about the effects *and* redemption of forced

solitude. Horáková's letter for Jana included an important section – Horáková's social *dénouement* – that instructed Jana about the ways of society:

Don't be frightened and sad because I am not coming back any more. Learn, my child, to look at life early as a serious matter. Life is hard, it does not pamper anybody, and for every time it strokes you it gives you ten blows. Become accustomed to that soon, but don't let it defeat you. Decide to fight. (Kelly, 2012)

Elsewhere in the letter, Horáková wrote:

You know that to organize one's scale of values well means to know not only oneself well, to be firm in the analysis of one's character, but mainly to know ... others, to know as much of the world as possible, its past, present, and future development. (Kelly, 2012)

In her last paragraph to Jana, Horáková instructs, "Just one more thing: Choose your friends carefully. Among other things one is also very much determined by the people with whom one associates. Therefore choose very carefully" (Kelly, 2012). Horáková's letter to her husband and mother-in-law contains topics that highlight the expectations of liberated womanhood that still had to contend with the *second shift*, noted by sociologist Arlie Hochschild in her eponymous work (1989). The second shift refers to the angst and human condition that accompany women with a successful career, yet one that has to return to a home to fulfill her archaic duties as a wife, a state that resulted for women that had yet to be fully emancipated from traditionally defined scripts for the home. Horáková's outpourings about how her loved ones should function in society, drafted alone before her execution, are indicative of solitude's blurring of self and society at work, predating Hochschild's observations of the phenomenon, and having taken place not behind the gendered discontents of American capitalism, but behind the Iron Curtain and its totalitarian institutions.

At 2:30 a.m. on June 27, 1950, Horáková was hanged with others in spite of appeals by Winston Churchill, Albert Einstein, Eleanor Roosevelt, Bertrand Russell, and many others. As an anti-Nazi and anti-Communist crusader, Horáková's political stance was simultaneously an apolitical one under forced solitude, one that brought her back to womanhood, society, and humanity as a whole.

Solitude, seen in our cast of iconic thinkers and activists, can be a foundational platform for a variety of insights into society, whether forced, as in the experiences of Koestler and Horáková, or voluntary, as in the reflections and meditations of Thoreau, Rousseau, and Nietzsche. Interestingly, even when those in forced solitude are confronted with their existential demise, their narratives about society are not by default cynical. Not surprisingly there is urgency, but one that is not necessarily purely based on a paralyzing fear or desperate self-serving outbursts for life. Rather, the narratives generated by Koestler and Horáková exhibit traits of self-reassurance and a calm fatalism. In Horáková's case, room was made for the continuity of family and carefully cultivated friendships. In the case of voluntary solitude, the relative lack of urgency was countered by wisdom, albeit sprinkled with some

histrionics and hyperbole, on how to live and resolve oneself *vis-à-vis* the discontents of existing society. Such sentiments can be found in Thoreau, Rousseau, and Nietzsche's ideas. Indeed, their profundities about self and society could not have found articulation without their solitary sojourns into their ecologies of contemplation, such as Walden Pond for Thoreau, Paris for Rousseau, and Sils Maria and Piz Corvatsch for Nietzsche.

Surrender and Catch

Thus far, I hope to have described how solitude can, through those that choose to or are forced to experience it, generate profundities about human existence in society. With existential cues in abundance, especially in greater degrees by those experiencing crisis, we begin to understand the sociological depth offered by solitude-inspired thinkers of the human condition, the kind that is needed for the self to survive not only itself but also a society that can steer people toward redemption or oblivion. But what allows for this social knowledge, that is, what are the mechanisms? I propose that their social knowledge results from episodes of surrender and catch, which Kurt Wolff has presciently identified and then developed into a qualitative methodology for knowledge production (1962, 1974, 1976).

As a qualitative method, Wolff's surrender and catch is an infrequently applied method in American sociology even though Wolff himself hailed from a distinguished cadre of German sociologists that migrated to the United States during the late 1930s. Surrender and catch's utility for considering the different nuances of solitude renders it an important tool for explaining how we find certainty in knowing and why we are so certain that what is consequentially known is, from our perspective, *truth*. In his conceptualization of surrender, Wolff illuminates that totalizing state of knowledge and "expansion of consciousness," an awakening from event(s) that builds one's epistemological and ontological knowledge about one's *raison d'être* in society, life, and beyond (Wolff, 1976, p. 63). That is, Wolff noted that in times of totalizing inspiration, "words burst forth in a newly emergent poetic meaning from the immediacy of experience, as they do in surrender, [and] we have a sense of what we are talking about" (Backhaus & Psathas, 2007, p. xxv). In the total experience of surrender, there is the "dialectic of 'die and become'" (Wolff, 1962, p. 47). Or, as told by Wolff's biographers:

The experience of surrender can be explicated through its components: total involvement, the suspension of received notions, pertinence of everything ... that the surrenderer's whole being is involved in the experience such that the subjects-object distinction disappears. (Backhaus & Psathas, 2007, p. xxv)

Following from this, Wolff's rendition of the catch is when the experiencer is able to see the "structure that emerges from it" (1974, p. 549); it is that "yield, harvest ...

necessarily emerging structure” that is seized upon to validate reality (p. 318). This is where surrender and catch’s methodological utility emerges. Wolff notes in his seminal work *Surrender and catch: Experience and inquiry today* (1976) that “as a method it is characterized by openness toward its origin … it is self-correcting and therefore, in the spirit of the essence of knowledge,” one that is inherently existential (1976, p. 79). Wolff pushes the parameter of epistemology even further by noting how scientific findings are but theoretical and relative, while existential truth about the human condition is “absolute—also philosophical, artistic, poetic, if you will” (1976, p. 79). Thus, Wolff’s courageous response to the timeless query on truth is that when we experience surrender and catch, we “*are thrown back on what we really are, which is what we share with mankind* [italics added]” (p. 54). Tiryakian observed this human condition over a decade earlier as well: “As societies grow larger in area and denser in population and as individual differences multiply the time will come when the only thing members of a society will have in common is that they are human” (Tiryakian, 1962, p. 56).

Surrender and catch is thus a process that amplifies social awareness beyond self-actualization. The lucidity allows for a departure from socially constructed boundaries in ways that allow the experiencer a “certainty of full communication with his fellow men,” and “as long as his experience lasts, he can convey anything, and he who listens cannot help but understand” (Wolff, 1962, p. 40). Indeed, the experiencer thrown back on what is shared with humanity is thus forced to acknowledge that, in the final instance, the self invariably belongs to the human race.

To understand how Wolff came upon such an approach requires us to understand the social dislocations and crises that affected him. During the pre-World War II period, Wolff’s life was one of a transnational European. Born in Darmstadt, Germany, he ultimately had to flee Germany in 1933 because of its nascent fascism. Settling in Italy, he was again forced to flee in 1939 with his wife, Carla Bruck, as a result of Mussolini’s sycophancy to Hitler. After a brief furlough in England, the Wolff’s migrated to the United States. All the while the Holocaust unfolded and climaxed in ways that would scar Wolff for the rest of his life. Not surprisingly Wolff thus found no comfort in postwar modernity: with the conclusion of World War II, the Cold War was born and the threat of nuclear annihilation suddenly became very real. For Wolff, the sociological neglect of the Holocaust and his concerns at the time that there may indeed be a nuclear war became tropes for the crisis of humanity, themes that, “far more than any other, shaped his thinking” (Kalberg, 2007, p. 79). In this regard Wolff insisted that social theory must be adequate to confront the existence of evil. However, Wolff did not believe that the social sciences, as *science*, adequately addressed this important theme of social existence (Gordon, 2007, p. 67). Wolff’s scions note in affirmation:

Modern science brought with it the project of predicting, controlling, and manipulating the natural world. Its project was to discover the principles of linear causality, or natural laws, by which all phenomena are to be reduced Wolff rejects this

modern form of reason that denies the unique transcendent(al) capacities of humankind. (Backhaus & Psathas, 2007, p. 77)

By failing to account for the atrocities of humankind, science also failed to account for the human capacity to “create new meaning [and] existential truth on the basis of transcending socio-historically conditioned everyday life” (Backhaus & Psathas, 2007, p. 77). Surrender and catch was thus a necessary method that allowed Wolff and his proponents to confront the “tragic contradictions of history” (Godway, 2007, p. 83). Through surrender and catch, Wolff was able to conduct a historical diagnosis of the human condition – its meanings and material consequences – all through the conduit of the individual whose discernment from society is blurred (Stehr, 2007, p. 55).

Surrender and catch’s distinguishing feature is its methodological acceptance of profundities that displace traditional ideas about what constitutes knowledge (Backhaus & Psathas, 2007). One such profundity was found in Wolff’s experience with the Holocaust, and his surrender and catch aimed therefore at mining for cues about the human condition that, for Kalberg (2007, p. 79), could be harnessed to demolish the “invidious dualisms at the foundation of the Holocaust.” For Kalberg, such dualisms, as in “German and Jews, Germans and Gypsies, Germans and Communists—called forth the greatest evil. ‘Surrender’ reacts with unequivocal clarity, forcefulness, and horror against dualisms” (2007, p. 79).

Wolff’s epistemology thus emancipated qualitative sociological methods from its status as arguably the “softest” sociological method in an already “soft” science. He accomplished this by situating humankind in systemic crises, “hard” events that forged characters and thinkers who confronted worlds that collapsed around them. Such an approach was predictably beyond the purview of positivist approaches that rendered subjects into objects and, more inimically, separated facts from values, a divorce that resulted in, again, those dualisms whose political appropriation, as in “us” versus “them,” resulted in the insanity of war and genocide. For Wolff and his sociology of knowledge, such a divorce is unacceptable because facts and values are indelibly intertwined into, if surrender and catch runs its course, truths that are articulated within and about a particular historical period. Indeed, for sociology and sociological research, Wolff’s assertion is that we are guided by values that operate in the selection of what is significant to research in the first place (Imber, 2007, p. 71). In this manner, method and values become inseparable to the social thinker. This appreciation Wolff did not see in American sociology after his many transplants across a variety of universities. For Kalberg:

Wolff’s sociology...has to this day been received only in fragments in the United States... American sociology remains to this day predominantly Durkheimian, Parsonian, positivist, uncritical of...modernity in any fundamental sense, and uninfluenced by the Holocaust. (Kalberg, 2007, p. 80)

It is thus not surprising that Wolff's chroniclers have described his sociology as taking an existential turn. Given that Wolff's surrender and catch stems from his lamentations of the Holocaust as a signifier for the crisis of humanity, we can begin to appreciate the frequency of surrender and catch moments that have been experienced by our contingent of social thinkers in their moments of crisis.

Existential Sociology's Enhancement Through the Study of Solitude

Using the methodology of surrender and catch allows researchers a historical link across the present and across time to social thinkers that faced increasingly acute levels of crisis – to the point where, among our gathering of protagonists, one had to pay the ultimate price with her life. In this chapter, I hoped to convey how solitude, constituted by our protagonists' surrender and catches, was able to provide a deep understanding of the human condition in society. Moreover, the power of solitude to encourage protagonists to honestly confront the nature of society so that major existential themes – happiness, passion, hope, angst, despair, and alienation – can be harnessed to transcend and/or outmaneuver systems that constrain them renders solitude an important state of being worthy of further investigation. These attributes include where solitude is being experienced, the quality of life in it, and the degree of metaphysical and literal crises that affect the well-being of the protagonist. For the sociological examination of the human experience in society, solitude becomes an indispensable site to ascertain definitive conclusions about society as well, especially by those experiencing an urgency brought forth by some kind of crisis. Whether solitude's revelations of the nature of society stems from ecology as experienced by Nietzsche at Sils Maria or atop Piz Corvatsch, or within confined spaces of imprisonment as in the experiences of Koestler and Horáková, or by an incomplete mourning of one's ilk lost through genocide as in Wolff's experience, the surrender and catches by our protagonists can inspire sociologists to employ this methodology to enhance the discourse of existential sociology. Such a method gives insight to how studying the process of existentialization during solitude is essentially about studying how inner and physical strength – a Nietzschean will to power – is needed to survive a society that has compelled the protagonist to deal with its often challenging stimuli.

In its institutional and bureaucratic manifestations, society's size *vis-à-vis* the self indeed makes analyzing the former a challenging undertaking. However, the analytical purview of positivist sociology allocates explanations about consequences for the group in ways that ignore the agency individuals have to conclusively process *all of society's dynamics within the self*. This behooves existentially oriented sociologists to take on the task of seeking out what is evinced by one's inner strength and its ability to harness agency in spite of crisis, an attribute of the human spirit that is, paradoxically, not given full explication in important genres of

sociology that examine human rights, the condition of political prisoners, veterans and their relationship to society upon returning home, and disaster studies, sociological contexts that at one time or another require solitude for the protagonist to process and to overcome. Indeed, society is ultimately dependent on the consciousness of individuals, “for it … exists … as long as individuals think of it. Consequently, society has the double character of being both immanent and transcendent; *it resides in the individual* [italics added] but it is also greater than the individual” (Tiryakian, 1962, p. 64). Tiryakian’s observation is most appropriate for closing our discussion since he provides great cues that existential sociology is still in the process of illuminating:

The life of a society is infinitely longer than that of any member of it—individuals are born and perish, but society continues. Since the soul is interpreted...as the incarnation (or internalization) of society, the belief that the soul is immortal is justifiable. (1962, p. 49)

It behooves social thinkers across a variety of disciplines in making the life path in society, a path that often crosses into solitude, acceptable and appreciated for all of us who continue existing and becoming in ways we are still on the verge of understanding.

Notes

- 1 The sociology of knowledge perspective views “reality” to be a product of how human thoughts *and* particular historical periods intertwine to create accounts, narratives, themes, and “objective truth” about the human condition.
- 2 The *Comintern*, or Communist International, was an international Communist organization. Founded by Vladimir Lenin in 1919, its main agenda was to forge an internationalized movement to overthrow the world’s bourgeois (capitalist) class.

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A View from Computer Science

From Solitude to Ambient Sociability – Redefining the Social and Psychological Aspects of Isolation in Online Games

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The impact of the Internet on our lives remains a contentious topic. On the one hand, online spaces enable social interactions between geographically distributed users that would be simply impossible without computer networks. Early designers and adopters of electronic communication technologies focused specifically on the *social* potential of the medium. For example, Rheingold (1993) was among the first to describe how the Internet can support *virtual communities* where true friendships (and enmities) are formed and people freely associate based on shared interests. This potential to create and support social relationships has become an essential ingredient in the widespread success of the more recent “Web 2.0” systems (such as social networking sites, blogs, or wikis, to name but a few). For instance, emphasizing the social benefits of electronic media, Facebook’s official mission statement is to “make the world more open and connected” (<https://www.facebook.com/facebook/info>). And indeed, online social networks like Facebook have been shown to support the creation and maintenance of social capital, which in turn has positive impacts on psychological well-being (Ellison, Steinfield, & Lampe, 2007). On the other hand, research has uncovered an apparent paradox in that greater use of the Internet can lead to increased depression and loneliness (Kraut et al., 1998) – but these effects can disappear over time and affect some people more than others, depending on their personality and the extent of their initial support network (Kraut et al., 2002). These findings echo in many ways a widespread anxiety regarding the decline in civic participation in American society (Putnam, 2000) and the increasing disappearance of traditional communities built around physical

spaces (Oldenburg, 1989). It could be that Internet technologies only make us more isolated, despite the apparent increase in social connectivity they have triggered (see “Solitude in Cyberspace,” by Amichai-Hamburger and Schneider, Chapter 18, this volume). An important potentially confounding factor in the aforementioned debate is that the Internet is, of course, not a single technology but an ever-evolving collection of network-enabled software. Online social spaces range from one-on-one, synchronous instant messaging to massive, asynchronous bulletin boards, forums (e.g., Smith, 1999; Whittaker, Terveen, Hill, & Cherny, 1998), social networks like Facebook, and anything in between. Rather than considering the social impacts of all these technologies simultaneously, it seems more productive to investigate their individual effects – the more so if an electronic communication system was designed specifically to promote social interactions.

In this context, massively multiplayer online games (MMOGs) present a range of interesting research opportunities. Descending from earlier, text-only Multi-User Dungeons (MUDs; see Cherny, 1999), MMOGs are virtual worlds designed to encourage collaboration between their players. They retain from their predecessors the notion of a vast, persistent fantasy world (based on popular themes ranging from sword and sorcery to space opera) inhabited by other players, with whom one can interact via text chat (and, increasingly, using voice-over IP), trade, form groups to undertake “quests,” and eventually become member of longer-lasting *guilds* organizing complex group activities in the virtual world. MMOGs add richly detailed 3D graphics on top of this basic template, and a combination of the ever-increasing availability of both broadband Internet access and graphics-rendering capabilities on commodity computers has enabled them to attract more and more subscribers, starting with a few hundred thousand players in Ultima Online and EverQuest in the 1990s and now up to the 11 million registered accounts in World of Warcraft (WoW), current leader of this genre in the United States (Van Geel, 2012). Previous research has explored a wide array of issues emerging in these online gaming communities: their unique culture (Taylor, 2006), their players’ motivations and psychology (Yee, 2003), their economic importance (Castranova, 2003), their role in learning (Steinkuehler, 2004), and, most relevant to this chapter, their social life (e.g., Steinkuehler & Williams, 2006; Williams et al., 2006). Indeed, online games are subject to the same debate we outlined earlier in this introduction: do they help create and support vibrant communities of players, or do they contribute to a player’s isolation instead? Furthermore, are these effects widespread or limited to some players with specific sociopsychological backgrounds?

To shed light on this issue, we present in this chapter data collected for more than 5 years in WoW, covering the activities of more than 300,000 game characters complemented by survey data from 1040 volunteer players. We start by describing broad patterns of sociability in WoW, focusing on social interactions in the groups and *guilds* formed by the players to collaborate with each other. We then look at differences in play patterns between users with different sociopsychological profiles, in order to tease out the impact of individual factors on WoW’s social life. Consistent with the theme of this handbook, we pay particular attention in both cases to social isolation,

highlighting if, when, and where our data supports the notion that online games may promote solitude. As will become apparent, we believe instead that online games promote new forms of *ambient sociability* (McGonigal, 2011) where solitude can be experienced on purpose, for its own sake and with beneficial impacts due to unique properties of these electronic communities. Before reaching this conclusion, however, we begin in the following texts with a short overview of some key concepts from the world of online gaming that will be necessary to understand our studies and data.

World of Warcraft: A Brief Overview

Most current MMOGs rely on a simple formula that is almost identical across all games, with some minor variations. Broadly speaking, players follow a well-established trajectory. They start as a level 1 character in a vast, unfriendly world that they share with the other players. This character then gains levels and more powerful abilities through quests or missions. But while these quests are reasonably straightforward to complete alone for the first few levels, they progressively become difficult enough that players need a group to succeed and progress. Initially, they can rely on whoever is around at the time and form a *pickup group* to accomplish their goals. But as they get closer to the highest possible character level, activities become complex enough that they cannot rely on these ad hoc groups to succeed anymore. The endgame *instances* (dungeons populated by very tough monsters) in WoW, for instance, can require groups of up to 40 players (a *raid*) to join forces for encounters lasting several hours. Players trying to recruit 39 random characters to join them for the next 6 h in a dungeon will quickly realize this is close to impossible, unless they already have some preexisting relationships with the people they are trying to recruit. In MMOGs, this repeated need for increasingly complex collaboration leads to the creation of long-term player associations: the guilds, which are used as a stable and reliable pool of teammates for large-scale social activities (Williams et al., 2006).

The aforementioned collaboration template is reinforced in turn by another game mechanic: classes. Indeed, users can create characters with different skill sets that complement each other. For example, heavily armored *tank* classes shield the group from enemy attacks while lightly armored damage dealing damage-per-second (*DPS*) classes deal damage to enemies and *healing* classes restore health lost in combat. A successful group (and guild) will have to recruit players with complementary skills to function properly (Ducheneaut, Yee, Nickell, & Moore, 2007).

However, players do not spend all their time in groups. To keep them interested, MMOGs like WoW offer a broad range of activities. External observers unfamiliar with these games often assume they are mostly about combat, but there are many other pursuits players can engage in, from collecting cute companion pets to calmly fishing in a remote corner of the virtual world. In turn, a system of achievements keeps track of both combat- and noncombat-based objectives. For example, in WoW there are achievements for zones explored, for dungeons completed, for

number of hugs given, and for cooking proficiency. These achievement scores provide a good sense of how a player chooses to spend their time in WoW, be it inside or outside of groups.

Method and Procedures

Data collection in MMOGs

Thanks to their design and the rich array of activities they support, games like WoW offer three unique features facilitating the collection of natural behavioral data, which we can use to study social activities both at the group and the individual levels. First, unlike the physical world where it would be unfeasible to follow everyone around with video cameras, MMOGs come inherently instrumented. For instance, the computer systems running WoW already track the movement and behavior of every avatar to make interactions possible (e.g., making sure that a melee fighter is close enough to a monster to hit with his sword). Second, these high-precision sensors operate at all times. Thus, it is possible to generate not only snapshot data but also longitudinal behavior profiles for every user (Ducheneaut et al., 2007). And finally, all these observations can be performed unobtrusively, thereby significantly reducing the observer effect (Webb, Campbell, Schwartz, & Sechrest, 1966) – participants cannot react to the camera if the camera is invisible.

WoW offers a wide and varied set of rich behavioral cues to draw from. From class choice to amount of player-versus-player (PvP) activity and from number of *emotes* used (e.g., /hug, /cheer) to amount of world exploration, the game context offers a range of measurable behaviors. Blizzard, the developer of WoW, is unique in that they have provided public access to much of their internally collected data at a web site known as the Armory. In short, by searching for a character's name, anyone can view details about their past activities, including how many hugs they have given, the quality of their equipment, and the class they prefer to play. More importantly, these metrics have been tracked since the character was first created. Accordingly, with a few clicks of the mouse, we can gather a character profile that has cumulative data over many months of game play. In addition, Blizzard designed WoW to be extensible through the use of *addons*: small programs written by players to extend or refine the game's user interface (e.g., displaying key information such as the health of group members during a raid in a more visible and accessible way). Interestingly for us, one addon function can be used to gather limited but valuable data about the players: the /who command. For a player, typing /who in-game lists all the other characters in the same game zone who are roughly the same level (plus or minus 5 levels), with an upper limit of 49 results returned. The intent is to facilitate the formation of groups by quickly finding compatible groupmates. However, the command can be expanded to include additional parameters such as specifying a different game zone or a different level range. It

therefore becomes possible to conduct a census of the entire population on a given game server at a given time by progressively cycling through small segments of the population (e.g., only players of a given class and level in a given zone), aggregating small batches of 49 players or less over time to exhaustively cover all players.

To take advantage of these opportunities, we designed and implemented two automated, large-scale data collection tools to collect both Armory and Census data. Given a list of character names, the Armory collector connects directly to Blizzard's database using their application programming interface (API) and retrieves all available data about each of them (there are currently about 3500 individual variables listed per character). The Census collector uses automated characters to log into the game world and issues sequential */who* requests until the entire game world has been covered. Based on rate limits for each */who* query and depending on server load, our addon captures a list of all active players on a server every 5–15 min. Each time a character is observed, our software stores an entry of the form: Alpha,2005/03/24,Crandall,56,Ni,id,y,Felwood,Ant Killers.

The preceding text represents a level 56 Night Elf Druid on the server Alpha, currently in the Felwood zone, grouped ("y"), and part of the Ant Killers guild. Through that data it becomes possible to see where players are in the game world and whom they are playing with, which can then be used to reconstruct the social networks formed in guilds and elsewhere. This information about the structure and dynamics of social networks complements the more individual perspective provided by the character-level data obtained from the Armory.

Participants

We have collected data in WoW for many years, starting in 2004. For this chapter, the data we use can be broken down into three broad categories.

- Survey Data** – We recruited 1040 participants from forums dedicated to WoW, publicity on popular gaming sites, word of mouth on social media like Twitter, and mailing lists from previous studies of online gamers. We note that due to human subject regulations, minors were excluded from participating in our studies. Nevertheless, we were still able to gather data from a very wide age range (18–65 years). The average age of our sample was 27.03 years (standard deviation (SD) = 8.21). Twenty-six percent of participants were women. These demographics match previously reported data about the age and gender of online game players (Yee, 2006). Participants began by completing a web-based survey that gathered their demographic and personality information. Participants were also asked to list up to six WoW characters they were actively playing. In personality psychology, the Big Five model (McCrae & Costa, 1987) is the most widely accepted theory and taxonomy. The model measures five traits: Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience. For comparability, we used an inventory that measured

these five factors. A 20-item scale measuring the Big Five factor structure was drawn from the *International personality item pool* (Goldberg, 1999). Participants rated themselves on the inventory items using a scale that ranged from 1 (Very Inaccurate) to 5 (Very Accurate). This survey data gives us a *ground truth* we can use to explore how a player's sociopsychological background (e.g., age, gender, personality traits) affects their in-game behavior. For instance, for the purposes of this chapter, we can see if introversion or extraversion translates to more or less social activity in the game.

- 2 **Character Profiles from the Armory** – For each character (up to six) listed by our participants in the aforementioned survey, the Armory collector described earlier is activated. The Armory updates itself once per day (in the early morning) if a character has been active the previous day. Thus, our script follows this schedule with a daily interval and collects any updated profiles. For the results presented in this chapter, we analyzed data from a contiguous 4-month period in the spring and summer of 2010.
- 3 **In-Game Census Data** – To get a sense of social dynamics at a larger scale, we deployed the addon described earlier on five servers to observe group activities across an entire server's population. The five servers were chosen to represent all of the different types available: indeed, players can choose to create characters on PvP servers, where combat between human players is possible (and the world is therefore more dangerous); player-versus-environment (PvE) servers, where combat is limited to computer-controlled opponents; and finally role-playing (RP), where acting is encouraged. Overall we observed roughly 300,000 unique characters, and we used their location and guild affiliation to reconstruct social networks in guilds. Our census data covers 6 months in the summer, fall, and winter of 2005 (before the release of WoW's first major expansion, the Burning Crusade; consequently, the maximum level in this data set is 60 and the census data does not contain information about new character classes, such as the Death Knight, which were added in expansions).

With this background in mind, we can now begin our analysis of solitude (or the lack thereof) in WoW, starting with an examination of social activities in groups.

Results: Sociability in World of Warcraft

Grouping patterns: A look at the prevalence of social activities

For many MMOG players, “it’s the people that are addictive, not the game” (Lazzaro, 2004, p. 5). Indeed, most of the activities offered by MMOGs (e.g., developing a character, fighting monsters) are already present in single-player games. What makes a difference for many is apparently the shared experience, the collaborative nature of most activities, and, most importantly, the reward of being socialized into a community of gamers and acquiring a reputation within it

(Jakobson & Taylor, 2003; Yee, 2002). In response to this perceived player need, game developers have therefore designed multiplayer games such that opportunities for interacting with others abound.

As we briefly mentioned earlier, WoW encourages players to form groups using two classic mechanisms that were refined in EverQuest, the first widely successful MMOG in the United States (EverQuest's game mechanics were inspired in turn by tabletop, pen-and-paper RP games such as Dungeons and Dragons; Fine, 1983). First, character classes have specific abilities that complement each other (e.g., Priests are the best healers and Warriors the best melee fighters). As such, grouping with players of a different class should increase efficiency. Second, many quests and dungeons in the game are simply too difficult to be tackled alone. Accordingly, players have to form either a party (5 players maximum) or even a raid (40 players maximum) to have a chance to win the powerful items available in these difficult locations. As players gain levels, an increasing amount of game content requires such groups, up to the *endgame* (when players have reached the highest character level possible) where no dungeons are accessible without a strong party of at least five players (and often more).

Despite the complementarity of classes, however, we found that some stand a better chance of survival alone than others. For instance, Hunters are accompanied by a powerful pet and Warlocks can summon demons to fight with them, effectively allowing a single player to control a two-character unit. In the words of the players we talked to, this makes Hunters and Warlocks much more *soloable* classes. We computed the average time spent in a group for each class, and the numbers clearly reflect their *soloability* (or lack thereof) – see Figure 29.1. The differences are significant, $F(8,129,372) = 152.99$, $p < 0.001$, with the most

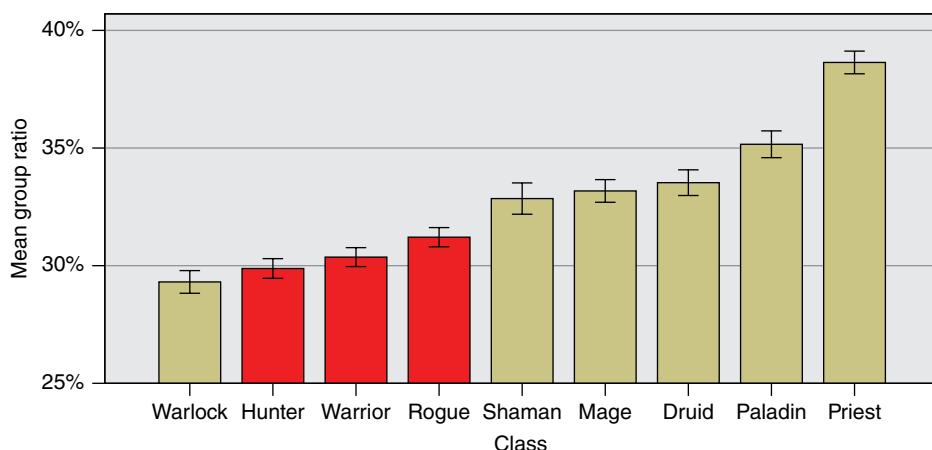


Figure 29.1 Average time spent in a group, by class (darker color added to facilitate comparison with Figure 29.2).

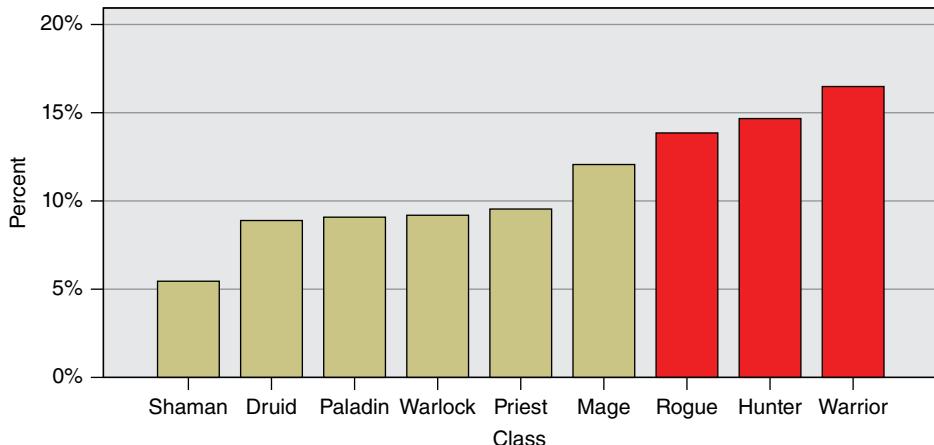


Figure 29.2 Percentage of the total population playing each class.

solo-able class (Warlocks) spending about 30% of their time grouped versus the 40% spent by Priests at the other end of the distribution. Interestingly, the more solo-able classes tend to be the most popular. When we computed the class distribution over the entire population, the three most played classes (Warrior, Hunter, and Rogue) were among those spending the least time in groups (less than 32%, see Figure 29.2).

However, we wondered if grouping behavior changed as characters gained in level. It appears time spent in groups increases about linearly with levels to stabilize at around 40%. There is then a strong increase in grouping starting after level 55, and starting at level 59, more than half of play time is spent in a group (Figure 29.3). This reflects the increasing difficulty in fighting the *mobs* (monsters) encountered in high-end dungeons: whereas *solo-able* classes have an advantage in the early stages of the game where individual quests abound, the progressive emphasis on group tasks mitigates it somewhat later on.

Another interesting aspect to consider is the impact of grouping on progress in the game. We split characters into four bands of grouping ratio (e.g., characters in the 0–1% band were almost never observed to be in a group) and then plotted the average time it took them to complete a level across all the levels. As Figure 29.4 shows, characters that are never in a group consistently level faster than characters that group at any frequency. In fact, the former are about twice as efficient in leveling as the latter. This can probably be explained by the *overhead* induced by grouping: party members have to be recruited and assembled, responsibilities have to be discussed and assigned, etc. This significantly cuts into the *productive* time that can be spent killing monsters and earning the experience points needed to progress. For achievement-oriented players (Bartle, 1996; Yee, 2005), this grouping overhead is simply a nuisance, and they simply dispense with it, completing most

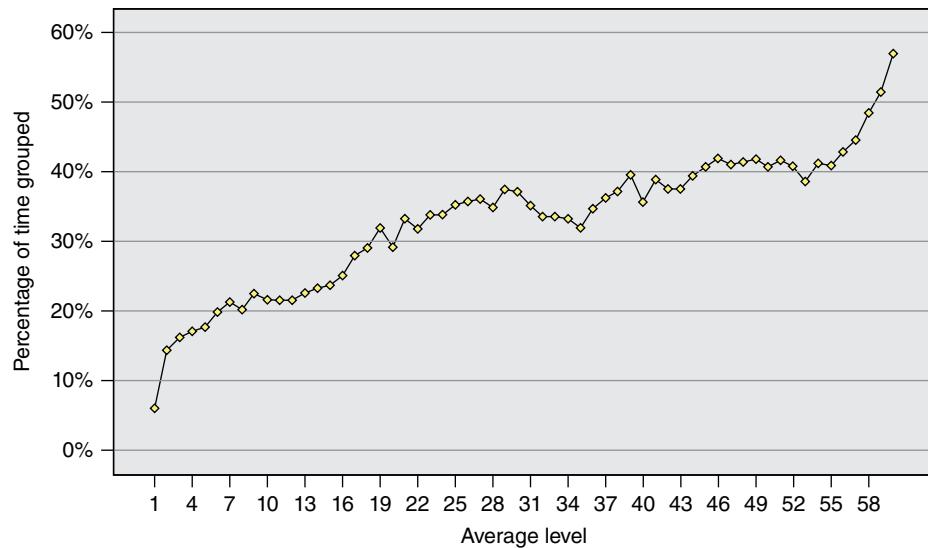


Figure 29.3 Fraction of time spent in groups, by level.

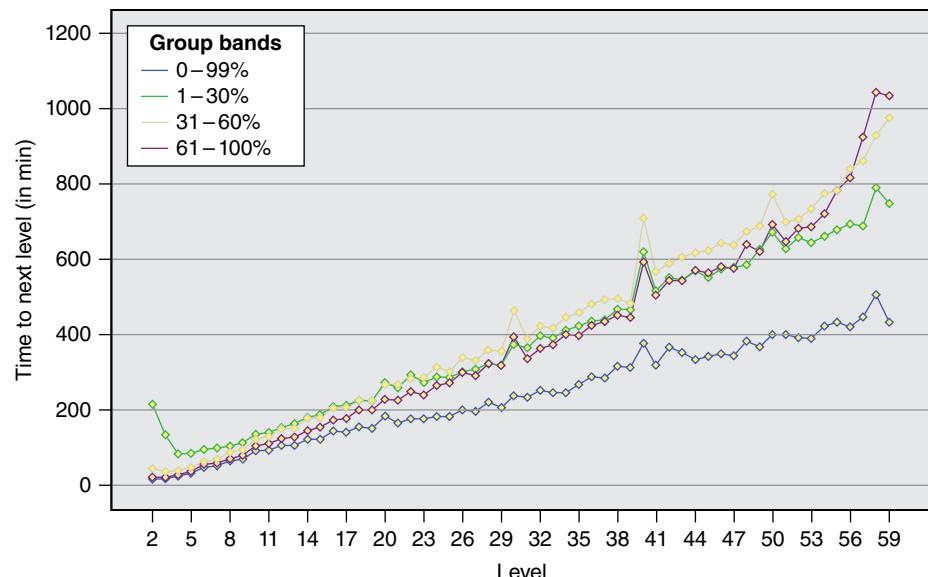


Figure 29.4 Impact of grouping on leveling time.

of the early game tasks alone instead. But as we mentioned earlier, groups cannot be ignored forever, and players will have to form parties if they want to enjoy the endgame's content.

Long-term group activities: Social networks in guilds

The grouping behaviors we just reported indicate that players spend, on average, little time in groups when they first enter WoW, but these metrics only tell one part of the story. Indeed, a player can group with others in a variety of contexts: from pickup groups quickly formed on the spot to tackle a tough monster and rapidly disbanded afterwards to long-term player associations: the guilds. We wanted to see whether collaborative play was more prevalent in these formal, persistent player groups than in others.

To evaluate the kind of social environment provided by a guild, we built social networks connecting the players in our sample using two different methods: one to assess the guild's potential for *sociability* and the other to quantify *joint activities*. With the first approach, players are connected to each other if they are observed online at the same time, irrespective of their game location (the strength of the tie is proportional to the time two characters overlap). The resulting network reflects the range of opportunities for social interaction in a guild. Indeed, it connects players who have the opportunity to chat using the *guild* channel and who are listed in the *guild members* window each time a player logs on. In other words, it lists the range of guildmates known (but not necessarily talked to or played with) by each player. In social networking terms, these connections could be called weak (Granovetter, 1973) or *bridging* (Putnam, 2000) ties. Our second type of social network connects players who are observed to be in the same zones of the game, excluding the major cities. Such a network highlights players who are spending time together, grouping with guildmates to run quests and visit dungeons. These are stronger, *bonding* (Putnam) ties based on mutual interest in the same game activities.

We computed each guild's social network degree density (see Table 29.1) (Wasserman & Faust, 1994). We limited this analysis to guilds having six members or more (densities in small networks can often be unreliable). On average, it seems that players know at most 1 out 4 members of their guilds and play only with 1 out of 10 (see Table 29.1, row 1). Guilds are therefore sparsely knit networks – a surprising finding, considering the effects they have on play patterns (Williams et al., 2006). Moreover, density is inversely correlated with size (-0.15): as guilds grow, it becomes more difficult to know and play with most of the members.

Since guilds tend to be sparsely knit, we then tried to identify cohesive subgroups within them. We performed a k-core decomposition (Wasserman & Faust, 1994) for each guild in our five size categories, using the co-location networks. Each k-core is a subgraph where each player is adjacent to at least k others. The main core (the k-core with the largest k) gives the size of the most cohesive subgroup (Table 29.2).

The ratio of main core size to guild size was inversely correlated with size ($r = -0.17$, $p < 0.05$), decreasing from 37% to 12%. In other words, growing a guild has diminishing returns as far as forming cohesive groups is concerned (i.e., a smaller and smaller fraction of the additional recruits will join the core). Still, our data illustrates why having a large guild can remain beneficial. Note that for guilds

Table 29.1 Social network densities in guilds, by size bands

Guild size	Co-presence	Co-location
All > 6 N	4205	4205
Mean	0.27	0.09
Median	0.23	0.06
6–15 N	1779	1779
Mean	0.31	0.12
Median	0.29	0.08
16–30 N	889	889
Mean	0.27	0.08
Median	0.25	0.07
31–60 N	618	618
Mean	0.22	0.05
Median	0.20	0.04
61–120 N	367	367
Mean	0.18	0.03
Median	0.17	0.02
>120 N	244	244
Mean	0.17	0.04
Median	0.14	0.01

Table 29.2 Main core size for the five guild size bands

Size band	N	Minimum	Maximum	Mean	SD
6–15	1779	0	11	3.59	2.232
16–30	889	0	17	6.40	3.042
31–60	619	0	39	8.64	4.424
61–120	367	1	54	12.14	8.050
>120	244	1	68	21.78	16.489

with 16–60 members, the average main core is between 6 and 9. Considering that the basic quest party size in WoW is five, this probably means that the core players in these guilds can form at least one, sometimes two, stable quest groups. Guilds with 61–120 members probably have three such groups. And finally, guilds with more than 120 members have a large enough core (about 22) to form a credible raid group in order to tackle the toughest dungeons at the endgame.

We also observed that players belonging to the core of a guild do not simply play with many guildmates; they play with them longer. We computed that, on average, any two members in a guild spend 22.8 min playing together over a 30-day period, while for core members the average is 154 min. Guild cores are *tight* subgroups. Finally, our data shows that a large majority (65%) of guilds have a single core group. A few guilds (13%) have two cores, and fewer still (4%) have three.

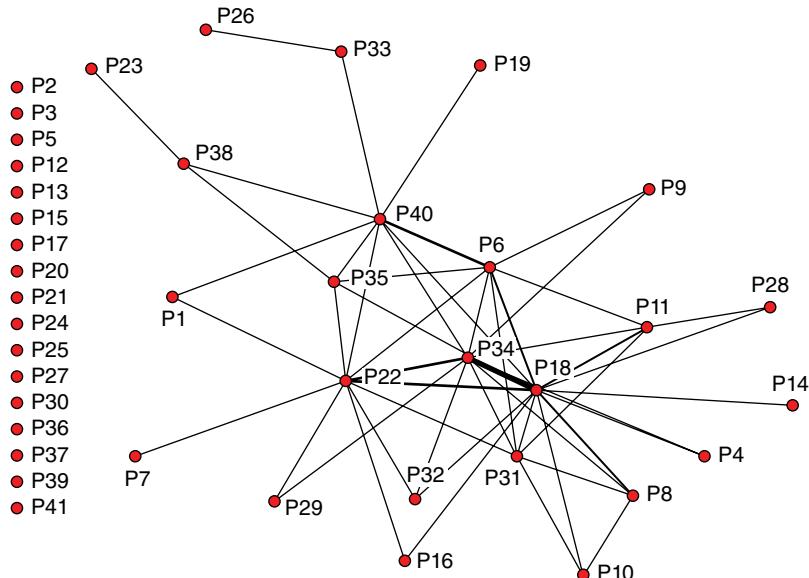


Figure 29.5 Co-location network in a medium-sized guild.

Figure 29.5 illustrates the co-location network for a typical, medium-sized guild. Out of the 41 members, 17 were never observed in the same zone as another guildmate. Among the 24 remaining there is a main core of 8 players actively playing together, with a very active central trio (their thick ties show they spend a lot of time together). The other 13 players are only peripherally connected and play with 2 or fewer guildmates.

The spectator experience

Our data paints a nuanced picture of social life in WoW: it is possible to see examples of players spending significant time alone (e.g., achievement-oriented players *soloing* quickly through the first levels, peripheral or disconnected guild members) but also examples of intense, long-term social interactions (core groups in guilds, raids at the later stages of the game). Overall, grouping is apparently an inefficient way to progress in the beginning stages of the game, and many players are not observed to be in a group until they are past level 55. Players prefer *solo-able* classes and it is only in the very late stages of the game (called the *endgame*), where dungeons are simply too difficult to enter alone, that the grouping rate rises. Therefore, WoW seems like a game where the endgame is social, not the game as a whole.

One player summarized this situation nicely by saying that during their first few months in the game world, WoW's subscribers tend to be "alone together": they spend a great deal of their time *surrounded* by other players, not necessarily interacting directly with them (Ducheneaut, Yee, Nickell, & Moore, 2006).

We would argue that this is perhaps precisely the reason why WoW has become so successful. Unlike its more *hardcore* predecessors, WoW was one of the first MMOGs designed to support “solo play.” But while the bulk of a player’s activities can be individual, they still take place in a multiuser environment, in the presence of other players. In that context other players still play important roles, even if they are not groupmates during a quest.

Indeed, WoW’s designers understand that being surrounded by other players creates a strong sense of social presence in the game. We need to remember that interactions can take place outside of groups and guilds. For instance, it is always possible to chat, whenever and wherever a player wants to. In fact, one player said the game is more like “World of Chatcraft” to him, whereby although he plays alone, he is also constantly exchanging messages with his guildmates. The other players are also a continuing source of spectacle. Wherever a player is, there are always other players around conducting various activities, quite often humorous ones. For instance, several guilds have organized a naked gnome marathon between two cities in the game world. Just seeing the runners go by is entertaining, and there is no need to group with anyone to enjoy it. Activities like these make the world feel real, populated by other human beings instead of automatons. As Ted Castranova (2005) has argued, the presence of other human players in these games validates emotions – and we think this is apparent in the ways sociability takes place in WoW. The analogy here is that playing WoW is like reading a book or working on a laptop in a crowded café: the activity can be individual, but conducting it in a bustling social space adds a certain comfort to it. Thus, our data leads to an interesting insight. Even when creating a group-based, collaborative environment like a MMOG, it still pays to think carefully about what researcher Steve Reeves and his colleagues (Reeves, Benford, O’Malley, & Fraser, 2005) have called the *spectator experience* (i.e., all the ways that social interactions can be experienced indirectly). If anything, the recent success of so-called *casual* multiplayer games on Facebook shows why this matters a great deal. Such games support exactly that kind of indirect social gaming experience. We therefore need to reframe the issue of the social impact of online games: what might look a priori like solitude is in fact ambient sociability – a very casual form of social interaction that may not create direct bonds but still satisfies our craving to feel connected to others (McGonigal, 2011). We will come back to this important distinction in our discussion section.

Personality and sociability

Up to this point, our data and analyses have been focused on illustrating various facets of group life in WoW. However, it is equally important to look at game activities from the standpoint of individual players, not groups. Indeed, WoW has been very good at offering a very broad range of activities to please gamers with different preferences. For instance, players interested in competing against other

Table 29.3 Overview of the Big Five factors in personality

Factor	Adjectives: Low scores	Adjectives: High scores
Extraversion	Quiet, reserved, solitary	Outgoing, energetic, gregarious
Agreeableness	Cold, critical, judgmental	Warm, friendly, compassionate
Conscientiousness	Careless, disorganized, spontaneous	Efficient, organized, neat
Openness to experience	Cautious, conservative, practical	Inventive, imaginative, curious
Emotional stability	Nervous, stressed, moody	Secure, calm, relaxed

players can do it through PvP combat, while players interested in more peaceful activities can work on individual quests to collect companion pets or earn titles based on how much of the world they have explored. This opens up the possibility of analyzing the relation between a player's *personality* outside the game and the kind of activities they prefer doing online. For instance, it could be that PvP combat maps back to aggressiveness offline. Or it could be that intense exploration online maps back to openness and desire for new experiences. This is potentially important since it could help shed a more nuanced light on the prevalence of solitary time we uncovered earlier. It could be that some personality types are naturally drawn to more individual activities – which, in turn, would fit Kraut et al.'s (2002) revisited Internet paradox showing that the impact of electronic communication on social life depends in part on the user's sociopsychological profile (see also "Introversion, Solitude, and Subjective Well-Being" by Zelenski, Sobocko, & Whelan, Chapter 11, this volume). In personality psychology, it is well accepted that variation in personality can be captured by five broad factors (McCrae & Costa, 1987). These five factors were developed using factor analytic techniques on adjectives and descriptive phrases of people culled from an English corpus. An overview of these five factors is presented in Table 29.3.

Studies in the physical world have repeatedly shown that judgments of personality of strangers are moderately accurate. For example, in face-to-face encounters, *Extraverted* individuals tend to speak louder, with more enthusiasm, and are more expressive with gestures (Funder & Sneed, 1993; Kenny, Horner, Kashy, & Chu, 1992). Other research has suggested that aspects of personality can be inferred from looking at someone's bedroom or office (Gosling, Ko, Mannarelli, & Morris, 2002). For example, *Conscientious* individuals tend to have well-lit, neat, and well-organized bedrooms. And individuals who scored high on *Openness to Experience* tend to have more varied books and magazines. This line of research has also extended to computer-mediated communication. In particular, studies have shown that moderately accurate personality impressions can be formed based on an individual's personal web site (Vazire & Gosling, 2004) or blog (Yarkoni, 2010). For example, in terms of linguistic output on blogs, *Agreeable* individuals were

more likely to use the first-person singular, words related to family, and words related to positive emotions (e.g., happy, joy). These studies show that we leave behind personality traces in both the physical and digital spaces that we inhabit. Given that the average online gamer spends over 20 h a week in a virtual world (Yee, 2006), it is not difficult to imagine that some number of personality traces could be found in behaviors in an online game.

Accordingly, in a recent study, we sought to directly examine how well and in what ways personality may be expressed in a game like WoW (Yee, Ducheneaut, Nelson, & Likarish, 2011). Using our most recent data set, we examined the correlations between the self-report Big Five personality factors and a set of player-level in-game metrics. A Monte Carlo simulation showed that our data contained almost eight times the number of significant correlations than would be expected from chance alone. Thus, there was a broad correspondence between the personality factors and in-game behaviors. In the following texts, we summarize the significant correlation patterns identified for each personality factor.

Extraversion. Aligned with the trait definition, players who scored high on Extraversion preferred group activities. They participated in more dungeons, which require collaboration with other players. They have also completed a higher number of endgame 25-man raid dungeons. On the other hand, players who scored low on Extraversion (i.e., more Introverted) preferred solo activities, such as questing, cooking, and fishing.

Agreeableness. Players who scored high on Agreeableness gave out more positive emotes (including hugs, cheers, or waves). They also had a stronger preference for noncombat activities, such as exploration, crafting, world events, cooking, and fishing. On the other hand, players who scored low on Agreeableness preferred the more competitive and antagonistic aspects of the game. They had killed more players, had more accumulated deaths, and focused more on getting better equipment. They had also participated in more PvP activities, such as battlegrounds, arenas, and duels.

Conscientiousness. Players who scored high on Conscientiousness seemed to enjoy disciplined collections in noncombat settings. This was reflected in a large number of vanity pets, which must be collected over time. This was also evidenced by high cooking and fishing scores, which reflect self-discipline in two activities that require a great deal of patience. On the other hand, players who scored low on Conscientiousness seemed to be more careless and are more likely to die from falling from high places.

Openness to experience. Players with high Openness to Experience scores had more characters and played on more servers. They also spent a larger portion of their time exploring the world and were more interested in noncombat activities, such

as crafting and world events. Players low on Openness to Experience were more likely to focus on the combat-oriented aspects of the game, spending more time in dungeons and raids.

Emotional stability. Although we found some significant correlations between this personality factor and some in-game metrics, these correlations were difficult to interpret as a whole (for instance, emotionally stable players created more *melee* and fewer *DPS* characters, had more kills against human and computer-controlled monsters, and used the */wave* emote more). It is worth noting that previous studies have also had difficulty identifying meaningful behavioral correlates for Emotional Stability (Gosling et al., 2002; Mairesse & Walker, 2006).

From this data, it clearly emerges that players with specific personality traits tend to gravitate toward more or less social activities. Perhaps unsurprisingly, this trend is particularly clear for Extraversion. Extraverted players took part in group activities much more often than players with other traits. For them, the game was clearly a rich social space. They played an active role in their guild, spent long hours raiding with their guildmates, and essentially seemed to view the game as an opportunity to interact with others in a fantasy context. However, if the game catered only to this player type, it probably wouldn't have achieved true mass-market success. By offering activities that may be interesting to less socially oriented players (e.g., collecting for Conscientious players, antagonistic PvP for players low on Agreeableness), the game can offer "something for everyone." This again paints a nuanced picture of solitude in WoW. Far from a natural consequence of life in electronic social spaces, solitude can be experienced willingly by those who simply do not enjoy intense, regular interactions with other players. For these players, the ambient sociability we described in our previous section is all the more important: we now discuss this key concept in more depth.

Discussion: From Solitude to Ambient Sociability

Mythical villages in the digital age

As we mentioned in our introduction, research has shown that electronic communication tools can sometimes promote solitude rather than social connectivity (Kraut et al., 1998, 2002). MMOGs offer, *a priori*, a refreshing contrast. In these environments, collaboration between strangers is the norm by design and sociability the end goal. Convincing analyses have compared MMOGs to a kind of *third place* (Steinkuehler & Williams, 2006) taking over the role of fast-disappearing social hangouts of the physical world, like the local corner pub or bowling alley (Putnam, 2000). In this context, how can we make sense of the data we presented showing that, on average, social networks in WoW tend to be fairly sparse or that many players spend a great

deal of their gaming time alone? Does it mean that MMOGs have failed in promoting the sociability that many thought was their main claim to fame?

We do not believe this to be the case. Instead, we would like to argue that the nature and structure of social interactions in WoW is illustrative of a broader set of changing expectations about sociability online, particularly from young Internet users. Indeed, the mention of sociability tends to evoke images of mythical old villages where everybody knows everybody (Bender, 1978). Idealized social networks are based on tight links, closest in spirit to the bonds seen in a family or kinship group. There is a tendency to associate *social* environments with such characteristics and dismiss anything less as *asocial* or *failed* social spaces. But this mythical conception has not kept pace with the changes introduced by technology in the past decade.

The ubiquity of electronic communication tools (from IM to cell phones or even IM on cell phones) has enabled an entire generation of users to pay *continuous partial attention* (Friedman, 2001) to a larger and looser social circle than was previously possible. For instance, teenagers using SMS are used to a form of constant, low involvement social connectivity with their friends (Palen, 2002) – they exchange frequent but short SMS *pings* simply to check on each other's status and *keep their network alive*. Users of social networking sites collect friends like others do with coins (Boyd, 2006): there is satisfaction and pleasure in being surrounded by lots of acquaintances online. And even in the physical world, what we could call the *Starbucks phenomenon* also illustrates a similar trend. Many customers go to this coffee shop to work on their laptop, an activity they could do perfectly well elsewhere if it were not for a crucial missing ingredient – being surrounded by other people. Again, the goal here is not to interact with the other patrons: it is simply to enjoy the feeling of being in a place populated by other human beings. This does not exactly fit Oldenburg's (1989) definition of a third place, which emphasizes direct interactions between visitors as a key feature. It is perhaps closer in spirit to a European street café where people watching, not necessarily conversation, is the main activity.

The *collective solitude* (Malaby, 2003) we see in WoW makes more sense in light of these parallel trends. During the early stages of their tenure in the game, players will log in and set off on a quest on their own. There is no request and often no need for a group: the objectives can be accomplished more quickly alone. And yet, this solitary activity is far from asocial. As players move through the world, they are in constant contact with their guild, monitoring the background chatter in the guild's chat channel. They see other avatars engaged in various activities in the world. They have the feeling of being in an inhabited space where the presence of others is constantly visible. There can be satisfaction in this looser form of social connectivity, and as our data illustrates, this is apparently the right mix for a large fraction of WoW's 11 million players. Later on, as group tasks take center stage and progress depends much more on collective action, players will form tighter and more structured networks in the form of high-end *raiding guilds*. Not all players,

however, are willing to transition to his more *hardcore* social experience (Williams et al., 2006). Blizzard recognized this after the game was released: they progressively added more high-level content that can be accessed alone (e.g., quests where players earn *reputation* with one of the game's factions, allowing them to purchase gear equivalent to the one obtained from raiding instances). This trend is particularly visible in the *Burning Crusade* expansion they released early in 2007.

Accordingly, social activities (or the lack thereof) in WoW seem to reflect a transition in the kind of sociability players are looking for online, with a movement toward interactions that are simultaneously looser and shorter but also more frequent and more massive. In other words, people are very much looking for the company of others, but they might not necessarily want to interact at length with them. WoW provides an ideal environment where this need can be satisfied, a point substantiated by evidence from other MMOGs that failed to attract as many players. In previous games grouping was much more emphasized in the early phases of the game, leading to denser social networks (Jakobson & Taylor, 2003) but also obviously limiting these games' appeal (EverQuest, WoW's closest competitor in the United States, peaked at a population of 0.5 million). So although WoW might not be exactly the kind of third place envisioned by others (Steinkuehler & Williams, 2006), it still plays a valuable social role by offering the kind *on-demand*, non-constraining social environment sought after by most of the new media generation. In fact, recent research argues that the unique form of sociability promoted by WoW (and other games) deserves a label of its own: ambient sociability.

Ambient sociability

In her recent book, "Reality is broken," Jane McGonigal (2011) explores the many ways video games are increasingly used to fulfill genuine human needs. Drawing on many research strands, foremost among them positive psychology (Csikszentmihalyi, 1990), McGonigal shows how games are designed to provide exhilarating rewards, stimulating challenges, and epic victories that are hard to achieve in the real world. Crucially, she does not limit her analysis to the content and pacing of games – she also argues that online games support new forms of sociability that are just as valuable as the more traditional social interactions one can find in the physical world.

To do so, McGonigal references several studies (including our own: Ducheneaut et al., 2006) showing that online games help fulfill the important social need we were just describing – namely, that it is possible for people to want company but also to not want to actively interact with anybody. She quotes a player's blog that captures the essence of this attitude: "It's the feeling of not being alone in the world. I love being around other real players in the game. I enjoy seeing what they are doing, what they have achieved, and running across them out in the world 'doing their thing' while I'm doing mine" (McGonigal, 2011, pp. 89–90). McGonigal

labels these indirect interactions as *ambient sociability*: a very casual form of social interaction that may not create direct bonds, but still satisfies our craving to feel connected to others, creating “a kind of social expansiveness in our lives.”

We believe that McGonigal perfectly captured the important duality of online games we clearly saw in our data with the concept mentioned earlier: it is possible to play alone *and* be connected to others, however, indirectly. Most importantly, this definition contextualizes solitude and makes it unproblematic. In this regard, the debate shifts from the (unfounded) possibility of an isolating effect of games, which would impoverish a player’s social life, to the notion of individual activities experienced in the context of a bustling social environment. As she later notes, it is the very existence of ambient sociability that makes a game like WoW attractive to players with widely different personalities and aspirations, much like our study of player personality illustrated – “introverts want to be liked and appreciated, and they need help just as much as anyone else: they are just not as motivated to seek out opportunities to build up that kind of positive social feeling and exchange” (McGonigal, 2011, p. 91). This clearly matches our study of how personality types are expressed in the virtual activities of WoW, showing that introverts can engage in individual activities while still getting many benefits from being surrounded by other players.

Conclusion

The social impacts of communication technologies are often subtle, slow to take place, and unforeseen by their designers (Fischer, 1992). While new patterns of social interaction become established, it is tempting to characterize these impacts in black-and-white terms – a technology might be said to promote social isolation and depression, for instance, or conversely to promote quasi-utopian communities where social interactions are frequent and always positive. As our data illustrates, however, the reality of social life in online games falls very much in between these two extremes. In fact, one of the most fascinating aspects of current online games is perhaps that they manage to fuse these two extremes into valuable new forms of sociability.

Indeed, although they were initially designed explicitly to promote social interactions between their players, MMOGs have progressively evolved to include a range of activities and game mechanics catering to a broad range of player profiles. In particular, WoW illustrates how online games can provide a virtual environment encouraging individual activities to take place in a social context, thereby promoting a new and valuable form of *ambient sociability* (McGonigal, 2011). What may look like solitude is, in fact, qualitatively different: solitary activities conducted while surrounded by other individuals, in a bustling social space, do not fit traditional definitions of social isolation. This can prove particularly valuable to players who normally would shy away from interactive social

spaces. Indeed, past studies have shown that communication technologies can simply act as a catalyst for social behavior (Kraut et al., 2002): introverts who use the Internet are likely to become lonelier, whereas extraverts who use the Internet are more likely to become less lonely. In the case of WoW, however, our data shows that the individual aspirations of introverts are supported through a myriad of solitary activities that are always conducted in the presence of others. This shows that solitude can be supported, even encouraged, in ways that are not necessarily detrimental and socially isolating.

Accordingly, we believe that online games like WoW play a valuable role in the ecology of online communication systems, allowing us to reframe our notions of what constitutes online sociability and how it is likely to evolve. Such findings are made possible in great part by the incredible richness and ease of access to large-scale, longitudinal behavioral data from these virtual worlds: it is worth emphasizing the tremendous potential of virtual worlds and online games as *virtual laboratories* for social science research (Ducheneaut, 2010), shedding light on the ever-evolving nature of human social relations in digital environments.

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A View from Political Theory

Desire, Subjectivity, and Pseudo-Solitude

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Scholars of solitude should not overlook the great Renaissance essayist Michel de Montaigne's observation that "there are ways to fail in solitude as well as in company" (1965, pp. 182–183). "It is not enough," writes Montaigne, "to have gotten away from the crowd ... we must get away from the gregarious instincts that are inside us," for "ambition, avarice, irresolution, fear, and lust ... often follow us even into the cloisters and the schools of philosophy. Neither deserts, nor rocky caves, nor hair shirts, nor fastings will free us of them We take our chains along with us; our freedom is not complete; we still turn our eyes to what we have left behind, our fancy is full of it" (p. 176).

Most political theorists would take issue with Montaigne's ideal of a free and "complete" solitude, arguing instead that individuals are indelibly marked by intimate relationships, mediated by symbolic environments, normalized by habit and custom, disciplined by pervasive social powers, and implicated in the work of overlapping cultural, economic, and political institutions. Some contemporary theorists insist not only that the solitary subject cannot exist but that he or she *must not* exist, that even the imagination of such solitude represents an act of violence toward the community (e.g., Butler, 2004; Ziarek, 1993). Later in this chapter, we will have an opportunity to reflect upon what this notion reveals about present attitudes toward solitude and connectedness. Indeed, the goal of this chapter is to elucidate a psycho-political dilemma in which the ambivalences and perceived dangers of solitude encourage the self and the community to collude in thwarting genuinely solitary experience.

Ambivalences of Solitude

Whether we conceive of solitude in literal or metaphorical terms, the social separation implied by solitude is often taken to be a rejection of others' needs and desires or of the group and its values. Much of our fascination with and consternation about solitary persons derives from their apparent *independence*: from the risks they encounter by "going it alone" and possibly "losing their way" without the support, guidance, and protection of the group. There is much of this anxiety in Friedrich Nietzsche's famous discussion of "the free spirit" in *Beyond good and evil* (1989, pp. 41–42):

Independence is for the very few; it is a privilege of the strong. And whoever attempts it even with the best right but without inner constraint proves that he is probably not only strong, but also daring to the point of recklessness. He enters into a labyrinth, he multiplies a thousandfold the dangers which life brings with it in any case, not the least of which is that no one can see how and where he loses his way, becomes lonely, and is torn piecemeal by some minotaur of conscience. Supposing one like that comes to grief, this happens so far from the comprehension of men that they neither feel it nor sympathize. And he cannot go back any longer. Nor can he go back to the pity of men.

For Nietzsche, himself one of the great solitaires of recent memory, the solitary person removes himself from the *comprehension* of others. This word, comprehension (*Verständnis*), means not merely understanding but grasping, containing, and holding. Solitary independence breaks the hold of the group on the individual, freeing him but exiling him from the sympathy of others. The only way to survive such solitude, for Nietzsche, is to call up an *inner constraint* as restrictive as that implied by dependence upon the community.

Freud's *Civilization and its discontents* (1961) and *Totem and taboo* (1938) make a convincing case that fundamental ambivalences between freedom and constraint, between asserting and atoning for independence, lie at the heart of collective life (see Galanaki, Chapter 5, this volume for a detailed discussion). Indeed, in Gabriel García Márquez's (2006) *One hundred years of solitude*, the fine Freudian line between totem and taboo, between independence and crime, is tested as the Buendía family isolates itself from the rest of the world in a surreal, collective solitude. As this small community is necessarily incestuous, anxieties about the consequences of solitude, isolation, and loss are expressed in the terror of a child born with a dreaded defect, a pig's tail. For Freud, the incest taboo has particular relevance because it symbolizes the transition from pre-societal coercive power to a community ruled by equal subjection to the law. Thus, fears of getting lost within the self or its fantasies may be thought of as fears about the incestuous nature of solitude, which seem to invite guilt and punishment for violating the laws of human society.

To the extent that we imagine solitude as a rejection of the social group, we are likely to link solitude with immorality, since morality is the code of conduct

endorsed by the group. Thus, the solitary villain (e.g., Lucifer or Satan, Shakespeare's Iago, *Taxi driver*'s Travis Bickle, *Superman*'s Lex Luthor) plots terrible acts in the shadows because he hates the group or its heroes, or because he thinks himself *above the law*. At the same time, however, if the group has become corrupt, it may require the extraordinary efforts of a solitary outsider (e.g., Plato's Socrates, the Christian Jesus, Jack Schaefer's *Shane*, *Kung fu*'s Caine) to return us to goodness. Here, the solitary individual and the group are still at odds, although the corrupt group is defeated by the solitary rebel who, of course, embodies the values of a more pure, ideal, or ancient version of the group. Somewhere between the hero and the villain lie countless modern literary characters whose ambivalent solitary undertakings define their memorable fates: Goethe's Faust, Nietzsche's Zarathustra, Melville's Bartleby, Stendhal's Julien Sorel, Dostoyevsky's Raskolnikov, Flaubert's Félicité, Ellison's *Invisible man*, Camus' Meursault, Salinger's Caulfield, and many others.

An alternative account of solitude, morality, and group life would suggest that solitary individuals need not reject or destroy the group, but may desire that the group consist of robust, independent selves. Indeed, Immanuel Kant's (1981) categorical imperative, the self-legislating moral principle by which reason instructs me to respect others' autonomy because I respect my own, coheres with a variety of contemporary social and psychological theories that maintain that individuals who experience themselves as autonomous subjects are more likely to recognize others as subjects deserving of respect (see, e.g., Benjamin, 1998; Buber, 2004; Fraser, 2000; Kohlberg, 1973; Lasch, 1984; Levine, 2004). On the other hand, individuals who primarily *react* (positively or negatively) to the demands of others inhabit a world constituted by coercion, compliance, and opposition. This is what Thomas Merton (1958, p. 13) means when he writes:

When men are merely submerged in a mass of impersonal human beings pushed around by automatic forces, they lose their true humanity, their integrity, their ability to love, their capacity for self-determination. When society is made up of men who know no interior solitude it can no longer be held together by love: and consequently it is held together by a violent and abusive authority. But when men are violently deprived of the solitude and freedom which are their due, the society in which they live becomes putrid, it festers with servility, resentment and hate.

For Merton, the ability to experience solitude is a precondition of personhood. To be incapable of solitude, or to deprive persons of solitude, is to thwart the person's capacity for loving contact with herself and, therefore, for loving contact with others.

To understand the profound relationship between solitude and subjectivity, we must define solitude not merely as *being alone*. That is, a nuanced definition of solitude must attend to both *aloneness* and *being*. It must refer not merely to the (relative) absence of others, but to the capacity of the individual *to be* when alone. By *to be* I refer not only to the survival of the physical body but to the "feeling of

existing ... as a basic place to operate from" that D. W. Winnicott (1986, p. 39) associates with creative living and to the "sense of [one's] presence in the world as a real, alive, whole, and, in a temporal sense, a continuous person" by which R. D. Laing defines "ontological security" (1969, p. 39). To be a subject of experience does not require that one be in control, active, or joyful all the time, but it does imply that one will "encounter all the hazards of life, social, ethical, spiritual, biological, from a centrally firm sense of [one's] own and other people's reality and identity" (p. 39).

There are, of course, individuals for whom the quality of being a whole, alive, creative subject has been lost. In fact, to see why these premises are reasonable and how they help us interrogate the topic of solitude, we have only to imagine an individual who is unable to *be* when alone. If I cease to *be*, in the sense referred to earlier, as soon as I am physically or psychically disconnected from others, then I exist only insofar as I am plugged into a circuit of connectedness. Break the circuit, and my life, or at least my *being*, ends. In such a vulnerable condition, avoiding the disintegrative experience of nonbeing depends upon assuring reliable and constant connections with others. If my ability to *be* vanishes when alone, or when in crowds, or when under stress, or when lost in a daydream, then it is difficult to imagine myself as an independent, autonomous, or cogent person, "as a unit, cohesive in space and enduring in time, which is a center of initiative and a recipient of impressions" (Kohut, 1977, p. 99), for my experience of *being*, itself, is evanescent and precarious, a product of specific environmental conditions which may change or falter.

More likely, perhaps, is a condition in which my compliance with others' demands affords me not a genuine sense of aliveness but its facsimile: the approval of parents, peers, or authority figures, conditioned upon the suppression of my authentic self and its replacement with what Winnicott (1965) refers to as a *false self*. If I am desperate not to lose connection with others, I may sacrifice much of myself to please others or to win the prize of belonging to the desired group. Here, I am a consenting hostage to others, since the conditional approval I receive for compliant behavior results from making myself not a subject but an object of others' desire. R. D. Laing offers the chilling example of a young schizophrenic woman named Julie whose early family life seemed to demand obedience and compliance to such a degree that Julie was "the ideal of what perfection is in a baby" to her mother and yet was at the same time "an existentially dead child," cut off from authentic demands or emotions of her own (1969, p. 183). Julie's recurring concern in treatment was that "a child had been murdered" and her primary complaint was that mother never "let her be" (pp. 179, 184), a concern and complaint about a kind of *being* closely associated with the capacity to experience solitude.

The experience of solitude, therefore, depends largely upon the relationship between an individual's inner (or psychic) experience and the external world. In order even to imagine solitude, given the realities of interconnectedness, one must be able to "limit access" to a part of one's experience, specifically to internal experience, to the world of thought and fantasy (Levine, 2003, pp. 60–61). To have

a degree of control over the boundary between internal and external experience permits the individual to protect her internal world, which means that this world is not constantly at risk of being intruded upon, emptied, or destroyed by others or events. Such control also implies the capacity to generate meaningful and valuable experiences in the internal world, for if one wishes to *be* when alone and not merely to wither or starve, one must be able to generate and possess some of the vital stuff of being. If one is wholly dependent upon others, upon things, or upon various sorts of consumption, attention, or excitation in order to *be*, then solitude can only mean deprivation or self-deprivation.

These preliminary speculations help explain why voluntary experiences of solitude are often radically distinct from involuntary isolation or so-called solitary confinement, inasmuch as the former are created by the self and undertaken with the expectation that there are good things to be found *inside* the solitary experience, while the latter are imposed by another and are intended to deprive the individual of good things which are thought to exist only on the *outside*. Indeed, we may say that forced isolation strives to inflict deprivation upon the punished child or adult, such that the punished self's dependence on the punishing authority is reaffirmed. The punishers say or imply: "You have defied us. We will now isolate you, depriving you of care, attention, or interaction such that you will have difficulty *being* in your solitude. You will learn through this experience of suffering not to defy us again."

There is perhaps an identifiable subcategory of mistreatment in which neglect, isolation, or abandonment (physical and/or psychological) destroy the self's ability to experience being. In a physical sense, a child who is neglected or abandoned may fear literal starvation, may be injured by people who are not invested in his well-being, or may lack medical care that would protect him from illness. In a psychological sense, emotionally neglected or isolated children may suffer psychic annihilation if the missing connection causes the child's self to disintegrate, to internalize others' rejections and become assured that it is unworthy of love, or to lose itself in overwhelming experiences of panic or rage. In a sense, neglect, abuse, and some forms of punishment force upon the victim experiences of solitude while depriving the victim's self of the resources needed to survive it.

The remainder of this chapter attends less to such victimization than to the self's complicity in generating experiences of apparent solitude in which genuinely solitary *being* is subverted or made impossible. I use the term *pseudo-solitude* to describe such forms of aloneness and isolation, literal or figurative, in which the self appears to be alone but fails in being solitary. In the following interrelated vignettes of pseudo-solitude, resistances to genuine solitude reflect an error in imagining the ethical relationship between the individual subject and the group. I hope to show that these pseudo-solidary efforts to cope with the dilemma posed by solitude and subjectivity rely heavily on identifications with internal and external objects that enforce self-repression and, often, end up recruiting such objects in repressing and depriving others (on the psychoanalytic use of the term "objects," see Greenberg & Mitchell, 1983, p. 10).

The Pseudo-Solitude of Stoic Self-Control

The Cyprus-born slave turned Stoic philosopher Epictetus (circa 50–130 CE) is perhaps best known for his insistence upon the difference between that which is “up to us” (*eph' hēmin*) and that which is “not up to us.” “Our bodies are not up to us,” states the *Enchiridion*, often to the surprise of today’s readers, “nor are our possessions, our reputations, or our public offices.” By contrast, only “our opinions … our impulses, desires, aversions” are within our control (1983, p. 11). While not excluding periods of literal sequestration, the Stoics emphasized a moral solitude in which the soul (the Greek word for soul is *psyche*) was severed from the external world, removing desire from any object of which one was not truly the master.

Based upon a rather complicated theory of knowledge and natural determinism (see Saunders, 1994, for a detailed description), the Stoic goal was to *comprehend* (*katalepsis*) the laws of Nature such that one would be untroubled by events that others might find distressing or tragic. If we truly comprehended Nature’s law and the natural inevitability of death, we would appreciate that even living and dying are not *up to us*. Thus, we would no longer suffer at a loved one’s loss. “If you kiss your child or your wife,” instructs Epictetus, “say that you are kissing a human being; for when it dies you will not be upset” (1983, p. 12). The Stoic’s pseudo-solitary self-protection was won, therefore, by a profound identification with the will of Nature, such that one’s desire was never at odds with actual events. Indeed, to achieve the Stoic’s solitude, one converted oneself into an object of Nature’s will: “Do not seek to have events happen as you want them to, but instead want them to happen as they do happen, and your life will go well” (1983, p. 13).

As Michel Foucault notes in *The care of the self*, the goal of the Stoic practice was to effect a “conversion to the self” (*epistrophe eis heauton*), in which the self cares for itself above all other “everyday agitations” including “absorption in the lives of others” (1988, p. 65). For the Roman Seneca, a soul so withdrawn “is independent in its own fortress; and every weapon that is hurled falls short of the mark” (quoted in Foucault 1988, p. 65). Here, we recognize the attempt by the Stoic to achieve something misleadingly similar to the ontologically secure quality of being referred to earlier: a way to protect the self faced with (mis)fortune. However, the Stoic’s separation from “the lives of others” represents not primarily an effort to develop and fortify the self within the context of social life but an effort *not* to be a self, not to be a subject of experience, and not to pursue one’s own desires. The Stoic is asked not to create his own destiny but to “remember that you are an actor in a play, which is as the playwright wants it to be” (1983, p. 16). To the extent that the Stoic’s political, financial, and religious duties were determined by others, the Stoic’s pseudo-solitude actually represents a will to obey others completely, without hesitation or complaint.

In Hal Hartley’s (1990) film *Trust*, Matthew stoically returns to a job he despises in order to support the teen-aged Maria and her unborn child. One evening, he sits catatonically on the couch watching a barely audible television. Maria cannot get his attention:

MARIA: Can you stop watching TV for a moment?

MATTHEW: No.

MARIA: Why?

MATTHEW: I had a bad day. I had to subvert my principles and kowtow to an idiot. Television makes these daily sacrifices possible. It deadens the inner core of my being.

MARIA: Let's move away, then.

MATTHEW: They have television everywhere. There's no escape.

Stoics may not approve of Matthew's sardonic admission that his solitary television watching is an attempt to deaden himself so that he will be able to continue to work his dreadful job. And yet, the goals of both Matthew's and the Stoic's programs of self-management are the same: to acquiesce to one's duties, to relinquish desire and cede autonomy to a stronger will, and to recruit this stronger will in an effort to suppress one's frustration, grief, rage, or rebelliousness. In these cases, what appears to be a solitary retreat from the social world turns out to be a pseudo-solitary quest to thwart the discovery, expression, and pursuit of one's own autonomous *being* by repressing desires that conflict with overpowering forces one feels unable to challenge or defeat.

Albert Camus once wrote of his most famous literary character, Meursault, that he "refuses to play the game" of social pretense and that this refusal calls forth a violent backlash from society (1968, p. 352). *The Stranger* is very much a critique of the social condemnation of solitude, since the judge and jury who condemn Meursault to death do so because, perhaps like the Stoic, Meursault fails to mourn his mother's and his victim's deaths (Bowker, in press). Nevertheless, if Meursault is presented as an ambivalent solitary hero, he is more accurately described as a pseudo-solitary object of a higher will, the inhuman will of nature, the "gentle indifference of the world" (*la tendre indifférence du monde*) in which he identifies "a brother" who is "so much like myself" and to which he cedes his choice and moral responsibility (Camus, 1988, pp. 122–123). Ironically, it takes a great deal of self-control to cede this much control, to regard all matters of social life and human relationships as indifferent, and to supplant one's authentic will with an idealized, omnipotent will of nature. Of course, this form of pseudo-solitude defends against the loss of self primarily by giving up the self. It also ensures that what little may be left of the self is never truly solitary (see Bowker, 2013).

The Pseudo-Solitude of Teenage Vampiredom

In today's American popular culture, perhaps no figure conveys the ambivalence and fascination associated with solitude more effectively than the vampire. Compared to the old vampire's seclusion in a remote castle, today's vampire lives a life of extensive social integration. In the HBO series, *True blood*, the "mainstreaming"

movement endorsed by organizations like the *American Vampire League* advocates such integration and cooperation between humans and the undead. In the popular *Twilight* books and films, the vampire Edward Cullen attends and graduates from high schools around the country over and over again; indeed, his growing collection of mortarboard caps fashions a piece of abstract art on the wall of his bright, elegant, glass house.

Like the vampire of old, today's vampire suffers from an intense craving for blood. Being immortal, the vampire would not die without blood, but would experience an eternal hunger. In this sense, the vampire drinks blood not precisely to live but to feel alive, *to be*, or "to come alive" (Levine, 2003, p. 104). Vampire protagonists, "good" vampires, stoically master their desire to consume fresh human blood, settling instead for animals, synthetic blood substitutes, blood bags, and the like. This resistance to the vampire's most basic and powerful desire is apparently no mean feat, since the experience of being surrounded by humans, particularly young and attractive ones, is depicted as an excruciating torment. Perhaps because the contemporary vampire lives amidst society, the vampire's hell, like Sartre's existentialist hell, "is other people" (Sartre, 1989).

The *good* vampires of the Cullen coven, with whom (the human) Bella Swan associates in the *Twilight* series, demonstrate their superhuman power not only in feats of physical speed and strength but in holding themselves to their strict dietary regimen. They have committed themselves to an eternal life of repressing their desire and to contending with the anxiety of being overtaken by desire, either in the form of an irresistible impulse to kill or in the (externalized) form of rivaling, murderous, *bad* vampire gangs.

In the penultimate chapter of the *Twilight* series, Bella is impregnated by her vampire lover, Edward, and faces a grim prognosis due to the greedy and destructive half-human half-vampire fetus she carries. The story of Bella's labor is very much a story of solitude and its relationship to the dilemmas of subjectivity and morality. To nourish her baby, Bella must submit to being consumed from the inside out, until she is on the very brink of death. Indeed, the fetus is so destructive to Bella's body that, for Bella to survive the birth physically, she must become a vampire, herself, and risk being overtaken by her own vampire destructiveness. In order for Bella to survive the birth *psychically*, in order for Bella to remain *herself* after her metamorphosis, however, she will have to commit to the eternal suppression of her desire for fresh human blood. The child Bella carries thereby represents a dilemma of the parent who must facilitate the development of a child (a nascent subject) while suspecting that the child's deepest desires are dangerous and destructive, perhaps even likely to overwhelm the parent with their danger and destructiveness. If the parent fears the desires of the child, then the parent will not lay the groundwork for the child's separate (or solitary) subjectivity, but will insist that the child become a *good* child (a *good* vampire) by learning early to suppress her most fundamental desires.

As discussed earlier, ethical conduct that respects the self's and others' subjectivities cannot be based on the repression of the self or on mere compliance to the

will of others who define *the good*. Rather, an individual requires ontological security and a feeling of *being* in order to “live out into the world and meet others: a world and others experienced as equally real, alive, whole, and continuous” (Laing, 1969, p. 39). That is, the achievement of secure and relatively separate being becomes the foundation for ethical respect of others’ secure and relatively separate beings, which implies respect for (although not enthrallment to) others’ unique differences and needs. In the pseudo-solitary world of the vampire, however, ethical behavior is framed as primarily a matter of depriving the self. To be ethical, for the vampire, means to repress one’s most basic desire. For the vampire, to be ethical is *not* to come alive. To be ethical is also *not* to be solitary, for we are told in narratives such as *True blood* that when vampires spend too much time apart from humans, they *nest*, meaning that they begin to countenance their own true desires and to rationalize their bloodthirst.

Being good, if we approach collective life in this way, comes to mean repressing the self in service of others, identifying with others more than with ourselves, and enslaving ourselves to the will of the group, ironically ensuring our goodness by insisting upon our essential badness. If our attempts at coming alive are imagined to destroy others, then coming alive will be associated with destructiveness, and we will have to scorn our desire to be alone and to come alive as shameful transgressions. Thus, the vampire would seem to inhabit a condition of shameful compliance, in which she struggles to redeem herself from shame by enforcing the repression of her (and others’) desires on the grounds that they are repugnant and destructive.

This repression of the vampire’s vitality is rewarded by the good favor of human others, by the vampire’s ability to identify with humanity and goodness in spite of her (shameful) undead condition, and by reestablishing a connection with the vampire’s former human self. It should be remarked here that what the vampire identifies with is not merely the human community but the capacity to sacrifice, repress, and discipline the self for the sake of others, a capacity held up in such narratives as the quintessential *human* virtue.

If the vampire, like the Stoic, must recruit a superior will to help her ensure that she is never *alone with her desire*, then contemporary vampire sagas present us a picture of the good life as a life of self-repression and a life without solitude. If vampire narratives involve wish and fantasy, it would not be surprising if this self-repression and this impossibility of solitude were, themselves, important wishes, important parts of the fantasy.

The Pseudo-Solitude of Modern Democratic Life

Alexis de Tocqueville’s prodigious *Democracy in America* (2000), first published in 1840, still influences political theorists concerned with the deterioration of civil society. More contemporary studies like David Riesman, Denney, and Glazer’s *The*

lonely crowd (1950), Robert Putnam's *Bowling alone* (2000), and Robert Bellah, Madsen, Sullivan, Swidler, and Tipton's *Habits of the heart* (1996), to name but a few, echo Tocqueville's major concerns. Tocqueville worried that the American democratic revolution had created a lamentable creature known as an *individual*. Individualism, for Tocqueville, was not something of which Americans should be proud. Individuals in a democratic society, rather, were minimal, withdrawn, and alienated from both others and themselves, for American society "make[s] each man forget his ancestors ... hides his descendants from him and separates him from his contemporaries; it constantly leads him back toward himself alone and threatens finally to confine him wholly in the solitude of his own heart" (2000, p. 484). Tocqueville's claim was that individualism, a pervasive form of pseudo-solitude, convinces a person *not* of her own independence but of her considerable dependence upon the power of the majority.

It may seem paradoxical to argue that Americans' mental energies are regularly turned back toward *private* concerns, while at the same time, Americans are enthralled to the will of the group. It is a condition in which individualism and freedom are thought to be wholly consistent with majority rule, popular opinion, and even common sense. For Tocqueville, American society resembled nothing more than a royal court in which citizens sang the praises of *the people* instead of the king and in which value was found only in deeds that accorded with popular ideals. The logic of democracy helps to explain this apparent paradox. In a democratic society, the will of the majority is a majority of individual wills, each of which, according to the premise of moral equality, is as worthy as any other. Under the assumption of moral equality, mathematically speaking, two heads are better than one, and a majority of heads is better than a minority.

The dangerous consequence of this way of thinking, for Tocqueville, could not be overstated. Whereas a king "has only a material power that acts on actions and cannot reach wills," argued Tocqueville, "the majority is vested with a force ... that acts on the will as much as on actions, and which at the same time prevents the deed and the desire to do it. I do not know any country where, in general, less independence of mind and genuine freedom of discussion reign than in America" (2000, pp. 243–244). In a theoretically equal society, "the public therefore has a singular power among democratic peoples, the very idea of which aristocratic nations could not conceive. It does not persuade of its beliefs, it imposes them and makes them penetrate souls by a sort of immense pressure of the minds of all on the intellect of each" (p. 409).

The overpowering will of the majority, Tocqueville feared, condemned most Americans to lives of unwitting conformism, pointless agitation, and the endless pursuit of social status and material wealth: busy yet trivial existences in which solitude, reflection, and creativity could find no place. As Americans lost their capacity to be solitary, they reverted to the kinds of activity that express *not being* an autonomous subject or self, what Winnicott calls "a whole life ... built on the pattern of reacting to stimuli" (1986, p. 39):

[T]here is nothing less fit for meditation than the interior of a democratic society... Everyone is agitated: some want to attain power, others to take possession of wealth. In the midst of this universal tumult, the repeated collision of contrary interests, the continual advance of men toward fortune, where does one find the calm necessary to the profound combinations of the intellect? How does each man bring his thought to a stop at such and such a point, when everything moves around him and he himself is carried along and tossed about every day in the impetuous current that swirls all things along? (Tocqueville, 2000, p. 434.)

In Tocqueville, we find a critique of democratic individualism on the grounds that while it seems to isolate each individual, it also rivets individuals to the will of the majority in a way not at all dissimilar to the Stoic's self-binding to the will of Nature, or the vampire's identification with the human capacity for self-repression. Perhaps the most frightening thing about Tocqueville's idea is that he does not suggest that Americans, along with citizens of other modern democracies, outwardly advocate groupthink or conformism. Quite the opposite, Tocqueville saw that Americans held to their independence and individuality as almost religious precepts. That democratic individuals, as well as those inhabiting what we now refer to as *mass cultures*, may unknowingly propitiate the will of the majority while espousing their own unlimited independence and individuality reminds us that pseudo-solitary assertions of independence may express unconscious desires for the very opposite of genuine independence, just as colonization undertaken in the name of liberation creates conditions antithetical to genuine liberation.

The Pseudo-Solitude of the (Pseudo-)Public Sphere

Jonathan Franzen's well-known essay on the erosion of the public sphere, "The Imperial Bedroom," begins by claiming that reading the Starr Report on the Clinton-Lewinsky scandal while sitting alone in his Manhattan apartment marked a personal violation, a feeling of "being intruded upon" (2003, p. 41). Franzen then takes the reader on a tour of the history of privacy in the United States, concluding that the privatization of life and the broadcasting of personal information across mass media mean that "we're flat-out drowning in privacy" (p. 48).

When Franzen writes that "what's threatened isn't the private sphere. It's the public sphere" (2003, p. 48), he seems to mean that details of personal lives have come to pervade public spaces and that there is no more room for public discourse, only for the exchange of intimate yet trivial "dirty laundry." Thus, reading the Starr Report over breakfast becomes an instance of "private life brutally invading the most public of public spaces" (p. 51), a "flood of dirty suds from the Office of the Independent Counsel, oozing forth through official and commercial channels to saturate national consciousness" (p. 40).

In his opposition to casual Fridays, modern décor, gossip columns, Internet chat rooms, and personalized voicemail, Franzen extolls the virtue of shame and the dream of escaping the “tangled sheets” and “in-your-face consumerism” of private life, where “flashers and sexual harassers and fallators on the pier and self-explainers on the crosstown bus all similarly assault our sense of the ‘public’ by exposing themselves” (p. 49). Alternatively, Franzen envisions a public sphere exemplified by the art museum, where a person can “promenade” in a “place to go when you want to announce to the world … that you have a new suit, or that you’re in love, or that you suddenly realize you stand a full inch taller when you don’t hunch your shoulders” (p. 50).

It would seem that Franzen has made an error in designating as “public” the promenading of one’s private possessions, one’s latest romance, or one’s taller stature while condemning as “private” not only the details of the Starr Report but all those who “assault” us by “exposing themselves.” Of course, we may imagine that there are some differences between revealing one’s expensive new suit and discussing unsavory personal matters within earshot of others or between “dress[ing] to the nines” for a party and “flashing” one’s body on the subway (p. 54). But the difference Franzen alludes to here is not merely a difference between controlling exposure and being forced to see what one does not wish to see. Rather, Franzen’s account suggests that all should be dominated by self-repression and shame. It is, after all, the “delicious … enforced decorum” (p. 50) that Franzen lauds in the corporate offices of the “upper echelons of business” where “codes of dress and behavior are routinely enforced, personal disclosures are penalized, and formality is still the rule” (p. 51). Franzen defends a concrete standard that determines who may display what, where, and when. People who fail to adhere to the standard “should be ashamed,” for “without shame there can be no distinction between public and private” (p. 49).

Thus, Franzen strives to define and defend a public sphere, a sphere traditionally associated with the government and the law, ostensibly to protect individuals from others’ intrusions. And Franzen is right that a public sphere should protect the private from the public, for there is no outlawed idea or “thought-crime” in a public sphere, just as a public sphere should be governed by the rule of law on behalf of abstract and equal individuals, not by the rule of particular interests on behalf of specific individuals or privileged groups. When political discourse is infused with narratives of sex and desire and when details about intimate encounters “ooze” into public space (note the emphasis on the loss of boundaries), it may seem more difficult to separate the public from the private, to interact with others’ public selves, and to be treated as a public self.

Emile Durkheim’s understanding of the State, which is the instantiation of the public realm in political life, helps us to better understand the relationship between the individual self and the public realm that Franzen seems to be after: “Far from its tyrannizing over the individual, it is the State that redeems the individual from society It is not this or that individual the State seeks to develop, it is the individual *in genere* [in general or in the abstract], who is not to be confused with

any single one of us" (1958, p. 69). For Durkheim, the State protects the boundaries and separateness of each self equally; thus in following the law, I am freed from mere obedience to (or rebellion against) the group or majority. Instead, the laws of the State make my own subjectivity and others' subjectivities possible, so "whilst we give the State our cooperation ... we do not become the agents of a purpose alien to us" (p. 69).

As for Durkheim, for Hannah Arendt, the public or political realm represents an emancipation from the pressures of "the social" realm (1998, pp. 22–49), which Hanna Pitkin (2000) famously caricatured as "the blob." Like Franzen's "dirty suds," the social "blob" swallows up all in its path, destroying both public and private lives in an embroilment of private interests, intimate exchanges, and "bare life" pursuits (Agamben, 1998). Indeed, for Arendt, the social realm of consumption, labor, money, and the like turns a nation into a vast, multiplied family which, by eliminating the boundaries that define separate subjectivity, reduces all to "only one opinion and one interest" (Arendt, 1998, p. 39). This coerced conformity "excludes the possibility of action ... Instead, society expects from each of its members a certain kind of behavior, imposing innumerable and various rules, all of which tend to 'normalize' its members, to make them behave, to exclude spontaneous action or outstanding achievement" (p. 40). Arendt's vision of a despotic social realm, then, echoes Tocqueville's concern over the "omnipotence" and "tyranny of the majority" (Tocqueville, 2000, pp. 235–249).

Thus, although a public sphere is necessary to protect the individual from undue coercion by powerful groups, there is also a danger in certain insistences upon the separation of public and private. It is possible to abuse such distinctions to enforce repression by demanding that some be held to standards of "public" behavior, while others retain the right to behave "privately." Something of this abuse is present in Franzen's essay, in which some must refrain from cell phone conversations and untoward self-exposure, while others may go to the art museum to show themselves off. Some individuals' self-expressions, that is, enjoy the label of "public" since they accord with the norms of powerful or influential groups, while others' self-expressions are an unwelcome invasion of "privacy." Such defenses of what might be called a pseudo-public sphere typically deploy the words *public* and *private* as cudgels, defining both in ultimately *private* terms.

Perhaps distinctions between museum promenading and cell phone talking seem innocuous enough. But while it is not Franzen's argument, it would not be inconsistent with Franzen's logic to argue that certain displays of affection (for instance, those between two men or between people of different ethnicities) are not appropriate for *public* spaces. Such distinctions therefore obscure the ways that political and social powers have been used to shame and suppress individuals and groups throughout history. Indeed, several civil rights movements, perhaps particularly women's movements, over the past century have relied upon the assertion that matters some deem private are truly public and that unless putatively private matters can be made public, domination and oppression can never be meaningfully addressed.

Worse, debates about the political value of shame, now not unpopular in political theory and discourse (see, e.g., Deonna, Rodogno, & Teroni, 2012; Tarnopolsky, 2010), often rely on paranoid orientations to the world in which pervasive fears of social degeneration are addressed by affirming the importance of repressing the self. Because being *public* here seems to demand shame, the repression of the self becomes equated with moral behavior, at which point “the energy of desire gets channeled into the sadistic impulse to repress others” (Levine, 2004, pp. 106–107). If my desire must be repressed, then it may also be translated into a desire that others repress themselves, in which case I may “convince myself that desire and duty are one and the same, or that I am forced to act on self-interest to protect myself from the immoral and threatening conduct of others. In other words, I might adopt the strategy of the grandiose self for whom what is good for the self is the good: ‘*l'état, c'est moi*’ [*The state, it is I*] or ‘what is good for General Motors is good for America’” (Levine, p. 107).

If privacy is perceived as a threat to the community, then we may arrive at the curious situation in which some take it to be their moral responsibility to thwart the privacy of others. As we have seen, genuine solitude is associated with the ideal of a public sphere that protects individuals’ boundaries and autonomy. But, too often, putative defenses of the public sphere disguise attacks on solitude and subjectivity in which the demands, standards, or codes of a powerful group are forced upon individuals. Rather than protecting the boundaries of abstract personhood and the right of subjects to express themselves and their differences, such pseudo-solitary projects would subject all individuals to the will of a majority or group that believes its interests represent the interests of the entire community.

Conclusion

The refrain of the recent 2012 US Republican National Convention in Florida, “We built it!,” expressed a rejection of the contribution of the Federal government in economic life. A reaction to a comment by President Obama arguing that business owners did not build the schools, roads, regulatory mechanisms, and other infrastructure on which their success depended, “We built it!” became a pseudo-solitary rallying cry for American conservatives. It is difficult to describe the multilayered irony of a scene in which thousands of delegates, gathered in a building built with public funds, cheered a slogan of Ayn Rand-esque individualism, in unison and in the first person plural, in order to support the election of a national political party’s nominee to public office. Republican candidate Mitt Romney’s memorable and equally ironic applause line was “Now is the moment when we can stand up and say, ‘I’m an American. I make my destiny!’” (Cohen, 2012).

It is important to see that, even more than a denial of past assistance, “We built it!” expresses a desire to reduce or eliminate the government as a source of assistance, thereby advocating conditions in which individuals and communities do

not receive public assistance, where private interests and market forces are the determining factors in social and economic life. That is, the call to reduce or eliminate government means exchanging public relationships, in which individuals are considered abstractly and equally, with private relationships, in which particular interests and demands combine or collide. Paradoxically, the cry of “We built it!,” while seeming to express the demand for independence, actually implies that individuals should be more fully subjected to the determinations of the market and to those holding positions of power in the market, ultimately ensuring a more complete domination of the individual by the will and interest of the group.

Similar trends in education, where the development of students’ subjectivities is very much at stake, should not be ignored. Today, calls for private, market-based solutions to educational failures, typically endorsed by the political right, are echoed in pedagogical trends often aligned with the political left, such as the growing emphasis on community-based learning, pedagogies of social justice, “learning communities,” cooperative learning, teamwork and group work, and even the unquestioned value of “leadership” and “communication skills.” Indeed, there seems to be a mounting resistance to the suggestion that the individual and social functions of education should remain at all distinct (see Bowker, 2012). Rather, higher education is now rarely considered an end in itself, nor an enrichment of the student as an end in herself, but as a process by which the realities of community life, economic life, and political life “outside the campus walls” are recapitulated in order to better train and socialize young people to meet employers’ demands, communities’ needs, and collective political and economic aspirations.

Oddly enough, a pseudo-solitary world, where individuals are more thoroughly subjected to the wills of others, is precisely what many contemporary political theorists have prescribed, particularly those who refer to the influential work of French-Lithuanian Talmudic scholar, Emmanuel Levinas (1969). For Levinas, a particular kind of violence inevitably occurs when we relate to others, for our desire is to subsume them (or perhaps to *consume* them) in systems of our own making (1969, p. 21). To prevent such violence, Levinas recommends what C. Fred Alford calls “hostage-being,” a way of interacting with others that is both total and minimal, in which the self must be enslaved to, held hostage by the other (Alford, 2002).

Levinasian ethics are, in a sense, a destruction of the ability *to be* that we have associated with solitude, separateness, and subjectivity. Here, the other must always overwhelm me, and ethical action requires “the putting into question of my spontaneity by the presence of the other” (Levinas, 1969, p. 43) as well as the suspension “of my spontaneity, of my *jouissance*, of my freedom” (Critchley, 2002, p. 21). Levinas claims that I must give up even my right to exist, the most basic expression of ontological security, for “in the relation to the face [of the Other] I am exposed as a usurper of the place of the other … Accordingly, my duty to respond to the other suspends my natural right to self-survival, *le droit vitale* … To expose myself to the vulnerability of the face is to put my ontological right to existence into question. In ethics, the other’s right to exist has primacy over my own” (quoted in Butler, 2004, p. 132).

This line of thought is picked up by several contemporary theorists, most notably by Judith Butler, who claims that loss and grief are valuable because these emotional states display “the thrall in which our relations with others hold us … in ways that often interrupt the self-conscious account of ourselves as autonomous and in control” (2004, p. 23). What is to be “gained from grieving, from tarrying with grief, from remaining exposed to its unbearable,” therefore, is the loss of the capacity to be solitary, autonomous, and in control. If, instead, like the pseudo-solidary vampire, we develop “a point of identification with suffering itself” (p. 30), we may possess the other in ourselves, alienating ourselves from our own desire and thereby protecting ourselves and others from our innate destructiveness: “My own foreignness to myself,” Butler writes, “is, paradoxically, the source of my ethical connection with others” (p. 46).

Here, a tremendous loss of solitude, of self, of subjectivity, and of the ability to relate to others as subjects becomes “the tie” that binds the group together (Butler, 2004, p. 22). This call for ethical self-sacrifice turns out to be a demand that each individual be penetrated by and subjugated to the will of the other, to the demands of the group, and to the sameness of the community in which “loss has made a tenuous ‘we’ of us all” (p. 20). In this mistaken pseudo-solidary ethic, like that of the Stoic, the vampire, the Tocquevillian American, and the defender of a pseudo-public sphere, the survival of the group would seem to demand that none shall be solitary.

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A View from Religious Studies

Solitude and Spirituality

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Particularly in the West, spirituality typically refers to the personal, experiential aspects of religion in contrast with an organized community's doctrines, institutions, and rituals. There are many links between modern understandings of spirituality and the cultivation of time spent alone. Yet solitary spiritual disciplines have been practiced within many organized religious traditions, too, even though religious communities have often been suspicious of hermits and solitary seekers. This chapter discusses first the history of attitudes to solitude in the Bible and Christian tradition; then, briefly, solitude in other religious traditions; and finally, various spiritual meanings of solitude for modern individuals who do not consider themselves members of any organized religious community.

Solitude in Christian Tradition

There is not one simple Christian view of solitude, but rather a lively debate about its meaning and value. The Bible portrays solitude in a variety of ways. For example, Yahweh often speaks to Israel's leaders and prophets when they are alone. Moses is by himself when he first receives God's call, and he spends 40 days alone on Mount Sinai at the time he receives the Torah. Amos, like most of the prophets, is an isolated figure, "a herdsman and a dresser of sycamore trees" (Amos 7:14), when God reveals the powerful visions that portend the fate of Israel. Solitude is an important factor in the prophets' marginal position in Israel, shaping their critical perspective and their sensitivity to injustices suffered by the less powerful and by outsiders. Elijah's call narrative describes how, fleeing Ahab's persecution, this prophet "went a day's journey into the wilderness, and came and sat down under a solitary broom tree" (I Kings 19:4). The lone tree under which Elijah sits when an angel appears symbolizes

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his own isolation. Later, still alone, Elijah perceives the Lord not in the wind, an earthquake, or fire, but in “a sound of sheer silence” (19:12). It is hard to hear the sound of silence in the presence of others. Yahweh’s call to form the community of Israel is often heard most distinctly in a moment of solitude.

However, the prophet’s solitude is a temporary state, and the condition of long-term isolation from other people is one viewed with pity or horror in the Hebrew Bible and by most of later Jewish tradition. In the Creation account Yahweh makes a woman because “it is not good that the man should be alone” (Genesis 2:18). Those who do not observe the Torah, for instance, by failing to observe the day of atonement, are threatened with an isolation that is equivalent to extinction: “For anyone who does not practice self-denial during that entire day shall be cut off from the people” (Leviticus 23:29). Ecclesiastes warns that solitude is dangerous: “For if they fall, one will lift up the other; but woe to one who is alone and falls and does not have another to help” (4:10). In many of the Psalms, the speaker laments his loneliness and sense of being an outcast from Israel and yearns for intimacy with God and restoration to his people. Solitude is not in itself a desirable state in the Hebrew Scriptures, although suffering the deprivation of human company sometimes helps a person to be more attentive to God.

In the New Testament the example of John the Baptist was frequently invoked by later Christian tradition as a precedent for ascetic practices and withdrawal from society. Jesus led an intensely social life, but on several occasions the gospels show him withdrawing from crowds and his disciples in order to pray. He also retires to give his disciples special teachings, telling them to “come away to a deserted place all by yourselves and rest a while” (Mark 6:31). Jesus seeks seclusion, but when crowds follow him, “he welcomed them, and spoke to them about the Kingdom of God, and healed those who needed to be cured” (Luke 9:11). Such passages suggest a repeated pattern in Jesus’s ministry of disengagement and return to society. Solitude is never presented as a requirement for disciples or a central religious activity, much less as a way of life. Like the prophets, Jesus understands religious life as necessarily involved with other people, especially those on society’s margins. Yet Jesus also resembles the prophets in his recourse to solitude in decisive moments such as his experience of temptations in the wilderness, the transfiguration scene, and the vigil at Gethsemane.

Although neither the gospels nor the epistles consider solitude as a Christian way of life, certain passages recommend solitude for a specific purpose. Jesus advises his disciples to pray alone to avoid hypocrisy: “Whenever you pray, go into your room and shut the door and pray to your Father in secret; and your Father who sees in secret will reward you” (Matthew 6:6). Jesus’s approval of Mary, who sat at his feet to listen while Martha labored (Luke 10:38–41), was taken by Christian tradition as justification of a life of contemplation. The writer of the book of Revelation is clearly alone when he receives a series of visions, and Paul may have passed a number of years in relative isolation between his conversion experience and the beginning of his preaching (Galatians 1:17–18).

In the first few centuries after Jesus's life, certain individuals sought solitude as they fled from persecution by Romans or other Christian factions. Such solitude was endured but not cultivated as a distinctive way of life. It was at the end of the third century in Egypt and Syria that solitude became a commitment and spiritual path for some Christians. It is significant that this occurred soon after Christianity was recognized as the official religion of the Roman Empire following the conversion of Constantine in the year 312. Solitude was a protest against the ease of living as a Christian in a society where this growing religion was not merely tolerated, but rapidly becoming a means to worldly success. One of the primary impulses behind the desire for solitude was the wish to withdraw from the temptations inherent in the late Roman Empire. The meaning of the word hermit (from the Greek *eremos*, desert) reflects the geographical location where solitude could best be found. Another term for the solitary, anchorite, is from the Greek verb *anachorein*, which originally meant to evade taxes or military service by fleeing to a remote area. The first Christian hermits fled the cities for desert wastes, hoping to recapture the spiritual commitment of the age of martyrs. They remembered the wilderness wanderings of Israel, the callings of the prophets, and the accounts of John the Baptist and Jesus in the wilderness. The desert was not a comfortable or safe place, not a pastoral retreat, but a place of harsh conditions where survival was difficult. Asceticism replaced martyrdom as the ultimate form of Christian commitment. The first solitaries practiced radical poverty and various forms of discipline, deprivation, and mortification of the body, and they usually understood aloneness as a form of asceticism.

The most influential early Christian hermit was Antony of Egypt, who is, ironically, also the founder of communal monasticism. Antony lived from approximately 250–356, spending most of his life as an ascetic in the Egyptian desert. His biography, written about 357 by Athanasius, established Antony as the model of poverty and asceticism. Antony lived alone in an empty tomb for about 15 years and then withdrew to greater isolation in an old fort on the east bank of the Nile, where he remained for 20 years. His fame attracted many disciples who demanded to join him. Antony gave advice to these followers and visited other hermits, and the loose community that developed around him is usually seen as the first Christian monastery. Their way of life combined the solitary path and communal living, with monks leaving their isolated cells for occasional common worship.

For a hermit such as Antony, solitude represented both an attempt to deny the self's needs in order to better hear God's voice and also an assertion of a personal destiny and identity. At the same time as hermits sought to transcend worldly cares through radical self-denial, solitary life afforded opportunities for individual achievement and heroic renown. Even if the religious truths the solitary realized were believed to be common to all humans, he or she came to these truths in a singular way. In their search for a personal religious path, the anchorites and recluses of the early Christian world wanted both to be grounded in a religious tradition and to search for spiritual insights growing out of individual character and experience.

Christian tradition contains many points of view on how to balance solitude with the claims of other people. Some advocates of solitude made extremely harsh judgments about social existence and justified total withdrawal. Other desert fathers spoke powerfully about the importance of human communion and fellowship in the spiritual life. Critics of solitude seized upon hermits' most antisocial statements as evidence of their inconsistency with basic tenets of Christian faith. From the early centuries until today, Christian opponents of solitude assert that since the essence of Christian life is love of the neighbor, a hermit turns his back on a crucial duty and joy of a life grounded in faith. Basil of Caesarea (329–379) was one of the most outspoken opponents of Christians living a solitary life. He made two criticisms of solitude that recur through the ages. A Christian needs other people to protect him from the dangers of pride and self-delusion by pointing out error. And the Christian life necessarily demands communion with and service of the neighbor, concrete opportunities to practice the law of love.

The mainstream of Christian tradition discerns a combination of benefits and dangers in solitude. The desert fathers soon discovered their need of each other for practical necessities and religious guidance. Colonies of hermits, sometimes called sketes or lauras, developed, where periods of solitude alternated with communal worship, conferences, and shared labor. In the evolution of Western monasticism, eremitical isolation became rarer. Most of the monastic tradition affirms cenobitical (communal) existence as normative while acknowledging solitude as a valuable although minor part of a Christian life. When cenobitical monasticism became the norm, the monk became the model not of solitary life but of the ideal of fellowship and communal religious living. In Saint Benedict's Rule, for instance, the common life is the normal one for monks, although Benedict grants the possibility of becoming a hermit after many years of formation by group discipline.

Erematical ideals have inspired certain monastic orders, such as the Carthusians, the Carmelites, the Hermits of Saint Augustine, and many smaller orders. These monastic foundations often began as small hermitages sited around a cloister or as clusters of hermits who met for common worship. But the tendency toward growth and greater organization always threatened the original purpose of silence and obscurity. The rumored holiness of a hermit or colony of hermits attracts followers and makes the solitary life harder to realize. Thus, a repeated pattern arises in the history of Christian monasticism whereby eremitical groups are absorbed into the church or establishment, producing a new incentive for hermits to disengage from increasing social complexity and conflict. The ideals of the solitary thus contribute to one of the ongoing rhythms of renewal in the life of the church.

Within eremitical monastic traditions, hermits were urged to identify with other persons and to be mindful of the whole church. Evagrius of Pontus (d. 399) formulated memorably the ideal of the hermit as being both "separated from all and united to all" (Ware, 1977, p. 30). Peter Damian, an eleventh-century Italian hermit who became a bishop, wrote a famous response to a hermit who asked him whether a priest celebrating Eucharist alone should include the customary

greeting "The Lord be with you." Peter held that a hermit must say these words not only because they are an established part of the liturgy but also because they express the reality that the hermit is always with others in spirit. The written and oral traditions with which spiritual directors guided Christian solitaries have offered frequent reminders that a hermit must remain in spiritual communion with other human beings even when not with them physically.

Communal forms of monasticism often integrate some of the concerns of hermits, for instance, through the practice of times of silence. Periods of silence, for instance, at meals, can integrate into the life of a group the solitary's wariness about gossip, distraction, and idle conversation. Later religious groups such as the Quakers have also found that collective silence can be a powerful religious occasion that combines aspects of solitary and communal experience.

The ideals and insights of solitude have influenced the institutions and corporate life of Christendom outside the monasteries, as hermits inspired and set an example for others. For instance, hermits taught the necessity of interior serenity and detachment for meditation and encounter with God. This is especially emphasized in Eastern Orthodox churches in the tradition of hesychasm, the cultivation of inner peace. Hermits are often keenly attuned to the natural world, to animals, plants, and weather patterns and their meanings. A solitary life has usually involved a great deal of manual labor and affirmation of its role in a balanced life. Hermits often advocate and praise the virtues of poverty and silently challenge other Christians to return to a simpler and more apostolic way of life. Since most hermits remained in one sheltered location, their sense of place and commitment to staying there were an important witness. In a society with increasing mobility and incessant restlessness, the hermit focuses on the movement and honing of the spirit. Since hermits usually lived in deserts or mountainous areas, they came to love the healing power of wilderness, with its silence, indifference, and harsh beauty (Lane, 1998).

Many of the Christian saints practiced solitude at critical moments or for long periods. Francis of Assisi (1182–1226) made solitary vigils and wrote a rule for hermits. Ignatius of Loyola spent most of a year (1522) in Manresa, Spain, in solitary prayer and fasting, emerging from this experience with inspiring visions and a set of guided spiritual exercises that others could systematically practice. His book, the *Spiritual exercises*, institutionalized the practice of making a spiritual retreat, a limited period of temporary isolation in order to withdraw from normal social interactions into silence, meditation, and prayer. This idea made a short period of solitude possible and desirable first for non-monastic priests and then for any Christian. This highly structured program authorized solitude as not a permanent occupation, but a regularly repeated experience that could be integrated into the life of any Christian.

Urban recluses in medieval Europe, usually called anchorites, walled themselves into small cells attached to a church. The fourteenth-century mystic Julian of Norwich, author of the celebrated work *Revelations* (or *Showings*) was one of at least 50 known recluses in that city. The choice of solitude was one of the few ways

that a woman in medieval Europe could have a significant degree of independence from male authority. A medieval urban recluse lived a very public sort of solitude, supposedly withdrawn from normal life but in fact constantly interacting with it. The goal of the solitary was to become “dead to the world,” and the ceremony for enclosing her in a cell resembled a burial service. Ashes were sprinkled over the cell, symbolically making it a grave. The locked door was sealed or bricked up so that there was no exit. Yet these enclosed women were deeply involved with those around them and conscious of their role as a model of piety. A glimpse into the meaning of this form of solitary life is provided by the *Ancrene Wisse*, a work of instruction written around 1215–1222 by an unknown English cleric for three young anchoresses (Georgianna, 1981). Their very public role is a fascinating example of how an individual’s commitment to aloneness may be spiritually significant for other people, providing a model of Christian conscience, repentance, and love for the world seen in the light of God’s love.

Protestants have usually disdained extended periods of solitude as a valuable spiritual practice, associating it with monasticism. Yet solitude has sometimes been appealing to Christians wanting to recreate the ideals of the early church, and it has often been necessary for those labeled heretics and forced to flee persecution. Enforced isolation has been the crucial setting for many prison writings by Christian dissenters, such as John Bunyan’s *Grace abounding to the chief of sinners*. Protestants have found solace in periods of aloneness used for Bible reading, prayer, and the examination of conscience. Jonathan Edwards practiced solitary reading and study, devotional seclusion, and mental imaging of the self before God, drawing on the piety and theology of his New England Puritan heritage (Gilpin, 2002).

In the twentieth century, no one has made so compelling a case for the religious value of a solitary life as the Trappist monk Thomas Merton (1915–1968). Interpretation and advocacy of solitude are a constant theme in his roughly 50 books, 300 essays, and thousands of poems, letters, and journal entries. In the Abbey of Gethsemani in Kentucky, Merton lived for many years a life combining silence and close communal dwelling. Merton spent many years seeking greater solitude but was told by his religious superiors and spiritual advisors that he should not need physical isolation if he could attain *inner* solitude, that is, detachment and serenity even in the midst of company. Finally, in 1965, Merton was granted permission to spend most of his time in a small hut near the monastery, living permanently as a hermit. Merton’s writing often defends the practice of solitude as the setting for a life of contemplation and prayer, yet he also examines his motivations, trying to discern whether his desire to be alone reflected egotistical striving or misanthropy.

Merton argued that solitude can express solidarity and love for others. For example, in “Notes for a philosophy of solitude,” Merton addresses the customary accusation that a hermit is being selfish when he abandons society. He writes of the Christian hermit’s specific contribution to monastic tradition and the Church and also of a solitary who “may well be a layman, and of the sort most remote from cloistered life, like Thoreau or Emily Dickinson” (Merton, 1960, p. 177). Merton

asserts that a hermit's distance from society allows him to criticize its myths and illusions. Therefore, his solitude has a prophetic character, providing a corrective to the social fictions that pervade any community. The hermit may quietly and humbly refuse to accept the myths and illusions of social life. Yet a hermit is not a prophet or a preacher, but rather a mute witness who should be critical first and foremost of himself. Solitude "is neither an argument, an accusation, a reproach or a sermon. It is simply itself. It is" (Merton, p. 184). While not wanting to make solitude simply a service to others, Merton affirms that other people may find something of value in the hermit's perspective. There is a basic tension in Merton's thought between his desire to defend solitude as an end in itself and his wish to discern its potential value for others.

For Merton, solitude is not only a spiritual practice but also a theological concept and a symbol of God. Society often rejects a hermit because he represents certain qualities of God: "For that is what the world resents about God: His utter otherness, His absolute incapacity to be absorbed into the context of worldly and practical slogans, His mysterious transcendence which places Him infinitely beyond the reach of catchwords, advertisements and politics" (Merton, 1960, p. 204). A hermit reminds others of both "the dreaded solitude of God" and God's compassion and love. The solitary, like God, has a mysterious communion with other people even when they are not aware of it. The emptiness, poverty, and suffering of the solitary life also link the Christian hermit with the kenotic or self-sacrificial aspect of Christ. Solitary life is an imitation of Christ. In these ways, Merton interpreted solitude in terms of central Christian theological concepts: God's transcendence and hidden love and Christ's suffering and self-emptying compassion.

Merton's final journey to Asia was motivated not only by his growing interest in Asian religions but also by his continuing search for a place of greater solitude than he could find at Gethsemane. In his Asian journal he repeatedly ponders whether he should establish a more secluded retreat in California, New Mexico, Alaska, or a place he hoped to discover in Asia. He sought out hermits and spiritual leaders, including the Dalai Lama, with whom he compared experiences of aloneness. The Tibetan teachers gave him advice that echoed his own belief that solitude should be balanced with concern for others: "For solitude, Alaska really seems the very best place. But everyone I have talked to says I must also consider others and keep open to them to some extent. The rimpoches all advise against absolute solitude and stress 'compassion.' They seem to agree that being in solitude much of the year and coming 'out' for a while would be a good solution" (Merton, 1975, p. 103). Merton was struck by the common Buddhist and Christian emphasis on links between solitude and compassion. A time of aloneness can free one from the demands of others and from one's egotistical striving to impress them and culminate in openness to others and compassion. But a hermit must be vigilant about the dangers of self-deception and self-righteousness. Thomas Merton never claimed to have solved the problems raised by solitude or that aloneness is a clearly superior spiritual path. In his lifelong struggle to understand and live a life of

solitude, he raised vital questions and took risks as he tried to reconcile conflicting values. He sought to combine aloneness with openness to other people and compassion for their suffering. Merton does not explain away the ethical and spiritual paradoxes of solitude but articulates them with unmatched clarity.

Solitude in the World's Religions

Solitude has been an important experience or stage of life in many of the world's religions, even as they have sought to define its role in religious life and its relation to community (see Colegate, 2000; France, 1996; and Lozano, 2005). Many of the founders and reformers of religious traditions, from Mohammed to the Lakota seer Black Elk, from the Jain saints Parshva and Mahavira to the nineteenth-century Hindu sage Ramakrishna, have come to their convictions and insights during periods when they withdrew from social contact. Yet almost inevitably, organized religious communities have been uneasy about independent hermits and sought to control or regulate their lives. This tension between the solitary visionary and the pressures for ethical and social conformity creates one of the ongoing dynamics of religious life.

In the Upanishads and earliest Sanskrit texts, solitude is praised as a form of ascetic renunciation that demonstrates spiritual commitment and is linked to the attainment of supernatural powers. The Laws of Manu regulate the lives of hermits, for instance, freeing them from paying ferry tolls and defining how much they should eat and the fines for secret conversations with others. Hindu tradition mapped the spiritual progress of a lifetime in four stages: student, father and householder, solitary forest dweller, and *sannyasin*, the itinerant beggar who has renounced earthly attachments. A withdrawal into solitude, usually justified at the point when a man's son had a son, was an essential step in this understanding of spiritual development. And the final stage suggests that one should live within society with the detachment one has learned as a hermit.

Living in this culture, Siddhartha Gautama began following this path yet transformed it. Disillusioned with his teachers, the young man practiced extreme asceticism and soon attracted a small band of followers. When he gave up strict practices, his disciples abandoned him. Alone, he reached enlightenment after a night sitting under a bodhi tree. Then the Buddha went forth to preach the understanding of suffering and liberation that he realized in that experience of clarity. He did not withdraw from others but founded a community. One of its central practices is meditation, which can be practiced alone or with others. Buddhist meditation is a state of temporary withdrawal from outward action and interaction with others, yet its insights are shaped by teachings, and they culminate in wisdom and compassion that should be expressed in relation to other people. As in other things, the Buddhist *middle way* tends to limit extreme commitments, including the practice of solitude (as we saw in the advice given to Thomas Merton).

At the same time, a Buddhist teacher would gently encourage a person immersed in a hectic social life to make room for the practice of meditation.

In contrast to Christianity and Buddhism, Islam lacks a monastic tradition that links solitude and celibacy. Life in the family is normative for Muslims, and eremitical life is usually seen as eccentric. An exception to this generalization is certain Sufis who wander through the world or become recluses to seek interior peace, detachment, and submission to Allah.

In Chinese Taoist traditions, according to Philip Koch, solitude is conceived of not as hermetic isolation, but rather as a form of *wu wei, inaction* or disengagement from striving and self-assertion (Koch, 1994, pp. 286–297). Many of China's great scholars and poets were exiles who fell out of favor with the emperor and used their isolated position to pursue esthetic avocations and to reflect on impermanence, the beauty of the natural world, and the corruption of society. Rejected by the emperor or renouncing a government position, one retired to a garden to write poetry, practice calligraphy and painting, and live as a literati, which was understood to be a religious role (Paper, 1999). Although Communist repression, especially during the Cultural Revolution, is often thought to have wiped out most of China's religious life, including its solitary seers, Bill Porter's *Road to heaven: Encounters with Chinese hermits* describes his 1980s journeys to meet with recluses surviving in caves and huts in mountainous areas.

Vision quests in Native American tribes were usually solitary, and aloneness was understood as part of an ordeal of suffering that enabled one to see supernatural powers at work in the world. The religious insights of healers and shamans were often the result of a solitary vigil. In Native American spirituality, as in all of the world's religions, a holy person's power was closely associated with his or her withdrawal from human society and proximity to the divine.

Paradoxically, a position outside normal social obligations and ties can become an established religious and social role. Peter Brown's study of holy persons during the late Roman Empire and early Byzantine period offers a lens for understanding the social significance of the solitary in other religious traditions, as well as fascination with hermits even in a secular society. In Palestine, Syria, and Asia Minor during late antiquity, the holy man's charisma and power was linked to his solitude. The ascetic mortifications of the holy man or woman may be understood as "a long-drawn-out, solemn ritual of dissociation" making the solitary a stranger and outsider to his/her society (Brown, 1982, p. 131). A position outside society allowed such a person to function as judge, intermediary, and spokesman for God. Symeon Stylites, who spent the last 37 years of his life on top of a pillar in Syria, is the most notable example of a widespread pattern. Living on top of a 60-foot column seems the epitome of withdrawal from society. Yet adoring crowds surrounded Symeon's pillar. This holy man adjudicated village quarrels, defended the economic interests of rural peasants, and advised powerful churchmen and political leaders, including the Emperor Theodosius II, who put up a ladder to consult with him. The holy person's detachment from society served a social need: "For the society around

him, the holy man is the one man who can stand outside the ties of family, and of economic interest; whose attitude to food itself rejected all the ties of solidarity to kin and village that, in the peasant societies of the Near East, had always been expressed by the gesture of eating. He was thought of as a man who owed nothing to society Perched on his column, nearer to the demons of the upper air than to human beings, Symeon was objectivity personified" (Brown, pp. 131–132). The holy man of late antiquity usurped the position of the oracle as "the bearer of objectivity in society," performing this role until they were eclipsed by new institutions that commanded respect and reverence: Benedictine monasteries, the ecclesiastical hierarchy, and the tombs of the saints.

The pattern that Brown traces suggests that we look for ways that solitaries have played an important role in other religious traditions. Solitude is a liminal (boundary or threshold) position on the edge of social positions defined by law, convention, and morality. Such a status is often threatening to established authority, for it calls into question its necessity. Yet solitaries are also honored because of their proximity to what transcends the limitations and definitions of human society: the holy.

In addition, the example of the ancient holy men alerts us to the great sociability that is encompassed by what particular cultures define as solitude: "The lonely cells of the recluses of Egypt have been revealed, by the archeologist, to have had well-furnished consulting rooms" (Brown, 1982, p. 134). Hermits often allow themselves a very active engagement with other persons. Such occasional interactions with other people are part of what different cultures value about aloneness. Thus, solitude is socially constructed, imagined by hermits and supported by others in the light of particular cultural and religious values.

Secular Solitaries as Spiritual Seekers

Solitude has been important in a variety of ways to modern individuals who have a negative, strained, or ambiguous relationship to a religious community yet consider themselves to be searching for religious or spiritual meaning. Among scholars of religion, the term *spiritual* is notoriously difficult to define. Within recognized religious traditions, it may refer to an intense inward focus on the life of prayer and vision and to the relative neglect of details of ordinary social life and be closely associated with mysticism. It is usually understood as the personal and individual aspects of religion, especially feelings of joy or serenity, appreciative awareness, openness to and acceptance of reality, a sense of life's goodness and unity, self-surrender, healing, and belief that one is in contact with the fundamental sources of life. Particular religious traditions shape the ways these experiences are understood. Yet, especially in the modern world, some individuals understand themselves as searching outside their formative tradition, or indeed any organized religious community, for God or whatever they believe to be worthy of ultimate loyalty and trust. Seeking becomes more important than finding, and *spiritual but not religious*

persons seem to share the view that every individual must find his or her own path, rather than proposing a single model of belief or affiliation for all. There is a natural affinity between this individualistic conception of spirituality and experiences of solitude that confirm unique or distinctive perceptions of ultimate reality.

In an interpretation of how autobiographers have presented the value of solitude in their own lives, I proposed five basic ways that writers have affirmed aloneness as a spiritual value (Barbour, 2004, pp. 129–159). One value sought in solitude is a sense of deeper connection with the natural world. For some people, solitude seems to be necessary to apprehend fully the beauty and power of the natural world. The Romantic poets perceived nature's spiritual meaning in solitary excursions, as when Wordsworth, in "I wandered lonely as a cloud," referred to "that inward eye / which is the bliss of solitude." Thoreau's *Walden* is the fountainhead of the American tradition of nature writing, which includes writers such as John Muir, Aldo Leopold, Annie Dillard, and Edward Abbey. These writers describe not only details of the natural world but the effect upon consciousness of periods of dwelling alone in their environment. Awareness of boundaries between oneself and the world can dissolve when one is lost in contemplation of flowing water, expansive prairie, or desert vista (see Korpela & Staats, Chapter 20, this volume). Such moments of identification, merging, or communion with the world are, at least for persons inclined to solitude, much more difficult to attain when they must attend to other people's reactions. One would never know from Annie Dillard's account of Tinker Creek that southwestern Virginia is a well-populated agricultural area or that her life was shared in any way with other human beings. She cultivates the role of solitary, saying that her ecstatic responses to nature's blood, guts, and beauty make her "no longer quite fit for company" (Dillard, 1974, p. 274). She places herself in the tradition of the fifth-century Egyptian desert hermits, quoting one who tells a disciple, "Go and sit in your cell, and your cell will teach you everything" (p. 264). Dillard doesn't sit in a cell, but near a particular stream, where she practices attentive and self-disciplined alertness, the stilling of the ego that makes possible moments of direct perception and a sense of unity or fusion with the world. For this kind of writer, representing many people who do not write personal memoirs, solitude in the natural world is the occasion and inspiration for a distinctive spiritual concern with attunement to the natural world.

A second form of solitude related to spirituality has its origin in periods of aloneness in response to loss, trauma, or suffering, when a person sequesters himself in order to heal physical or psychic wounds. Solitude is a part of the mourning process in certain religions and cultures. For secular individuals, too, coming to terms with bereavement may require not only the support of relatives and friends but immersion in the emotions of grief and sorrow and confrontation with the reality of loss, separation, and ending. Solitude offers retreat from the pressures of ordinary social engagement, a refuge or respite from interaction that allows healing powers within the self and in the natural environment to restore well-being. Works of autobiographical writing that portray solitude's healing powers include

Petrarch's *De Vita Solitaria*, Rousseau's *Reveries of the solitary walker*, Peter Matthiessen's *The snow leopard*, and May Sarton's *Journal of a solitude*. These authors portray the healing that they found in solitude as a crucial spiritual experience bringing discernment of a pattern and meaning in life, connection with ultimate powers, and a sense of being reintegrated into the cycles of nature. They may understand solitude's benevolent power in very different ways, as based on God's grace, the restorative influence of the natural world, or the mysterious recuperative capacities of the human psyche.

A third variety of solitude linked to spiritual meaning is solo adventure, for instance, travelers who have kayaked around Lake Superior, hiked through the Grand Canyon, sailed around the world, crossed the Sahara Desert, climbed a formidable mountain, wandered through a jungle, or survived on an open lifeboat. Unlike stay-at-home hermits, these adventurous wanderers search for a test that will bring out their resourcefulness and strength of character. Solo adventurers embrace the dangerous aspects of solitude along with other risky aspects of wilderness travel. The concentrated attention involved in taking calculated risks can be an exhilarating experience. Adventurers seek a demanding test to find out what sort of person they are, and what they learn in their journey seems to them of ultimate importance, the deepest truth they know. A sense of immense gratitude simply to be alive may flow from relief at having survived an ordeal. Two examples of the solitary adventure tale that dramatize spiritual insights like this are Joshua Slocum's *Sailing alone around the world* (1900) and Richard Byrd's *Alone* (1938). When Byrd is finally rescued from his polar ordeal after 204 days in a tiny shack buried under Antarctic ice and snow, he feels joy that can only be described by analogy to religious resurrection. The return of human company is a symbolic rebirth: "In that miraculous instant all the despair and suffering of June and July fell away, and I felt as if I had just been born again" (Byrd, 1995, p. 291).

A fourth spiritual meaning of aloneness is that, for certain individuals, solitude is necessary to do their creative work. Anthony Storr describes the importance of solitude for writers and thinkers including Descartes, Newton, Locke, Pascal, Spinoza, Kant, Leibniz, Schopenhauer, Nietzsche, Kierkegaard, Wittgenstein, Kafka, Trollope, Kipling, Henry James, Rilke, and Jung. Building on Donald Winnicott's work, Storr describes "the capacity to be alone" as a crucial basis of creativity: "The capacity to be alone thus becomes linked with self-discovery and self-realization; with becoming aware of one's deepest needs, feelings, and impulses" (Storr, 1988, p. 21). The imperative that some people feel to produce creative work is for them tantamount to a religious vocation or spiritual calling. The process of creating artistic or intellectual work, with its struggles, demands, and exhilaration, is for such persons a spiritual practice, a discipline of attention, focus, and self-transcendence in the service of a vision of truth and beauty.

A fifth linkage between solitude and modern spirituality is certain conceptions of self-formation. Some people understand solitude as a crucial condition for the formation of a distinct self, a coherent personal identity. Such individuals feel that

other people's demands, expectations, and constraints inhibit the discovery of their own deepest needs and desires. Lionel Trilling and Charles Taylor have discussed how the ideal of authenticity shapes the modern Western concept of identity. For Trilling, authenticity is an ideal of personal being that necessarily involves opposition to what is socially expected and approved. He links authenticity to Romantic ideals of subjectivity, feeling, and self-determining freedom. Being true to oneself seems to require rebellion, a break with conformity, and freedom from established moral standards: "Authenticity is implicitly a polemical concept, fulfilling its nature by dealing aggressively with received and habitual opinion" (Trilling, 1991, p. 94).

Similarly, Charles Taylor interprets authenticity in terms of the moral ideal of being true to oneself by turning inward rather than shaping one's life according to models from outside society. If one's truest self is neglected when one depends on others, then turning away from them and recovering contact with what Taylor calls "the sources of the self" within one is necessary for any person who desires to live an authentic life. In addition to authenticity, many related ideals in the modern, secular West, such as autonomy, inwardness, liberty of conscience, emotional expressivity, and self-reliance, suggest a crucial role for solitude in the formation of individual identity.

We can take Nietzsche as an extreme but illuminating representative of the myth or ideology of the solitary genius, the ideas that a worthwhile life is bound up with creativity and originality and that heroic creators stand apart from all influences or at least outgrow them. In *Ecce Homo*, Nietzsche calls what he considers his masterpiece, *Thus spoke Zarathustra*, "a dithyramb on solitude" (Nietzsche, 1969, p. 234). Like a Greek choric hymn, his work celebrates what he takes to be the source of life: solitude, the source of human creativity and the will to power. Nietzsche's loneliness and pride in his capacity to endure isolation emerge in his rapt descriptions of Zarathustra's lofty remoteness from others, including his disciples. For Nietzsche – and, I would argue, for many others who might disavow other aspects of his philosophy – solitude is necessary not only to work creatively but also to form an authentic self and to live a worthwhile life. Commitment to the task of self-formation is for many modern thinkers and artists the highest ethical and spiritual calling. The goal of choosing one's own values – alone, in rebellion against a morally bankrupt bourgeois society – has seemed to such people the highest ethical demand and the noblest spiritual path.

As another example of this tendency, consider Carl Jung, whose autobiographical *Memories, dreams, reflections* shows the crucial role of a period of solitude in the process of individuation in his life. After his break with Freud in 1913, Jung went through a period of disorientation that he said was close to a psychosis. For the next 8 years, he published very little, focusing on recording dreams, fantasies, and visions. He sequestered himself, cultivated childhood memories, and played with building blocks and stones. During this period of intense introspection, he gathered the psychological material on which he based his theory of the archetypes of the

collective unconscious. *Memories, dreams, reflections* describes not only the source of Jung's theories but, as he puts it in the Prologue, his personal myth. Central to Jung's personal myth is the image of himself as a solitary genius set apart from others. Comparing himself to his 12-year-old self, he says: "Today as then I am a solitary, because I know things and must hint at things which other people do not know, and usually do not even want to know" (Jung, 1965, p. 42). He presents the capacity for solitude as the key to both his original psychological ideas and his own individuation, his development into a unique self. I take Nietzsche and Jung as representative of many other secular seekers who describe withdrawal from involvement with others as enabling contact with deep sources of the self, life-enhancing dimensions of reality, and spiritual aspirations easily dissipated by normal social interactions.

Conclusions

Just as solitude has its biased detractors, some of its advocates, both religious and secular, are unbalanced in their refusal to consider how solitude can be integrated with social concerns. Wisdom about solitude involves understanding both the spiritual value of experiences of aloneness and the dangers when solitary pursuits are severed from the relationships, social activities, and contexts that give solitude much of its meaning and value.

Solitude helps certain people to understand and feel connected to the fundamental sources of meaning and value in their lives. Alone, they may better study ancient texts, examine conscience, discern God's will, create works of art or literature, appreciate the natural world, or forge a distinctive identity. Some people explicitly correlate their view of solitude with a conception of God and find a religious community that supports their aloneness, while secular solitaires do not link their ultimate values to the divine or an institutional tradition. The *spiritual but not religious* person usually seeks contact with transcendent meaning, but does not affiliate with a community, and often understands experiences of solitude as confirming his/her sense of estrangement or detachment from the official institutions of religion.

Sometimes aloneness is primarily an escape from the negative aspects of social existence: the boredom, conflict, or anxious striving to please that drain one's energy and spiritual vitality. More positively, solitude allows a person to focus on some dimension of reality that is better appreciated or engaged when one is not distracted by the need to attend to others. Thus, solitude can be both a retreat from unwanted social interactions and a commitment to positive values and dimensions of reality that are more fully experienced alone.

From some points of view, the very idea of spiritual or religious solitude is an oxymoron. If religion is understood as a matter of self-transcendence or commitment to a religious community, then aloneness seems the antithesis of genuine spiritual development. This perspective however fails to grasp how the

purpose of solitude is not necessarily attention to oneself. In solitude some persons practice a certain kind of attentiveness that they cannot achieve when distracted by the presence of other people. For these individuals, solitude is a necessary condition of meditative awareness or full concentration on something beyond the self that connects them with the world and often with what they believe to be sacred, divine, holy, or most valuable. Solitude at its best – when it realizes its fullest ethical and spiritual value – is not oriented toward escaping the world, but toward a different kind of participation in it, as made possible by disengagement from ordinary social interactions. Solitude is a return to the self, but it is not necessarily narcissistic; it may also be a return to what is most important in one's life and an encounter with sources of meaning and truth beyond oneself.

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Index

- Abbey, Edward 567
academic ability 274–5
acetaminophen 231
active isolation 151
active not-communicating mode 77
activity/passivity 20, 21
adolescence
 alone time during 171
 anxiety in 171
 aversion to aloneness in 161, 162
 developmental periods 168–9
 favorite places, restorative experiences
 and 355–6
 online identity and 320
 other-imposed solitude 8
 preference for solitude in 152–4
 social withdrawal and 7, 170–4
 see also college years
Adorno, Theodor 502
Adult Attachment Interview 433
adulthood
 favorite places, restorative experiences
 and 356–7
 frontal activation symmetry in 60–1
 peer rejection 137
 preference for solitude in 153
 rejection sensitivity in 141
 shyness in 59–60
social approach motivation in 215–16
social avoidance motivation in 215–16
 see also older people
affect, positive and negative 203
affective style 58
affinity for aloneness 153–4, 154–61, 162
 internalizing problems and 158–9
agency 8
aggression 14, 18
 in anxious solitary children 264–5
 displaced reactive 136
 interpersonal 135–7
 proactive 136
 reactive 136
aggressive maladjustment 19
aging in place 245, 246
agreeableness 185, 191, 379, 521, 531, 532
 in anxious solitary children 264
AIDS 324
alienation 228, 229
aliveness 76
aloneness 427, 433, 541
 in autism spectrum disorders 410–11
 of predependence 75
 as primary state 76
amae 449
ambient sociability 519, 534
ambivalences of solitude 539, 540–3

- ambulatory physiological assessment 386
 amygdala 58
 emotion processing 376
 memory impairment and 375
 primate social play and 473
 responses of behaviorally inhibited individuals and 212
 anaclitic depression 432
 anaclitic neediness 433
 anaclitic/relatedness line of personality development 431
 anchoresses 562
 anchorites 561
 angst 7
 anomie 483–91
 varieties of 484–5
 urban scenes of 487–91
 anonymity 94
 online 317–18, 323, 326, 328
 antecedent focused regulation 351
 anthropomorphism 92
 antisocial behavior 227
 Antony of Egypt 559
 anxiety 5, 7
 in adolescence 171
 attachment anxiety 35, 36, 37–8, 39–41
 cognitive models of 207
 rejection 143, 144
 separation 71–2
 see also social anxiety
 anxious attachment 377
 anxious solitary children at school 263–77
 classroom emotional climate 276
 as heterogeneous integrated systems 264
 individual-school environment relations 264–7
 past peer experiences and 266
 peer relations at school 267–72
 dyadic-level peer relations:
 friendship 270–2
 group-level peer relations 267–8
 school environment and 275–6
 school transitions 266–7
 sensitivity to school environments 265–6
 teacher relationships with 272–5
 anxious solitude 151, 173
 anxious-withdrawal 173
 appetitive system 203
 approach/withdrawal 20, 21
 approach-avoidance conflict 7, 114
 Arendt, Hannah 551
 artificial self 400
 artists, mental world of 104–5
 Asperger syndrome 409, 417
 assistive technologies 245
 attachment anxiety 35, 36, 37–8
 cortisol and 38
 loneliness and 39–41
 attachment behavioral system 34
 attachment figures 34
 attachment insecurities 37–9
 cognitive mechanisms of 41–5
 interpersonal goals 42
 loneliness and 39–41
 mental representations of others 43–4
 mental scripts 44–5
 self-representations 42–3
 attachment orientations/styles 35
 attachment-related avoidance 37–8
 attachment-system hyperactivating/deactivating 36
 attachment theory (Bowlby) 34–6, 138
 basic concepts 34–6
 hikikomori and 448–9
 interpersonal interactions and close relationships 37–9
 loneliness and 39–41
 attentional fatigue, restorative environments and 352
 attention-seeking behaviors 264, 265
 authentic solitude 90–1, 93
 authenticity 397–8, 569
 autism spectrum disorders (ASD) 409–18, 486, 487
 loneliness and 410–11
 loneliness in 411–12
 feelings of belonging and social connectedness 415–16
 friendships
 identification of friends 413
 quality 415
 reciprocity 415

- self-perceptions: meaning of friend and self as friend 414
understanding and self-perceptions of 412–14
hikikomori and 451
influence of self-perceptions on peers 417
views of peers and social networks 416–17
- autistic-contiguous position 75
autistic shell 75
autoeroticism 72, 73
autonomy 18
avatars 323, 520
aversion to aloneness 161, 162
aversive systems 203
avoidant attachment 35, 37, 38, 42, 43, 377, 378
loneliness and 39–41
avoidant behavior 18
avoidant personality disorder (APD) 435, 438–9
awakening 75
awareness 337
of isolation 75
of separateness 75
- baby boomers 243, 251–2
non-married 253
bachelor economy 493–4
Barbary macaque (*Macaca sylvanus*), play in 464
Baudrillard, Jean 502
behavioral activation (BAS) 55–6, 203
behavioral inhibition (BIS) 55–6, 203
behavioral spirituality 153
being, solitary 542, 543, 545
being alone 541
being-with-an-other 83
belonging 17
belonging uncertainty 296
belongingess 284, 383
assessment 289–91
definition 283
emotional experience 289
hypothesized causes 289
loneliness differentiated from 287–8
benefits of solitude 5–6, 91
benign aloneness 81
Bentham, Jeremy 492
bereavement 324, 567
bereavement support group, online 324
Berger, Peter L. 501–2
Berkman-Syme (1979) index 250
Berkman-Syme Network Scale 246
Big Five personality traits 37, 185, 521–2
in gaming 530–1
biological maturation 169
biopsychosocial model of disease 336
blaming 399
blogs 323, 517, 530, 534
bohemians 488
bonobos (*Pan paniscus*), play in 466, 470–1, 473
borderline personality disorder (BPD) 162, 429, 432–5, 436, 439
boredom, Internet use and 327
boundarylessness 75
bounded sense of self 80
brain, neurological structure 63–4
see also amygdala
brain-behavior relations 52
Buddhist meditation 336, 341, 344, 564–5
bulimia nervosa 433
bullying 134, 137, 412, 416, 452
Bunyan, John 562
Butler, Judith 554
Byrd, Richard 568
- Camus, Albert 545
cancer 324
capacity for solitude 93
capacity to be alone 78–80, 80–1, 162, 429–31, 568
Capacity to Be Alone Scale (CBAS) 439
Carmichael's Manual 16
categorical imperative 541
Center for Epidemiological Studies – Depression Scale (CES-D) 159
cerebral asymmetry 203
challenge seeking 216
charity girls 488, 489
chat, online 323
Cheek and Buss shyness and sociability scales 59

- Chicago School sociologists 487–8, 489, 491, 492
Child Social Preference Questionnaire (CSPQ) 152, 161
Child Social Preference Scale (CSPS) 151
child x environment models of development 266
children/childhood
 damage caused during 4–5
 developmental timing 7–8
 favorite places, restorative experiences and 355–6
 neglect by peers 21, 24
 private spaces 354–5
 rejected 21
 whole child 19
Children's Social Preference Scale (CSPS-R) 157–8
Children's Solitude Scale 156
China
 Cultural Revolution 565
 eremitism 102, 103, 106
 experiences 95–9
 introversion in 190
 language of solitude 95
 nonsocial play in 121–2
 vs American experiences 99–100
choice, solitude as 90, 92
Christianity, solitude in 557–64
civic participation, decline in 517–18
Class play (Bower) 19
cognition, adolescence and 169
cognitive behavioral therapy in seasonal affective disorder (SAD) 62
cognitive discrepancy model of loneliness 410
cognitive evaluation 203
cognitive structure of solitude 101–2
cohousing 310
collective solitude 533
college years, loneliness and belongingness in 283–97
emerging research 297–8
relationship process 291–4
social-cognitive processes 294–6
communication technologies 245
communism 20
community gardens 338
complex ego function 74
compliant self 77
Composite International Diagnostic Interview (CIDI) 456
Comte, Auguste 501
concentration-related activities, solitude and 233
conflict 18
 approach-avoidance 7
 intergroup 5
constructed reality 344
consummatory pleasure 374
contact-shunning individuals 437
contemplation 6
contemplation, solitary 336, 338, 349
contemporary communities 348
continuity of being 76
continuity of social relations 243
continuous partial attention 533
core relatedness 83
core self 42, 83
cortisol
 attachment anxiety and 38
 reticent behavior and 114
costs of solitude 7
costs vs benefits of solitude 4–5
counter-dispositional behavior 196
creativity 6, 82, 102, 153, 232
cues signaling rejection 295
cults 231
cultural resource, solitude as 105–6
cultural zeitgeist 22
culture-bound syndrome 449
cultures, introversion and 190
cyberostracism 225
daily diary entries 385
Dalai Lama 563
dating, attachment insecurities and 37, 38
decentering 343
Deep Ecology Movement 106
defensive splitting 434–5
defensive stance, solitude as 85
dependent personality disorder (DPD) 432
depression 58, 153, 228, 229
 in adolescence 171

- belonginess and 283
 in BPD 433
 Internet use and 320
 introjective (guilt-ridden) 432
 social anxiety and 393
 solitary confinement 230
- Descartes, René 568
 designer environments 92, 100–1
 desire for closeness (DPD) 432, 436, 438–9
 developmental lines of personality 431–2
 developmental timing 7–8
dharma 341
 diabetes 324
 Diagnostic Statistical Manual of Mental Disorders 440
 DSM-I 5
 DSM-IV-TR 429, 440
 DSM-5 429
- Dickinson, Emily 6
 diffusion tensor imaging 63
 digital technologies 494–5
 Dillard, Annie 567
 dimensions of solitude 95–9
 dining alone 306–8
 disabilities
 Internet use and 318
 in older people 242, 245, 247, 249, 250
 see also autism spectrum disorders (ASD)
- discrepancy-enlarging system 203
 discrepancy-reducing system 203
 disengagement 243
 disgust 57
 displaced reactive aggression 136
 disuse atrophy 342
 divorce 249, 305
 dopamine
 dysregulation 376
 happiness and 194
 dorsal anterior cingulate cortex (dACC),
 ostracism and 225
 drowning out response 376
 dual unity 75
 Dungeons and Dragons 523
 Durkheim, Emile 484–5, 486, 501, 550–1
 Dutch Narcissism Scale 155, 159
 dwelling-house (rooming-house)
 man 488, 489
- dyadic relationships, in adolescence 171–2
 dyadic withdrawal 305
- eating disorders 229
 ecotherapy 348
 Edwards, Jonathan 562
 EEG alpha asymmetry, regional 57–8
 behavioral activation 60
 behavioral inhibition 60
 in shyness 59
 in social anxiety 59–60
- ego 73, 74
 ego cast 359
 ego depletion 359
 ego relatedness 80, 81
 electroencepholgray (EEG) 51
 email 319
 emerging adulthood theory 169–70
 social withdrawal and 174–9
- Emerson, Ralph Waldo 338, 344
 Emotional Creativity Inventory 101
 emotional distancing 399
 emotional loneliness 410
 emotional memory impairments 374–5
 emotional paradox 374
 emotional refinement 95, 102
 emotional self-renewal 153
 emotional solitude 233, 391–401
 empty nest 242
 enlightenment 99, 100
 episodic memory 83
 epistemology 500
 eremitism 102, 103, 106
 Erikson, Erik 448
 essential loneliness 75
 esteem 285
 eudaimonic approach 187
 EverQuest 518, 523, 534
 evocative constancy 430
 evoked companion 83
 excitation-inhibition and mobility 55
 excommunication 224
 exile, political 224
 existential damages 494
 existential empowerment 505
 existential sociology 499–514
 existentialization 513

- expectations of acceptance 216
- experience of the unexpected hypothesis, headshaking during play 472
- experience-sampling methodology (ESM) 382, 385
- Experiences in Close Relationships (ECR) scale 36
- exploration in animals 465
- externalizing behaviors 264, 265
- extraversion 203, 55
- extraversion measures, bias toward happiness 189–90
- extraverted happiness 187
- Eysenck Personality Inventory 189
- Eysenck Personality Questionnaire (EPQ) 189, 190
- Facebook 317, 330, 340, 484, 517, 518, 529
- factor analysis 19–20, 27, 94, 101, 185, 530
 - confirmatory 99
 - exploratory 98
- false self 77, 542
- family bonds 244
- fantasy world, online 323
- fascism 20
- favorite place studies 352
 - adults 356–7
 - children and adolescents 355–6
- fear 7, 57
 - of molestation 358
 - of separation 72
 - of solitude 71–2
- fearful avoidance 36
- feeling shape 78
- felt security 35, 398
- fight–flight–freeze 55–6
- Five-Factor Model 379
- fMRI 63
 - shyness and 56
 - in social anhedonia 379
- forebrain 58
- fort-da 78–9
- Foucault, Michel 492, 502, 544
- Francis of Assissi 561
- Frankfurt School 502
- Franzen, Jonathan 549–50, 551
- free schools 455
- free word-recall task 207
- freedom factor 99, 100
- freeter 453
- Freud, Sigmund 540
- friendship 270–2
 - autism and 412–15
 - on Facebook 317, 330
 - formation 271–2
 - introversion and 191–2
 - quality 271
 - quantity and stability 270–1
 - same-sex 172, 173
 - social anxiety and 393–4, 395
- Fromm, Erich 502
- frontal activation asymmetry
 - in adults 60–1
 - in children 58–60
- frontal EEG asymmetry
 - in infant temperament 211–12
 - social approach and avoidance motivation and 211
- frustration–aggression hypothesis 136
- Gage, Phineas 7
- Garbo, Greta 232
- Geladas (*Theropithecus gelada*), play in 465
- General Belongingness Scale 290
- German Pietists 347
- getting away 336, 337
- going inwardly 336
- going-on-being 75–7
- good-enough facilitating environment 6
- good-enough mother 76
- GPS monitoring 386
- group-level peer relations 267–8
 - mistreatment and 268, 269–70
 - peer difficulties and their emergence 267–8
 - temporal patterns of peer exclusion 268–9
- group membership
 - definition 131
 - foundation and effects of 131–2
- group, role in social development 16–18
- groupthink 105
- guilds
 - raiding 533
 - social networks in 526–8

- habituation 465
 Hall, Stuart 502
 happiness 57
 introversion and 187–9
 harassment 416
 Harmonist labyrinths 338
 Harmonists 347
 harmony 95
 Health and Retirement Survey (US) 247,
 248, 250, 325
 hearing impairment, Internet and 325
 hedonic balance 187
 helplessness 72, 229
 hermitage 95, 103, 140, 150
 hermits 234, 487, 559–63, 564, 565–6
 hierarchical linear regression 63
 hikikomori 445–57
 clinical features 450–1
 known psychiatric disorders and 451
 phenomenology 450
 conceptual model 448
 definition 445, 446–7
 family history and dynamics 452–3
 future directions 455–6
 history of 446
 research criteria 447
 risk factors 452
 social context 453–4
 epidemiology 453–4
 international perspectives 454
 theoretical underpinnings 448–9
 treatment and recovery 454–5
 Hinduism 564
 history, research 16–30
 1940s and 1950s 16–18
 1950s and 1960s 19–22
 1960s and 1970s 22–6
 1980s and 1990s 26–9
 laboratory –based studies 22–3
 naturalistic observation 24–5
 histrionic individuals 429
 histrionic personality disorder
 (HPD) 432, 447
 hobos 488
 holy men 486, 565–6
 home maintenance products and
 services 245
 homebound people 247
 homophobia 326
 homosexuals 328
 Horáková, Milada 508–10, 513
 Horkheimer, Max 502
 hostage-being 553
 human development, model of
 (Erikson) 448
 id 73
 ideal world 104
 identity
 deficits in 428–9
 development 153, 170, 175, 179, 363,
 396, 449, 494
 online 319, 323, 326
 personal 559, 568
 place 351
 self- 354, 356, 432
 social 136, 286, 295–6
 Western concept of 569
 idiom 75
 Ignatius of Loyola 561
 Illinois Loneliness and Social
 Dissatisfaction Questionnaire
 (ILSDQ) 289
 imaginary companions 83–4
 immature misdirection of signals
 hypothesis, headshaking during
 play 472
 inability to be alone 162
 incarceration 224
 incest 540
 inclusionary needs 228
 incommunicado element 76
 Indian ‘caste society’ 486
 individuation 18
 initial dualism 77
 inner-directed solitude 94, 99
 inner peace 94
 institutionalization of personality 215
 integrated involvement provisions 286
 intellectualization 432
 interest 57
 intergenerational relationships 245, 252
 intergroup conflict 5
 internal working models 376–7

- International personality item pool 522
 Internet Usage Survey 319
 Internet use, loneliness and 317–30
 accessibility 319
 addiction 318, 319, 326–7
 control of physical appearance 318
 control over interactions 319
 enjoyment 319
 extroversion vs introversion 321–4, 327
 finding like-minded others 319
 impact of 517–18
 impact on loneliness 319–21
 in older adults 325–6
 online anonymity 317–18, 323, 326, 328
 physical disabilities and psychological disorders 324–5
 psychological properties 318
 stigmatized minority groups 326
 transfer to offline 328–9
 interpersonal theories 168
 intersubjectivity 77, 78
 intimacy 94, 99
 intolerance of aloneness 162
 introjective (guilt-ridden) depression 432
 introjective / self-definition line of
 personality development 431
 introversion
 friendships and 191–2
 happiness and 187–92
 introversion-extraversion 184–7
 prediction of happiness 192–5
 Islam 565
- James, Henry 568
 Japanese macaque (*Macaca fuscata*) 469
 joy 57
 Julian of Norwich 561
 Jung, Carl 568, 569–70
 Juvenile Protective Association 487
- Kafka, Franz 568
 Kant, Immanuel 541, 568
 katalepsis 544
 Keats, John 503, 505
 Kierkegaard, Soren 568
 Kipling, Rudyard 568
- Koestler, Arthur 507–8, 509, 513
 Ku Klux Klan 227
- labyrinths 338, 347, 349, 540
 Laing, R.D. 542
 language, self and 78
 Laws of Manu 564
 learned helplessness 228–9
Left-Handed (movie) 445, 450, 455
 Leibniz 568
 leisure activities 6
 Leopold, Aldo 567
 Levinas, Emmanuel 553
 Lévi-Strauss, Claude 486
 Lewin, K. 16–18
 libido 73
 life course perspective on health 243
 life space 16–17
 living alone 244–5, 492–3
 Living in Community Network 310
 Locke, John 568
 locomotor-rotational (LR) play,
 animal 468–9
 loneliness 5, 7, 8, 90, 91, 94, 231, 243, 244
 adolescence, social anxiety and 395–6
 assessment 288–9
 attachment insecurities and 39–45
 autism and 410–12
 definition 39, 283
 differentiation from
 belongingness 287–8
 Internet use and 317–30
 need and 286–7
 in older people 246–54
 Loneliness and Aloneness Scale for Children and Adolescents (LACAS) 154, 155, 156, 159
 loneliness factor 99
 Loneliness Rating Scale 412
 long-term potentiation (LTP) 375
 longing, painful 72
 Louvain Loneliness and Aloneness Scale for Children and Adolescents 289
 Lubben Social Network Scale 246, 456
 Luckmann, Thomas 501–2

- maladaptive attribution 208
 maladjustment 23
 Marcuse, Herbert 502
 Márquez, Gabriel García 540
 marriage, vulnerability to loneliness and 311
 Martineau, Harriet 501
 Marx, Karl 501, 502
 Maslow, Abraham 285
 masquerading 412
 mass cultures 549
 massively multiplayer online games (MMOGs) 518, 519, 529
 data collection in 520–1
 participants 521–2
 character profiles from the Armory 522
 in-game census data 522
 survey data 521–2
 as third place 532
 see also World of Warcraft (WoW)
 matrimania 302
 Matthiessen, Peter 568
 meaninglessness 229
 mechanisms of solitude 6–7
 mendicant 486
 mental fatigue 359, 361
 mental representations
 personality pathology and 431–5
 as related to solitude 429–31
 merger-hungry individuals 437
 Merleau-Ponty, M 485, 495
 Merton, Thomas 6, 541, 562–4
 mindfulness
 manifestations of solitude and 337–40
 stress reduction and 340–4
 mindfulness-based stress reduction (MBSR) 335–7, 338, 340–4
 mindfulness meditation 335–49
 Mini-International Neuropsychiatric Interview (MINI) 456
 mirror-hungry individuals 437
 mirror relation 73
 mirroring 431
 Mitchell, J.V. 19–20, 21
 moments of merger 75
 monasticism 106, 560–1
 Montaigne, Michel de 5–6, 539
 Monte Carlo simulation 531
 moral behavior 19
 motor training hypothesis 467
 mourning, pain of 72
 Muir, John 567
 multiple sclerosis 324
 Multi-User Dungeons (MUDs) 518
 narcissistic individuals 429
 narcissism 432
 narcissistic personality disorder (NPD) 435, 436–7
 National Health and Social Life Survey 247
 Native American spirituality 565
 nature, restorative qualities of 351–63
 near-withdrawal state 82
 necessity of being alone 80–1
 need to belong 5
 social anhedonia and 372–3
 needs 285–6
 loneliness and 286–7
 social 7–8
 ‘NEET’ 453
 negative affect 203
 negative consequences 4
 negative event induced solitude 233
 negative feedback loop in socially withdrawn children 172
 Negishi, Kenta 445
 NEO Personality Inventory-Revised 189, 190
 neoliberal solitude 491–4
 network analysis 27–9
 neuroticism 55, 185, 192, 203
 New Start 455
 Newton, Sir Isaac 503, 568
 Nietzsche, Friedrich 505–7, 509, 510, 513, 540, 568, 569, 570
 noncommunicating modes 77
 noncommunicating self 75–7
 nonsocial play 111–23
 concepts and theories 112–13
 cultural differences 121–2
 developmental differences 119–20
 gender differences 120–1

- normal autistic phase 75
 nostalgia 41, 102
 notice 21
 novelty, responsiveness to 20
- object relating 80, 81
 Object Relations Inventory (ORI) 430, 433
 object relations model 84, 86
 object-seeking 73
 object use 81
 objective social isolation 244
 objectively perceived object 76
 obsessive-compulsive personality disorders 432
 obsessive-compulsive use of Internet 321
 oceanic feeling 80
 older people, social isolation among 242–54
 definitions 245–7
 estimates of 247
 future research 252–4
 impact on health and well-being 250–1
 internet use and 325–6
 lack of community engagement 253
 lower-income 253
 non-married baby boomers 253
 older caregivers 253
 population trends 244–5
 risk factors 248–50
 social networks 253
 women 252–3
 oneness experiences 79–80
 online dating 325–6
 online gaming communities 518
 online support groups 325, 329
 ontogenetic ritualization 471
 ontological security 542
 organic solidarity 484
 ostracism 224–34
 chronic ostracism and resignation 229–31
 animal model 229
 interventions 231–2
 defensive 232
 effects of 224–5
 functions of 224
 overview 225–6
 physical 225, 229
 punitive 230
 ritualized 224
 self-ostracism/being alone 232–4
 social 225
 in social animals 224
 temporal model of (Williams) 226–9
 reflective stage 226, 227–8
 reflexive stage 226–7
 resignation stage 226, 228–9
 other-imposed solitude 8
 other-sex friendships 173–4
 outer-directed solitude 94, 99
 outside society 500–2
 outsider status 17
 over-anticipation of rejection 232
 overprotectiveness 449
 Oxford-Liverpool Inventory of Feelings and Experiences 378
 oxytocin 231, 376, 456
- pain as risk factor 249–50
 painful incoherence 432
 PANAS 188
 panic/agoraphobia, 171
 paranoid personality disorder (PPD) 432, 438
 parasocial relationships 231, 234
 parent-child attachments 273
 parent-child indulgence 449
 Parkinson disease 324
 Pascal 568
 Peekaboo game 475
 peer assessment measures of withdrawal 19–20, 30
 peer dislike index 132, 133
 peer exclusion 171, 267
 peer group rejection in childhood 129–44
 effects 132–4
 future research 143–4
 intergroup prejudice 137–8
 interpersonal aggression and 135–7
 occasional, and its effects 134–5
 reasons for, and effects 138–40
 solitude and 143
 Peer Network and Dyadic Loneliness Scale 289

- Peer nomination inventory* (Wiggins and Winder) 19
- peer nomination studies 413
- peer perception 21
- peer rejection 7, 171
in adults 137
- peer victimization 7, 171, 267
and social anxiety 393, 394
temporal patterns 268–9
- perceived cohesion 290
- Perceived Cohesion Instrument 290
- perceived social isolation 244, 247
- personal isolation 75
- personality disorder 5, 427–40
- personality
institutionalization of 215
personality disorders and 428–9
- personality theory (Eysenck) 55
- Peter Damian 560–1
- Petrarch 568
- physical appearance, control of, on Internet 318
- physical disabilities, Internet use 324–5
- physical health, isolation and 5
- physical isolation 339
- Piagetian theory 22
- play 82–3
definition 463
physical environment and 117
see also play, in animals; play, solitary
- play, in animals 463–76
dyadic 464
object 466–7
polyadic 464
rough and tumble (R&T) 476
- social play in adults primates 473–5
- social play, humans vs chimpanzees 475–6
- solitary-locomotor-rotational (SLR) 465
- solitary object
social locomotor-rotational play 468–70
- social play in bonobos 470–1
- stone handling as 467–8
- solitary play, playful facial expressions during 471–3
- play, solitary 25, 26, 111–23
underlying motives 150–2
- playing alone 111–23
- pleasure principle 79
- poor get richer theory 322, 323
- population trends 244–5
- positive affect 203
- positive withdrawal 490
- potential space 82–3
- Potter, Beatrix 6
- power/provocation needs 228
- prayer 6, 338, 561, 562, 566
- preference for solitude 151, 152, 153, 162
- Preference for Solitude Scale (PSS) 152–3, 158, 159
- prefrontal cortex 58
- preverbal senses of self 77
- primary aloneness 75–7
- primary maternal preoccupation 80
- primary narcissism 72–3
- primary object love 73
- privacy 6, 7, 10, 44, 78, 85, 106
during adolescence 150, 156, 169, 171
enjoyment of 153
Internet use 325
older adults 245
restoration and 351–2, 354–5
- Privacy Preference Scale (PPS) 159, 160
- Privacy Questionnaire (PQ) 159
- private space, in childhood 354–5
- proactive aggression 136
- problem-solving, solitude as 94
- projection 432
- prosocial behavior 227, 228
- pseudo-solitude 90, 91, 102, 543
of modern democratic life 547–9
of pseudo-public sphere 549–52
of Stoic self-control 544–5
of teenage vampiredom 545–7
- psychological disorders, Internet use and 324–5
- psychological intimacy 286
- psychological sense of community 287
- Psychological Sense of School Membership Scale 290
- psychological solitude 345
- psychoneurotic disorder 5

- psychosomatic entity 76
 psychotic disorder 5
 punishment 3
 punitive individualism 492, 493
Pupil evaluation inventory (Pekarik et al) 19, 25
 put-downs 399
- Quakers 561
 quality of life 246
- race-based rejection sensitivity 295
 raiding guilds 533
 rapid fight-flight script 45
 Rapp, George 347
 rationalization 432
 reaction formation 432
 reactive aggression 136
 reactive not-communicating mode 77
 recall bias 186
 reflective solitude 349
 rejection anxiety 143, 144
 rejection sensitivity (RS) 42, 130, 138–40,
 204, 232, 295
 in adolescents 141
 in adults 141
 children and 140–2
 relatedness 287
 relational ambivalence 43–4
 relational strategies 400
 relative autism 75
 religion 501, 557–71
 religious experiences 6
 religious/spiritual beliefs 231
 rental sisters/rental brothers 455
 representations of interactions that have
 been generalized (RIGs) 83
 residential communities 245
 resilience 216
 social withdrawal and 30
 restoration, nature and 351–63
 restorative experiences
 company of intimates 358–60
 individual and small group
 studies 352–4
 known and unknown in leisure
 setting 361–2
- presence of unknown others 360–1
 social context 357–8
 reticent behavior 113–15, 118
 retirement 242
 retreats 354
 Revised Social Anhedonia Scale
 (RSAS) 378, 379, 380, 381, 384
Revised class play (Masten et al) 19, 26
 reward sensitivity 193–4
 rich get richer theory 322
 Rilke, Rainer Maria 568
 Robbers Cave experiment 5
 robotic companionship 492
 romantic relationships 37, 174, 175, 178–9,
 205–6, 397–8, 434
 avoidance of 437
 in college years 285, 291
 effect of friend's 305
 Internet and 326
 introversion and 191
 Rousseau, Jean Jacques 503–4, 509, 510, 568
 Russian Roulette 227
- sadness 57
 safety-seeking behaviors (SSBs) 399–401
 SAHAR website 325
 Saint Benedict's Rule 560
 Saito, Tamaki 446
 same-sex friendships 172, 173
 sangha 337, 341
 Sarton, May 568
 schema-of-being-with-the-self 77–8
 schizoid personality disorder (SPD) 371,
 372, 435, 437–8
 schizophrenia 5, 58, 153, 371, 372, 373–7,
 384, 489
 right frontal EEG alpha activity 62
 Schizotypal Personality Questionnaire 377
 schizotypy 371, 372, 373–7
 school(s)
 anxious solitude at 263–77
 avoidance 395
 free (Japan) 455
 inclusion of children with ASD
 and 415–16
 peer relations at 267–72

- dyadic-level 270–2
 group-level 267–8
 refusal 446, 452
 social anxiety and 393, 395
- Schopenhauer, Arnold 568
- seasonal affective disorder 62
- second shift 509
- secondary narcissism 73
- secure-base script 45
- Self, Will 505
- self as multifaceted paradox 85–6
- self-actualization 285
- self-concept 131
- self-consciousness 169
 Internet use and 327
- self-control 19
- Self-Determination Theory (SDT) 161
- self-disclosure 217, 286, 397
 partner responsiveness to 398
- self-discovery 6, 94
- self-esteem 37, 228
- self-esteem, friend numbers on Facebook
 and 330
 privacy and 354
- self-exploration 102
- self-formation 568–9
- self-identity, privacy and 354
- self-in-the presence-of-the-other 77
- self-investment 493
- self-isolation 250
- self-perceived dehumanization 225
- self-realization 6
- self-regulation 216
- self-regulatory function 74
- self-reports of solitude 186
- self-representations, attachment and 42–3
- self-transcendence 95, 99
- self-worth 131
- Seneca 544
- Sense of Belonging Instrument 290
- sentinel script 45
- separation anxiety 71–2
- separation-individuation theory 75
- sexuality, emerging adulthood and 175–6
- Shaker communities 338, 345–6
- shared loneliness 81
- shared playing 82
- Shelley, Percy Bysshe 503
- shut-in-personality 5, 372
- shyness 7, 23, 51–64, 151, 173
 approach-avoidance framework 53–5
 definition 53
 frontal EEG asymmetry and 55–9
 as motivational approach-avoidance
 conflict 204
- shyness-sensitivity 173
- Siddhartha Gautama 564
- silent treatment 225, 229
- Simmel, Georg 483–4, 485
- single people 302–14
 community living and 309–10
 demographics 304
 demographics 308–9
 dining solo 306–8
 economics 309
 experience of spending time
 alone 312–13
 social inclusion/exclusion of 304–6
- sleep 283
- Slocum, Joshua 568
- smart phone technology 386
- Sociability Scale (SS) 439
- social acceptability 19
- social anhedonia 160, 371–86
 affective regulation deficit 376
 assessment in daily life 381–4
 attachment theory 376–7
 cross-sectional assessment 378–80
 definition 371
 emotional memory impairments 374–5
 historical roots 372
 longitudinal studies 380–1
 measurement 377–8
 need to belong and 372–3
 normal individual differences vs clinical
 characteristics 384
 in real-world contexts 385–6
 schema of low pleasure beliefs 375
 in social and personality research 384–5
 social withdrawal and 373–4
 socio-emotional processing deficits 376
 theories of origins 373–7

- Social Anhedonia Scale 377
 social anxiety disorder (SAD; social phobia) 7, 58, 371, 391–401
 in adolescence 392–3, 395
 in adults 397–401
 relational behaviors 397–9
 safety-seeking and relationships 399–401
 in childhood 393–5
 definition 391
 Internet use and 327
 social approach and avoidance motivation, interplay of 210–11
 social approach motivation 7, 202, 203–10
 across lifespan 211–16, 216–18
 behavioral processes 209–10
 biological substrates 211–12
 cognitive processes 207–9
 social stimuli 207–8
 social success and failure 208
 developmental instability
 in adolescence and young adulthood 214–15
 in childhood 213–14
 in middle adulthood and old age 215–16
 emotional processes 210
 environmental influences 212–13
 historical roots of research 204–5
 quality of maternal care and 212–13
 social relationships as function of 205–6
 social avoidance motivation 7, 202, 203–10, 264
 across lifespan 211–16, 216–28
 behavioral processes 209–10
 biological substrates 211–12
 cognitive processes 207–9
 social stimuli 207–8
 social success and failure 208
 developmental instability
 in adolescence and young adulthood 214–15
 in childhood 213–14
 in middle adulthood and old age 215–16
 emotional processes 210
 environmental influences 212–13
- historical roots of research 204–5
 quality of maternal care and 212–13
 social relationships as function of 205–6
 social belongingness 17
 social capital 287, 492
 social-cognitive loneliness 410
 social-cognitive preemptive strike 296
 social-cognitive theory 138, 168
 social connectedness measures 253
 social constructionism 501, 502
 social defeat 490
 social development 18
 social disconnectedness 247
 social disinterest 151
 social engagement 243
 social exclusion, definition 225
 social goals 17
 social impact 21
 social integration 286, 287
 social isolation 5, 6, 14, 15, 18, 19
 social learning theory 22, 168
 social life 487
 social locomotor-rotational (SLR) play, animal 468–9
 social network analysis 27–9, 30
 social networking 320, 322, 323, 330, 340, 484, 517, 518, 533
 in guilds 526–8
 ostracism and 231–2
 social phobia 171
 social preference 21
 social reactivity view 194
 social rejection 115, 225
 social relationships in adolescence 169
 social snacking 385
 social solitude 485, 496
 social-structural conflicts 488
 social support 243
 social symbiosis 75
 social withdrawal 6, 14, 15, 81, 151, 446
 articulation of 26–7
 during adolescence/emerging adulthood 167–79
 neurosis 446
 research history of 16–30
 stimulus barrier and 74
 see also hikikomori

- socio-solitude 502–5
 sociodramatic play 117
 socioemotional selectivity theory
 (Carstensen) 243, 244, 246
 sociography 17
 sociometry 17, 20–1, 24–5, 27, 30
 sociotropism 153
 Sociotropy Autonomy Scale (SAS) 155
 solitary-active behaviors 115–17, 118, 120,
 121, 122
 Solitary Comfort Scale 158, 159, 160
 solitary confinement 3, 230–1, 543
 solitary construction 117
 solitary coping 160
 Solitary Coping Scale 158, 159
 solitary-dramatic behavior (solitary
 pretend) 115, 117
 solitary-functional behavior 115, 116
 solitary-passive behaviors 117–19, 120, 122
 solitary play 25, 26, 111–23
 underlying motives 150–2
 solitary self 72–8
 solitropic orientation 7
 solitude as multifaceted paradox 85–6
 solitude imposed by power 491
 Solitude Scale for Adolescents (SSA) 159, 160
 solo adventure 568
 soloability in games 523, 524
 sophisticated aloneness 80
 specific phobia 171
 spectator experience 528–9
 spider monkeys (*Ateles geoffroyi*) 472
 spillover effect 435
 Spinoza 568
 spirituality 94, 95, 99, 566–7, 570
 splitting, defensive 434–5
 spontaneous gesture 76
 spotlight effect 308
 Starbucks phenomenon 533
 Starr Report 549–50
 startle reflex 207
 status 21
 stigma 231
 stimulus barrier 74
 stimulus hunger 74
 stimulus infatuation 74
 Stoics 544–5
 stone handling, animal, as solitary object
 play 467–8
 stories of solitude 92–4
 stress, restorative environments and 352
 stress reduction, mindfulness and 340–4
 structural equation modeling (SEM) 63, 398
 Structured Clinical Interview for DSM-IV
 Disorders (SCID) 456
 student apathy syndrome 446
 subjective object 76
 substance abuse
 shyness and 54
 social anxiety and 393
 suicidal ideation 229
 belonginess and 283
 online support groups 325
 suicide attempts 229
 social anxiety and 393
 solitary confinement and 230
 surrender and catch 500, 510–13
 symbolic relationships 231
 Symeon Stylites 565–6
 tablet technology 386
taikyaku shinkeishou 446
 Taoism 102, 103, 105, 106, 565
 Tarde, Gabriel 501
 teacher appraisals 273–5
 academic ability 274–5
 social adjustment 274
 teacher-child relationships 272–3
 tension, in peer groups 26
 Theodosius II, Emperor 565
 third place 533
 Thoreau, Henry David 338, 344–5, 504,
 509, 510, 567
 time out 3, 224, 355
 Tocqueville, Alexis de 547–9, 551
 tool use, animal 466–7
 toys as person-thing 83
 transactional model of stress 341
 transcendentalism 344–5
 transcranial magnetic stimulation 63
 transitional objects 82–3
 transitional phenomena 82–3
 transvaluation of values 505
 trauma, as breach in stimulus barrier 74

- Trollope, Anthony 568
Trust (film) 544–5
 trust in intimate relationships 398
 Twitter 340
 types of solitude 94, 96–7
- Übermensch* 505
 UCLA Loneliness Scale (UCLA-LS) 40, 159, 247, 248, 289, 433, 439, 456
 Ultima Online 518
 undifferentiatedness 75
 unsociability 151, 152, 160
 non-pathological 154–5
 unworthiness 229
 urban solitude 483–96
- vicarious solitude 104–5
 violence, hikikimori and 450
 virtual communities 517
 visual impairment, Internet use and 325
 voluntary isolation 73
- wait and hover approach 24
 Web 2.0 systems 517
 Weber, Max 501, 502
 whistling past the graveyard hypothesis,
 headshaking during play 472
 widowhood 242, 245, 249, 305
 loneliness and 311
 Wikipedia 323
 wikis 517
 Williams, Raymond 485
- Winnicott, Donald W. 6, 542, 548–9, 568
 Wisconsin Card Sorting Test (WCST) 379
 withdrawal *see* social withdrawal
 Wittgenstein, Ludwig 568
 Wolff, Kurt 510–13
 word fragmentation task 207
 word-recognition task 207
 Wordsworth, William 503, 505, 567
 work, emerging adulthood and 178–9
 World Internet Project (WIP) 320
 World of Warcraft (WoW) 518, 519–20,
 533–4
 Big Five personality factors in 530–2
 extraversion 530, 531, 532
 agreeableness 530, 531
 conscientiousness 530, 531
 openness to experience 530, 531–2
 emotional stability 530, 532
 data collection in 520–1
 participants 521–2
 character profiles from the
 Armory 522
 in-game census data 522
 survey data 521–2
 sociability in 522–5, 529–30
 social networks in guilds 526–8
 spectator experience 528–9
 worthlessness, feelings of 229
- yoga 342–3
- zones of social abandonment 491