CHAPTER SIX

Ostracism: A Temporal Need-Threat Model

Kipling D. Williams

Contents

Department of Psychological Sciences, Purdue University, West Lafayette, Indiana, USA

Advances in Experimental Social Psychology, Volume 41
ISSN 0065-2601, DOI: 10.1016/S0065-2601(08)00406-1

Abstract

The phenomenon of ostracism has received considerable empirical attention in the last 15 years, in part because of a revitalized interest in the importance of belonging for human social behavior. I present a temporal model that describes and predicts processes and responses at three stages of reactions to ostracism: (a) reflexive, (b) reflective, and (c) resignation. The reflexive pain response triggers threats to four fundamental needs and directs the individual's attention to reflect on the meaning and importance of the ostracism episode, leading to coping responses that serve to fortify the threatened need(s). Persistent exposure to ostracism over time depletes the resources necessary to motivate the individual to fortify threatened needs, thus leading eventually to resignation, alienation, helplessness, and depression. I conclude with a call for more research, especially on the effects of ostracism on groups, and on possible buffering mechanisms that reduce the long-term negative consequences of ostracism.

1. Introduction

> I'm not afraid of death but I am afraid of dying. Pain can be alleviated by morphine but the pain of social ostracism cannot be taken away.
>
> Derek Jarman, British Film Director (b. 1942)

Ostracism—excluding and ignoring by individuals or groups—appears to occur among all social animals (e.g., lions, buffalo, primates, even bees), and across history in humans, either in primitive tribal groups or modern sophisticated societies. People are ostracized formally within their religions, societies, and institutions (Williams, 2001, 2007a). Individuals are ostracized in close interpersonal friendships and relationships, in the common dyadic tactic called the silent treatment (Sommer et al., 2001; Williams et al., 1998; Zadro et al., 2008a). Despite its prevalence, ostracism is a phenomenon few social psychologists examined before the 1990s. In 1986, Gruter and Masters edited a special issue of *Ethology and Sociobiology* that stemmed from a conference that included "biologists, lawyers, and social scientists for the purpose of taking a fresh and realistic look at the subject of ostracism" (1986, p. iii). In that issue, the editors and authors argued that ostracism evolved as an adaptive behavior that served to strengthen and protect the group from burdensome members. They reported its prevalence among social animals including humans, and documented behavioral, physiological, and neurological correlates of ostracism in a variety of social species. Interestingly, no experimental social psychologists participated in the conference.

Ostracism was regarded as both vitally important and intriguing to many writers. Ralph Ellison wrote in his novel, *Invisible Man* (1952), of his protagonist's exploitation of being invisible as a function of the Black man's ostracism in a white culture. Franz Kafka's sketch entitled, *Gemeinschaft*, immersed us in the absurd predicament of five men excluding a sixth for no apparent reason (even to themselves) other than he was not one of the five (reprinted in Rehbinder, 1986). Joel Chandler Harris (1948) as Uncle Remus, wrote of the frustration, then aggression, resulting from Brer Rabbit's encounter with the Tar Baby, who of course (because he was made of tar), made no response to Brer Rabbit's friendly initiations or his subsequently more urgent entreaties. John Steinbeck (1945/1987) wrote, in *Cannery Row*,

> Socially, Mack and the boys were beyond the pale. Sam Malloy didn't speak to them as they went by the boiler. They drew into themselves and no one could foresee how they would come out of the cloud. For there are two possible reactions to social ostracism – either a man emerges determined to be better, purer, and kindlier or he goes bad, challenges the world and does even worse things. This last is by far the commonest reaction to stigma. (pp. 250–251).

Indeed, as early as 1890, William James wrote, when defining the social self,

> A man's Social Self is the recognition which he gets from his mates. We are not only gregarious animals, liking to be in sight of our fellows, but we have an innate propensity to get ourselves noticed, and noticed favorably, by our kind. No more fiendish punishment could be devised, were such a thing physically possible, than that one should be turned loose in society and remain absolutely unnoticed by all the members thereof. If no one turned round when we entered, answered when we spoke, or minded what we did, but if every person we met "cut us dead," and acted as if we were nonexisting things, a kind of rage and impotent despair would ere long well up in us, from which the cruelest bodily tortures would be a relief; for these would make us feel that, however bad might be our plight, we had not sunk to such a depth as to be unworthy of attention at all.
>
> (James, 1890, p. 293–294).

It is not that social psychologists felt that ostracism, or the potential of ostracism, was unimportant to their understanding of human social behavior. Indeed, reading between the lines of many classic theories and studies in social psychology, it is relatively easy to spot the omnipresence of the fear of ostracism. Schachter (1951) documented that during group discussions, opinion deviates were first subjected to a barrage of persuasive attempts, and if unmoved, were condemned to expulsion from the group. Why do we conform if not to prevent rejection and exclusion by others? Why do we comply with requests that we would not ordinarily consider on our own? Why do we obey others even when asked to engage in behaviors that go

against our own values? What keeps us from responding to an emergency? What motivates us to change our attitudes when subjected to persuasive attempts by others? Certainly other factors beyond the fear of ostracism contribute to and intensify these effects, but it appears to be at the very core of many of these effects. Sherif (1966), as though directed by Ellison's observation, understood an implication of ostracism (i.e., being invisible) when he chose to dress as a custodian during the Robber's Cave experiment. By doing so, he knew that the children would regard him, because of his role status, as unworthy of attention and would not censor themselves in his presence, allowing him to observe directly what they were doing and saying. Social psychologists understood, at least implicitly, that the fear of ostracism was a social glue that motivated individuals to be responsive to social norms.

There were also a few isolated (yet, quite clever) studies published in social psychology on rejection and being ignored, although these studies seemed to have had negligible influence on the field. These include groundbreaking studies by Craighead et al. (1979), Dittes (1959), Fenigstein (1979), Jackson and Saltzstein (1957), Geller et al. (1974), and Snoek (1962). The findings of these studies illustrated that being ignored or rejected was an unpleasant experience that caused the ostracized individual to dislike the ostracizers. Snoek in particular provided some initial evidence that ostracized individuals might be motivated to seek out assurance from others and that they might, through attributional work, reduce the consequential impact of ostracism. I could add to this list my lone attempt in the 1980s to examine the impact of ostracism on the desire to be alone, remain in the same group, or join a new group (Predmore & Williams, 1986). All of these studies represented interesting beginnings with no follow through.

Zeitgeist for ostracism, social exclusion, and rejection. It was not until the mid-1990s that a consensus of interest on ostracism and related topics (e.g., rejection, exclusion) began. Not coincidentally, this was the same time that the very influential article, *The Need to Belong,* was published by Baumeister and Leary (1995). In this article, the authors spoke persuasively that belonging was a need; that without a connection with at least a few important others, individuals suffered physically and psychologically. Combined with Leary and his colleagues' work on sociometer theory that redefined self-esteem as a mechanism by which one assessed one's inclusionary status (Leary et al., 1995; and later, Leary et al., 1998), there emerged a *Zeitgeist* for research on ostracism. Today, social psychology no longer ignores ignoring or excludes exclusion. Already, there are several books (Leary, 2001; Williams, 2001; Williams et al., 2005), an *Annual Review* article (Williams, 2007a), a soon-to-be-published meta-analysis on the topic (Gerber & Wheeler, in press) and theoretical extensions to other domains (e.g., discrimination, stigmatization) derived from work on social exclusion (Kerr & Levine, 2008; Smart Richman & Leary, 2009). Additionally, new theory and research on *social pain* is directly derived from research on ostracism and related concepts (Chen et al., 2008;

Eisenberger & Lieberman, 2004, 2005; MacDonald & Jensen-Campbell, in press; MacDonald & Leary, 2005).

1.1. Overview

In this chapter, I will put forth a new temporal model of ostracism's effects on individuals, and review the pertinent empirical literature as it relates to the model. This model is based on a model I put forth in 1997 (Williams, 1997), but has undergone significant change that is responsive to subsequent studies and data. As the comparative literature suggested, there appears to be strong converging evidence that the act of ostracism is an evolutionarily adaptive group behavior. For animals lower on the phylogenetic scale, a hard-wired response to ostracize burdensome, dangerous, unpredictable members of the group ensures the groups strength and survival. The impact on the ostracized animal, unfortunately, was certain death. Left without means for reciprocation of comfort, security, food, shelter, and protection, that individual was easy prey for predators. Thus, tendencies to ostracize burdensome members were selected for, making this strategy common across all social animals.

Detection of ostracism co-evolved in individuals to facilitate avoidance of likely death. As such, ostracism and its detection are embedded in our social fabric and permeate our perceptions, feelings, thoughts, and behaviors. I propose a model of ostracism that incorporates ostracism detection, a reflexive pain signal, threatened fundamental needs, reflexive coping responses that serve to fortify the threatened need(s), and cognitive, affective, and behavioral responses. I will also use qualitative data based on interviews and anecdotes to speak to the long-term effects of ostracism on the individual, arguing that the capacity to cope and fortify needs diminishes over time, leaving the perpetually ostracized individual resigned, helpless, alienated, and depressed. I will summarize the research from my and others' laboratories that provide support or counter-evidence to the model, and will then discuss gaps in the research that still need to be addressed.

2. Ostracism is Detected Quickly and Crudely

As can be seen from a depiction of my new model (modified from Williams, 1997) of ostracism in Fig. 6.1, the first step in the ostracism process is that the individual detects ostracism. I use the term detect to distance it from some elaborate cognitive process. Based on an evolutionary perspective, I believe that early detection of ostracism is adaptive; it allows the individual to either correct his or her behavior or to search for alternative groups before the isolating and harmful effects of ostracism take over. First, to detect quickly we would expect to see experimental evidence in

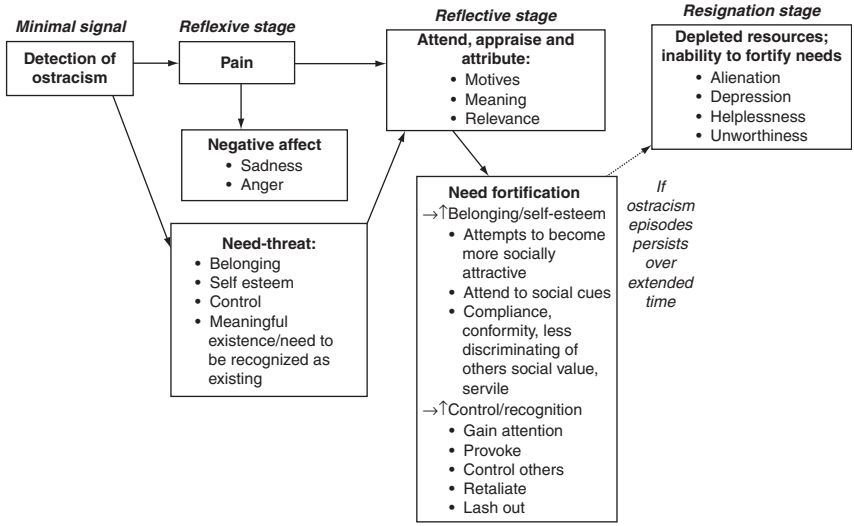

Figure 6.1 New model of ostracism.

which individuals are quick to detect the most rudimentary forms of ostracism. Second, over-detection of ostracism is likely. That is, there ought to be an over-detection bias, perceiving ostracism when it is not actually occurring, because the cost of a false alarm is lower than the cost of a miss. This is consistent with error management theory (Haselton & Buss, 2000; Haselton & Nettle, 2006), which argues that evolutionarily adaptive responses often are geared toward biased detection that least threatens the survival of the individual. Thus, we should be able to document that the detection (and associated pain, as I will discuss next) is rapid and occurs even when, logically and rationally, it should not. Finally, this quick and crude assumption, if not done deliberatively and thoughtfully, should be something that signals the individual in such a way that will direct his or her attention to the possible ostracism episode for further analysis and consideration. This signal, I (and others) argue, is pain. The pain, detected at least in the dorsal anterior cingulate cortex (dACC), serves to focus and direct the individual's attention to the source and meaning of the ostracism, so that the individual can determine if the ostracism is potentially threatening and important. Thus, the pain triggers attention and subsequent appraisal.

2.1. Detecting ostracism requires only the slightest representation of ostracism

There are many paradigms to study ostracism, rejection, and exclusion. These include some very blatant manipulations such as those used by Gaertner et al.. (2008), Twenge et al. (2001, 2003), and Leary and

colleagues (2006; Nezlek et al., 1997). Gaertner and Iuzinni use a group situation in which one participant is called out in a loud and vicious manner by the others in the group (all confederates) as someone they do not want to have in their group. Twenge, Baumeister, and colleagues give participants a battery of personality tests accompanied by accurate feedback of their level of extraversion, along with bogus feedback that, in the case of exclusion, informs participant that they will be alone without any solid relationships by the time they reach the age of 25. Leary informs participants, after they engaged in a brief get-acquainted session with other members of a newly formed group, that no one else wanted to work with them in the subsequent task. All of these paradigms are interesting and useful in the understanding of how people cope with rejection and exclusion, but they offer little information for ostracism detection. What is needed to examine ostracism detection are paradigms that are subtle, distal, and ambiguous. If such manipulations have similar effects to the more blatant ones, we can conclude that detection is quick, if not crude.

Sitting in a waiting room with two other ostensible participants, a ball toss game emerges. The group is minimal. They do not know each other and have no group task assigned to them. They do not converse. Their only connection is an implied consensus to toss a ball between them. After the actual participants receive the ball a few times, they never get it again. The other two continue to play, looking only at each other. Note there is no explicit rejection, no explicit declaration of not liking or not wanting to include the participant. Things are a bit ambiguous, but what is not ambiguous is that no matter what, the participant is not thrown the ball any more. This paradigm, used by Williams and Sommer (1997; also Warburton et al., 2006; Williams et al., 2002) and depicted in Fig. 6.2, results in strong detection (effect size between 1.0 and 2.0) of being ignored and excluded, along with negative affect and perceptions of need threat (to be discussed in Sect. 3). The same pattern can be observed in conversation paradigms (from unpublished honors theses, reported in Williams, 2001; Zadro et al., 2004; see Fig. 6.2) in which, for no apparent reason (or with a

Figure 6.2 Ball toss paradigm (left) and Train Ride conversation paradigm (right).

reason), during a group discussion two of the participants suddenly begin talking only to each other and do not make any eye or verbal contact with the participant. Ostracism is detected strongly, and without regard to whether or not the participant is in agreement or disagreement with the others, or if the others begin talking about something completely off-topic. Likewise, strong detection emerges in chat room paradigms, regardless of topic or level of agreement with the others (Williams et al., 2002), and in cell phone texting (also known as SMS), when the interaction of the two others is not seen nor heard, nor does it matter if the participant is an in- or outgroup member of the other two texters. Thus, from these paradigms, we can conclude that declarations of rejection and expulsion are not necessary to detect ostracism. Further, it is not necessary to see or hear directly active inclusion taking place among the others in the group. Finally, attributions that ought to assist the detection of ostracism (like disagreeing with the others, being in an outgroup) have no impact on the detection.

All of the preceding paradigms do involve verbal or nonverbal interactions with others. What if we were to begin stripping away these opportunities? Are they necessary for the detection of ostracism? Apparently not. Along with Chris Cheung and Wilma Choi, I developed Cyberball (Williams et al., 2000; Williams & Jarvis, 2006), a virtual ball toss paradigm in which participants, alone with their computers, are led to believe they are playing an incidental game of virtual ball toss as a means to exercise their mental visualization abilities. They are told quite explicitly that the game itself is not important, but rather, they are to use the game to engage their visualizations: what do the others look like, where are they? What is the temperature and weather, if outdoors? What does the geography look like? And on and on. They have not met the others, nor do they expect to meet them. They see animated icons on a screen, depicting the ball tosses (see Fig. 6.3).

In this paradigm, exclusion and ignoring are more distal than in face-to-face paradigms, or in paradigms that permit verbal or nonverbal interaction. Perhaps most importantly, participants are protected from the others by being in a room, alone with the computer. Nevertheless, this paradigm

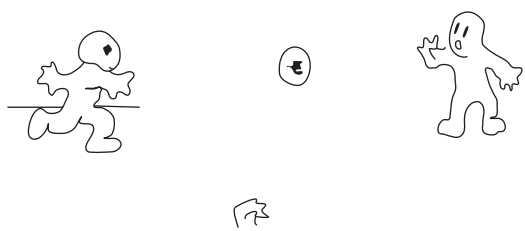

Figure 6.3 A depiction of 3-person Cyberball (participant is represented by the hand figure at the bottom).

yields effect sizes for detection, need threat, and mood impairment similar to that found in the face-to-face ball-tossing paradigm (effect sizes typically above 1.0). Despite believing that the game is irrelevant except to exercise their mental visualization abilities, being left out of a ball toss game represented by animated icons is detected easily and is quite upsetting.

To push the envelope further, Zadro et al. (2004) led half their participants to believe they were playing with other humans, whereas the other half were simply told they were playing with computer generated characters and that there were no others involved in the game. Regardless of whether they were led to believe they were playing with humans or a computer, their detection of ostracism was just as strong, their needs were just as threatened, and their moods just as bad.

Similar detection of being excluded and ignored occurs when participants are led to believe that receiving the ball costs them money (so, being ostracized yields the participant more cash to take with them from the experiment; van Beest & Williams, 2006) or when the virtual players are tossing around a bomb rather than a ball (van Beest, et al., 2008).

One interesting aspect of this research is that even when eye-contact is not possible, (as in chat rooms, cell phone texting, and Cyberball), the manipulations still evoke strong detection of being ignored. Early research by Williams et al. (1998) indicated that the most prominent behavior that signaled ostracism and the silent treatment was lack of eye contact. Apparently, perception of ignoring is more than simply not being looked at or spoken to.

Tracking people's feelings, a proxy for detection, across time in Cyberball allows us to see how quickly ostracism is detected. Participants are trained to dial their feelings second-by-second by being exposed to various mood-inducing photographs. Once trained so they can dial while engaging in another task (in this case, Cyberball), participants show that within 20 s of not receiving the ball, their mood begins to drop precipitously (see Fig. 6.4).

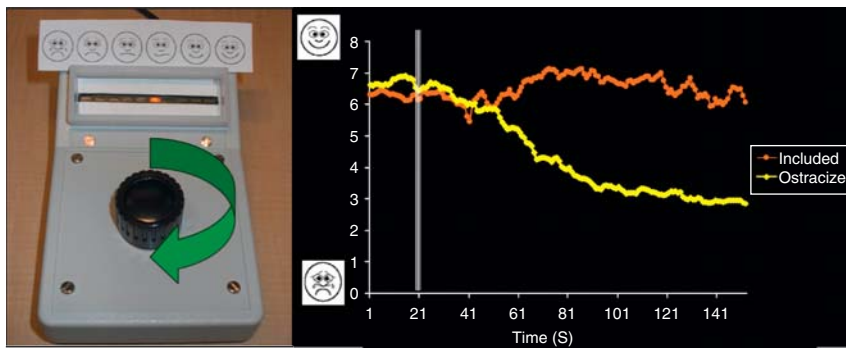

Figure 6.4 The feelings dial (left) and the speed of detecting ostracism in the Cyberball paradigm (right).

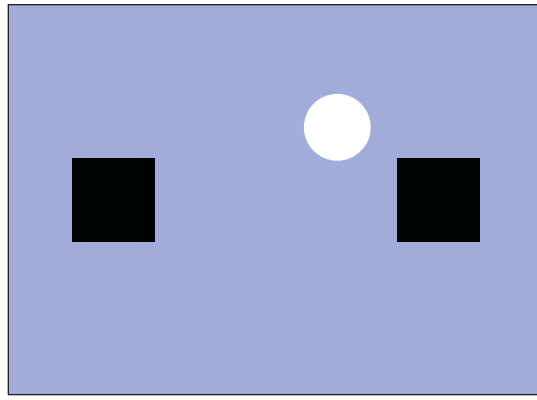

Figure 6.5 Graphic depiction of "minimal world," sufficient to cause detection of ostracism if participants are encouraged to generate a story describing what they see.

More recently, and as yet unpublished, Alvin Law and I have minimized the ball-tossing paradigm further in search for the minimal conditions necessary to detect ostracism. In one paradigm, we simply tell participants to watch a computer monitor that will show some animation, and when the sphere increases in size, they are to press the "a" key or the "l" key (with no further instructions as to what those keys mean). What they see, depicted in Fig. 6.5, is two square shapes side by side, and a sphere that moves between them or that moves to the center and increases in size. When asked to watch, press keys when necessary, and develop a story that can describe what they are seeing, they report being excluded and ignored, along with negative consequences to needs and mood. The stories that are generated almost always include other people or other animals. Of note is that if participants are not encouraged to generate a story, they report no exclusion or ignoring. Thus, it appears that the stimuli alone are not sufficient to engender feelings of ostracism, but rather it is necessary for individuals to have some general representation that involve others having agency.

Finally, a new paradigm just developed by Jim Wirth and colleagues involves having a participant look at a computer screen (Wirth et al., 2008). They see a human face in which the eyes change direction from looking forward, to looking to the right or left (depicted in Fig. 6.6). Asked to imagine having a conversation with this person, detection of being excluded and ignored directly maps onto the proportion of time the eyes look forward; the more the eyes look away, the more the participant detects (and feels the effects of) ostracism.

The net result of these more subtle paradigms is an accumulation of converging evidence that ostracism in minimal forms is detected strongly and quickly. At least within 20 s of its onset in a minimized version of real-world ostracism, individuals detect its presence and respond negatively.

Figure 6.6 Eye-gaze paradigm.

2.2. Over-detection of ostracism is likely

As Haselton and Buss argue, evolutionarily adaptive responses often involve an error bias that is self-serving. In the case of detecting ostracism, it would be less harmful to detect ostracism when it was not occurring (a false alarm) than to not detect ostracism when it was occurring (a miss). Missing the cues for ostracism, for many social animals, would mean a certain death. For humans, it means expulsion from individuals and groups who are potentially important and nurturing, leading to psychological and physical impairment (Baumeister & Leary, 1995). As I have already alluded, individuals are quick to detect ostracism even in its most minimal forms. As shown in several of the studies mentioned, rational or logical characteristics of the ostracism episode do not appear to moderate the detection (or pain, as discussed below) of ostracism. This implies that factors that ought to indicate the experience is not a meaningful episode of ostracism are ignored or not processed, leading to false alarm errors. Thus, individuals detect and are negatively affected by ostracism by computers (Zadro et al., 2004), ostracism by outgroup members as much as ingroup members—even when those outgroup members are despised members of the KKK (Gonsalkorale & Williams, 2007), not getting the ball when it actually improves one's monetary situation (van Beest & Williams, 2006), and *not* being thrown a virtual bomb that can detonate at any time (akin to not being asked to join in on a game of Russian Roulette!).

Another study showed that even when individuals were told in advance that the other players could not yet throw them the ball because the participant's computer was not yet hooked up to the network, they nevertheless showed signs of detection and displeasure (Eisenberger et al., 2003). Recently, we found that simply watching another person who was ostracized in a game of Cyberball was enough to trigger detection and negative self-feelings in the participant (Bagg, 2008; see also Coyne et al., 2008). Finally, whereas a great deal of previous research documents that sharing the impact with co-targets is sufficient to reduce or diffuse the impact (Latané,

1981), recent work indicates that sharing the ostracism with another co-player does not reduce the negative impact of ostracism (Schefske, 2008).

As a whole, these studies indicate that factors that ordinarily (and logically) ought to reduce the negative impact of aversive situations are apparently overlooked or underprocessed when it comes to ostracism. If we can generalize this to real-world events, this would suggest an over-detection and over-reaction to events that appear to be ostracism, but are not. Of course, this error management pattern is adaptive in that, as stated earlier, it is better to detect first, and ask questions later. The effort needed to engage in attributional work that can ultimately assist in discounting an apparent ostracism episode is negligible compared to the effort needed to cope with unanticipated ostracism and its negative consequences.

2.3. Ostracism signals pain

The final argument for the initial reflexive response to ostracism is that, from an evolutionary standpoint, something that threatens survival ought to send a strong signal such that the individual can attend to the episode that precipitated the signal and respond. Pain can trigger an immediate response. It can serve to orient the individual's attention to the ostracism episode for further appraisal. The appraisal can tell the individual whether the episode is meaningful or not, and if so, whether other mitigating factors should be taken into account so that proper action, and not an over-reaction, can occur.

Measures of pain by self-reports. We have assessed pain in various ways, mostly using self-report measures that indicate distress, threatened fundamental needs, and worsened moods. These latter constructs are discussed more fully in Sect. 3. More recently, we have provided a pain slide to participants to indicate the level of pain they are currently experiencing, or we give them a question that more directly asks how much pain they are feeling. Although only one study has been published using the pain slide as it pertained to past and current feelings when recalling betrayal (Chen et al., 2008), a subset of those betrayals that were independently assessed as episodes of ostracism indicated high levels of pain associated with these ostracism events (as reported feeling during the event, and again, while recalling it). Our findings regarding the pain slide as currently used indicate a high correlation between the pain slide and the other distress indicators, supporting our view that these self-reports are a reasonable proxy for pain assessment.

Detect first—ask questions later. Using these self-report measures of pain, we find that there are strong (again, effect sizes often over 1.0) painful responses reported during the experience of ostracism, as manipulated by Cyberball, ball-tossing, conversations, chat rooms, and cell phone texting. We find no systematic differences between paradigms. It should be noted

that we typically ask participants to report on their experience during the social interaction. It is this retrospective index of distress or pain that proves to be exceptionally impervious to other situational factors and to individual differences. If ostracism is so threatening that an ostracism-detection system evolved that worked quickly and relatively automatically, then it makes sense that the alarm should go off with clarity and strength, regardless of outside factors and dispositional characteristics of the individual. Consistent with the ''detect first—ask questions later'' system, the pain gets the attention of the individual so that further reflection and appraisal can take place.

Measures of activation of the dACC as a proxy for pain. Using the Cyberball paradigm in a within-S design while participants lay prone in an MRI chamber, Eisenberger et al. (2003) assessed pain through specific brain region activation using fMRI technology. They also used retrospective self-report measures of distress. When participants first arrived, they were told they would be engaging in a mental visualization task and their brains would be monitored to see what happened during visualizations. The task was Cyberball and was presented with the usual instructions. There were several stages during the experiment, including baseline, inclusion, exclusion because the computer was not yet hooked up with the other players' computers, and ostracism. Following the fMRI monitoring, the participants filled out a questionnaire asking them about their experience and feelings during the Cyberball game. The dACC is a region of the brain that serves many functions, and is activated for many reasons. It experiences activation for surprise, expectation violation, and pain detection. In the exclusion because of equipment condition, they were expecting to be excluded, whereas in the ostracism condition they were not expecting exclusion. Nevertheless, significant dACC activation was observed for both episodes of Cyberball ostracism. This suggests that the activation was not simply because of expectation violation, but might also be the result of pain detection. Our post-experimental questionnaire supported the pain explanation: self-reported distress correlated 0.88 with dACC activation. This study was replicated in a nonscientific media broadcast by the BBC with only a few participants. The results further corroborate the self-report assessments and provide support for the argument that ostracism, even in a minimal situation and whether or not it is expected, is detected immediately as pain.

A recent study by Zhong and Leonardelli (2008) demonstrates that participants assigned to the ostracism condition in Cyberball feel, relative to their inclusion counterparts, cold. They are even more likely to request something warm to ingest. Although not pain, feeling cold is another unpleasant embodiment of pain, thus lending further support to this hypothesis.

A final piece of evidence comes from work by Jacqueline Nadel and colleagues (2007) on the use of ''still face'' with autistic children. These

autistic children, who ordinarily give no eye contact with the adult and no signs of affection, are temporarily at least transformed into being responsive, affectionate, and attention-seeking simply by being in the presence of an adult adopting a "still face." The still face approximates a mannequin-like expression that is completely unresponsive to the child. How does this support a pain explanation. Years ago, Ivar Lovaas used a cattle-prod on autistic children who were engaged in self- or other-harmful behaviors. Quite unexpectedly, the shocked child became attentive and affectionate, much like Nadel's children. It appears as though the appearance of ostracism in the form of still face produces similar effects to the pain of a shock.

In addition to signaling pain, I argue that ostracism has a deeper psychological impact on individuals. A shock of pain, without any further damage, is unlikely to do much more than encourage the individual to avoid the shocking object. But, much more happens to an individual's psychological equilibrium after ostracism.

3. Ostracism Threatens Four Fundamental Needs, Reduces Positive Affect, and Increases Negative Affect

According to the model, ostracism is an interpersonally aversive behavior unique in that, compared to physical or verbal altercations, it can threaten four fundamental needs: the need to belong (Adler, 1930/1970; Baumeister & Leary, 1995), the need to maintain a reasonably high self-esteem (Steele, 1988; Tesser, 1988), the need to perceive control over one's social environment (Burger, 1992; Peterson et al., 1993; Seligman, 1975), and the need to feel recognized for existing and being worthy of attention (Greenberg et al., 1986, 1990, 1992). The term *need* as applied to these four constructs can be debated; are they needs or motives? As Baumeister and Leary cogently argue (1995) a need, if thwarted, is directly linked to harmful physical and psychological outcomes. There appears to be enough evidence in the literature that not maintaining satisfactory levels of any of these four constructs results in psychological harm. Regarding physical well-being, belonging (Baumeister & Leary, 1995) and control (Langer & Rodin, 1976; Seligman, 1975) are associated with health problems and even mortality, and because self-esteem and lack of meaning are associated with depression, and depression is linked with physical illness (Allen & Badcock, 2003; Myoshi, 2001), it does not seem unreasonable to suggest that each of these four constructs are needs.

Perhaps a more contentious issue is whether or not these four needs are independent constructs. At this point in time, the evidence is murky and contentious. Advocates of each need tend to view the other constructs as

being subsumed by theirs (e.g., see Leary et al., 1995, on how self-esteem is subsumed by belonging; or Greenberg et al., 1992, on how self-esteem is merely a buffer to instantiate meaningful existence). It is neither my intention nor aim to settle this matter, as it seems to me that there is adequate evidence that all four need constructs exist logically and psychologically (including their measurement). It seems reasonable to conclude that they overlap to some degree but are conceptually separable. So, feeling a loss of belonging can lower self-esteem, which can lower a sense of meaningfulness and feelings of efficacy. This sentence can probably be rewritten changing the order of each of these four needs and make sense. Rather than arguing which need holds supreme, I will present my reasons why ostracism can affect each.

Why belonging? Being ostracized by others is a signal of a divorce between self and others. One no longer is connected to the group or to the other individual. The ostracized individual is not attended to, looked at, or considered. By its very definition, the individual is excluded. There is substantial agreement that ostracism (rejection, social exclusion) thwarts belonging (Twenge, Baumeister, Leary, Gaertner, Pickett, Gardner, to name a few).

Why self-esteem? Ostracism involves silence. Its employment, unless done formally by nations or institutions, is usually abrupt and comes with no explanation. This leaves the ostracized individual to generate reasons for their treatment. When left to ruminate, ostracized individuals may conjure up many possible explanations why others are ignoring and excluding them. When considering self-attributions for ostracism, thoughts of self-blame, inappropriate behavior, meanness, selfishness, etc. will be considered. Compare this to a verbal argument in which the cause of disagreement is articulated. There is no need to generate more reasons than the one given. Because the reason is often withheld, targets of ostracism are forced to consider a laundry list of bad things they have done or said. Surveying this list, I argue, will drive self-esteem down further than having to consider only one (or a few) accusations.

Why control? Unlike a verbal or physical disagreement, the ostracized individual lacks any ability to engage the source of the ostracism. Ostracism is unilateral; one cannot argue, discuss, or reason with the ostracizers because they do not respond. In a verbal argument the accosted individual can direct the flow of the argument to some extent, changing arguments, making accusations of the other, escalate or deflate the anger. In a physical altercation the individual can duck, run, or hit back. But there is no efficacious response to ostracism. The individual might as well argue with a brick wall.

Why meaningful existence/need for recognition? Being ostracized, it has been argued (Case & Williams, 2004) is a metaphor for death. Others have suggested death is a metaphor for ostracism (A. Aron, personal

communication, 2006). Either way, being ignored and excluded is like being invisible, like not existing, like being dead. In many tribes that use ostracism, the term translates to social death. James, in his quote, referred to it as "cutting them dead." In this sense, ostracism ought to be a mortality cue, a palpable reminder of what life would be like if they were dead. Verbal and physical arguments do not have this existential threat quality. The individual is real, is being argued with or hit; these are reminders of existence, not nonexistence.

Ostracism reduces positive affect and increases negative affect. Being subjected to ostracism is a negative experience, so it is not surprising that it should be distressing affectively in addition to threatening fundamental needs. As most reactions to pain, negative affect should increase, including anxiety, sadness, and anger, and positive affect should decrease. These effects are routinely found in most ostracism, social exclusion, and rejection paradigms (see Williams, 2007a, for a review). There is some controversy, however, and it is worthy to note that for some studies, affect is not altered. It appears as though studies that employ paradigms that leave the participant without any cognitive or behavioral recourse for re-inclusion (like the life-alone paradigm), affective numbness seems to occur more often than negative affect (Twenge et al., 2003). In many of our and others' studies, emotional assessment is not sufficiently thorough, so it remains to be seen whether other emotions are activated during or after ostracism. Researchers should consider assessing fear, anxiety, shame, guilt, and others.

3.1. Experimental evidence for ostracism-induced need threat

Self-report measures. We have used self-report measures aimed at assessing manipulation checks of belonging and being ignored, need satisfaction (the inverse of which is interpreted as need threat) levels for belonging, self-esteem, control, and meaningful existence, and negative affect in the form of sadness and anger. The current scale in use is shown in Table 6.1. This is a theory-derived measured aimed at assessing perceptions of inclusion and being ignored, levels of satisfaction in the needs, and mood. It is not a validated diagnostic scale. Our analyses indicate that there is high correspondence between the items within each need, four factors that fit nicely with the four needs, but we also see a moderate correlation between all four need satisfaction scales. Often, when not testing a specific need's impact on subsequent measures, we create a need satisfaction index, combining all four needs. When measured, almost all studies in our lab or others' labs show significant reductions in satisfaction to the four needs (Williams, 2007a,b). Thus, in face-to-face ball tossing (Williams & Sommer, 1997), Internet chat rooms (Williams et al., 2002), SMS cell phone texting (Smith & Williams, 2004), role play paradigms (Zadro et al., 2005), event-contingent diary studies (Nezlek et al., 2004), out-of-the-loop paradigms (Jones et al., in press);

Table 6.1 Assessment of manipulations, need satisfaction, and mood following ostracism

For each question, please circle the number to the right that best represents the feelings you were experiencing during the game	Not at all				Extremely
Belonging					
I felt "disconnected" (R)	1	2	3	4	5
I felt rejected (R)	1	2	3	4	5
I felt like an outsider (R)	1	2	3	4	5
I felt I belonged to the group	1	2	3	4	5
I felt the other players interacted with me a lot	1	2	3	4	5
Self-esteem					
I felt good about myself	1	2	3	4	5
My self-esteem was high	1	2	3	4	5
I felt liked	1	2	3	4	5
I felt insecure (R)	1	2	3	4	5
I felt satisfied	1	2	3	4	5
Meaningful existence					
I felt invisible (R)	1	2	3	4	5
I felt meaningless (R)	1	2	3	4	5
I felt nonexistent (R)	1	2	3	4	5
I felt Important	1	2	3	4	5
I felt useful	1	2	3	4	5
Control					
I felt powerful	1	2	3	4	5
I felt I had control over the course of the game	1	2	3	4	5
I felt I had the ability to significantly alter events	1	2	3	4	5
I felt I was unable to Influence the action of others (R)	1	2	3	4	5
I felt the other players decided everything (R)	1	2	3	4	5
Mood					
Good	1	2	3	4	5
Bad	1	2	3	4	5
Friendly	1	2	3	4	5
Unfriendly	1	2	3	4	5
Angry	1	2	3	4	5
Pleasant	1	2	3	4	5
Happy	1	2	3	4	5
Sad	1	2	3	4	5

(*continued*)

Table 6.1 (*continued*)

For each question, please circle the number to the right that best represents the feelings you were experiencing during the game	Not at all				Extremely
Manipulation check					
For the next three questions, please circle the number to the right (or fill in the blank) that best represents the thoughts you had during the game					
I was ignored	1	2	3	4	5
I was excluded	1	2	3	4	5
Assuming that the ball should be thrown to each person equally (33% if three people; 25% if four people), what percentage of the throws did you receive?	—%				

and Cyberball paradigms (Carter-Sowell et al., 2008; Eisenberger et al., 2003; Lakin et al., 2008; Williams et al, 2000; Zadro et al., 2004), there is ample evidence that ostracism, compared to inclusion, results in less belonging, lower self-esteem, less control, and a sense of meaninglessness and invisibility.

Further support for a threat to meaningful existence has been demonstrated in a recent study that found that ostracized participants reported lower scores on a life is meaningful scale. This is noteworthy in that the scale requests of participants their world views of life's meaning, not their current feeling. Anecdotally, we have observed several participants in the ball-tossing experiments pinching themselves while being ostracized, an indication that they are testing for their existence.

Our effect sizes for our measures of reflexive need threat (the inverse of need satisfaction) are routinely large; between 1.0 and 2.0. At one point, we figured it took three participants per cell (that is, three ostracized and three included) to obtain for these measures a p value less than 0.05. The effects extend beyond college students. Cyberball has been used to examine the impact of ostracism on children (Zadro et al., 2008b), adolescence (Sebastian et al., 2008) and a representative sample of male and female African American and European American adults in the US from age 18–82 (Goodwin et al., 2007). For every population tested, a 2–3 min episode of ostracism reliably threatens needs and increases negative affect.

Converging evidence for need-threat is also provided by studies that, either by inference or tested mediation, show outcomes that are predicted by a need-threat assumption. That is, when a need is initially thwarted,

organisms will engage in mental or behavioral activities that serve to fortify the needs. If, for example, control is deprived, then individuals will react against that control deprivation and attempt to regain control (Pittman & D'Agostino, 1989; Pittman & Pittman, 1980; Wortman & Brehm, 1975). Thus, in Sect. 4, I will lay out the assumptions behind the reflective stage and review the research that pertains to need fortification. In the following sections, I consider the effects of long-term or persistent ostracism. Using the control deprivation example again, research has determined that if control fortification fails, over time, helplessness will result, in which organisms show resignation, even if control is achievable (Seligman, 1975; Wortman & Brehm, 1975).

4. Reflection and Recovery: Recovering from Need Threat Directs Need Fortifying Thoughts and Actions

Once individuals detect ostracism, feel the pain, negative affect, and threatened needs, what then? Because their attention is directed to the ostracism experience, they are in a position to assess, appraise, and attribute the meaning and importance of the ostracism episode. According to the need-fortification hypothesis, they will feel, think, and behave in ways that will reestablish optimal levels of the need or needs that were most saliently threatened. It is in this stage that attributions, based upon situational context and individual differences, are hypothesized to play an important role in the speed of psychological recovery and behavioral options used for coping with threatened needs.

Let us first examine evidence on speed of recovery from a brief ostracism episode.

4.1. Speed of recovery

Without distraction. As mentioned earlier in this chapter, Jim Wirth, Eric Wesselmann, and I have developed an online feeling measure to assess the onset, slope, and recovery of negative affect from ostracism. Participants dial their level of negative or positive affect, and we record their dial setting automatically every second. With no instruction or intervening task, but with the Cyberball task completed, participants continue to dial their affect over time. Using this as one gauge of recovery, we find that without debriefing or distraction, participants began to recover within a few seconds, and recovered to the level of inclusion within a minute. This is not surprising. First, Cyberball is an admittedly mild form of ostracism; the participant has never met, nor intends to meet the other players, and they

are engaged in a minimal form of computer mediated interaction. Second, these participants have nothing to do but monitor their feelings following their Cyberball experience, so they are able to cognitively and affectively cope with what just happened unabated by distracting tasks. Other evidence suggests longer recovery rates for participants when other tasks intercede.

With distraction. Zadro et al. (2006) had participants (half in the normal range and half high in social anxiety) play Cyberball and fill out immediately after the need satisfaction and mood measures. The participants were then given several tasks to work on for the next 45 min. At the end of that time they were once again asked to answer about their current need satisfaction and mood. The authors found that both low and high social anxiety participants experienced distress as indicated by the measure asking them how they felt during the game (the immediate or reflexive stage). After the 45-min work period, those in the normal range of social anxiety had recovered completely to the levels of participants who were in the inclusion condition. Those who were high in social anxiety, however, were only half-way to full recovery.

Recovery moderated by individual differences. Oaten et al. (2008) conducted a similar study with normal to high social anxiety participants, but examined their abilities to self-regulate following inclusion or ostracism. In the first study, self-regulation involved not being tempted by eating too much non-nutritious food; in the second study, self-regulation was measured by willingness to drink a foul-tasting, but supposedly nutritious drink. In both studies, they found that the individual differences in social anxiety had no impact on initial levels of self-regulation, and that following ostracism, all participants were less able to self-regulate than had they been included. Forty-five minutes later, however, only those who were high in social anxiety continued to show problems with self-regulation. Another study found individual differences in subsequent retaliative responses to rejection, finding that participants scoring higher in rejection sensitivity were more likely to allocated hot sauce to the perpetrator of rejection (Ayduk et al., 2007).

Recovery moderated by situational context. Gonsalkorale and Williams (2007) examined whether ostracism by despised others would be less aversive, or perhaps even positively valenced event. After all, should not we want to be excluded and ignored by people we hate? In their study, we convinced Australian students that they were participating in a cross-national study that involved other individuals from diverse groups. This allowed a convincing cover story that resulted in participants believing that they were playing Cyberball with individuals who shared their own political leanings, had political leanings of the opposing party, or who represented the upstart KKK of Australia. Pretesting indicated that participants liked best others who shared their political leanings, were unfavorable to those espousing the opposing party, but absolutely despised members of the KKK of

Australia. They then played Cyberball with two other individuals who were from one of these three groups (Labour, Liberal, or KKK). Relying only on immediate measures of distress, we found that, regardless of the group membership of the other players, ostracism was strongly and similarly distressing, indicating once again the unwillingness or inability of individuals to incorporate contextual information in their immediate responses to ostracism.

But what if we had given participants some time to recover, to get beyond the initial pain, negative affect, and need threat? In a follow-up to this research, Gonsalkorale et al. (2008) replicated the basic aspects of the study with African American students at Howard University. Immediate responses to ostracism, despite the fact that African Americans are the targets of hate by the KKK, still reacted no more negatively to ostracism by the KKK as they did to ostracism by Republicans or Democrats. More importantly, we assessed their negative affect and need threat a second time after the passage of several minutes. Here, we see recovery moderated by the situational context. Recovery was more complete for those ostracized by the KKK than by the opposition party (e.g., Republicans), and being ostracized by the opposition party allowed fuller recover than being ostracized by members of their own party (e.g., Democrats). These results suggest that, whereas immediate responses are not moderated by context, recovery and coping processes take context into account.

There are many situational contexts that can potentially speed or hinder the recovery process. In addition to the KKK studies, group membership of the ostracizers has been examined in other experiments (Goodwin et al., 2007; Wirth & Williams, in press), which show recovery is quicker and fuller when ostracized by outgroup members.

Other situational factors that inform perceived motives should similarly affect whether the individual can dismiss the ostracism episodes, or worry about them. In my original model (Williams, 1997), I suggested that an ostracism episode could be attributed to several motives, each carrying more weight. Often, individuals consider a brief instance as ostracism (''he didn't say 'hi' back!'') when they find out that the other person had not heard (''oh, he's listening to his iPod''). Thus, *mistaken episodes* of ostracism ought to cause only temporary distress until the mistake is discovered. Often, *norms* of society dictate civil ostracism, as when elevator riders are not attended to by other riders. Although elevator riders were briefly offput (as measured by mood as soon as they stepped off the elevator) by another rider not acknowledging their existence with the typical eye gaze and nod, it is likely they recovered quickly (Zuckerman et al., 1983). Sometimes, people engage in ostracism to avoid aversive consequences themselves. We may not speak to someone because we anticipate their wrath; we may ostracize because if we do not, we risk being ostracized ourselves. This occurs with employees at corporations when a whistle-blower returns to work;

best friends of the whistle-blower will join the other and *defensively ostracize* for fear that the other employees will freeze them out, too (Faulkner, 1998). In many instances, of course, ostracism is perceived (and intended) as punitive, and this should be more difficult to slough off as being unimportant or inconsequential. Finally, a rather pernicious form of ostracism, *oblivious ostracism*, occurs when an individual (or group) is simply unworthy of attention. They are so low on the pecking order that they are not seen nor heard by others. This occurs in caste systems as well as in everyday instances where status and power are particularly salient. When individuals attribute ostracism to this motive, not only do the feel the sting of ostracism, but also needs of existence and recognition ought to be so threatened that recovery may take the longest. More research is needed to determine the recovery rate as a function of the attributed ostracism motive.

Hence, social anxiety, an individual difference that filters and selectively attends to socially ambiguous or aversive events, and situational context in the form of the social identity of the ostracizers, both play a role in recovery from ostracism. Presumably, those high in social anxiety could not easily discount the ostracism episode as meaningless, and instead, probably ruminated about why they were ostracized and what they may have done to bring on such treatment. And, those finding themselves ostracized by a despised outgroup could more easily discount and recover from the pain and distress. Those ostracized by ingroup members continued to be distressed.

The role of distraction and rumination. Swim and Williams (2008) tested more directly the role of rumination on recovery from ostracism. Participants played Cyberball and were either included or ostracized. Following reporting their need satisfaction levels and mood, half the participants were instructed to watch and write about four change blindness slides, an engaging and distracting task that prevents rumination. The other half of the participants were encouraged to ruminate, to write down their thoughts about what they were thinking "right now." As expected, the content of the online writing was infused with thoughts about the Cyberball experience, particularly for those who were ostracized. They then reported their levels of need satisfaction and mood again. Those who were prevented from ruminating had recovered from the aversive experience of ostracism, whereas those who were encouraged to ruminate remained in psychological distress.

4.2. Need fortification

According to the need-fortification hypothesis, ostracized individuals (compared to those who were included), should feel, think, and act in ways that will fortify the most saliently threatened need(s). For example, if belonging is highly threatened, ostracized individuals should have a higher desire for

belonging, should have thoughts and perceptions of social connections, and should behave in ways that elevate their chances for belonging. The same can be said for self-esteem, control, and meaningful existence.

Inclusionary need cluster: Belonging and self-esteem. To the extent that self-esteem can be understood as a sociometer of social inclusion (Leary et al., 1995), the constructs of belonging and self-esteem become intertwined. Thus, in this section, and because ostracism and rejection research has not yet disentangled self-esteem from belonging, I suggest that thoughts, feelings, perceptions, and behaviors aimed at fortifying belonging also elevate self-esteem. Belonging and self-esteem, then, become an inclusionary need cluster, such that fortification serves the purpose of increasing the likelihood that the individual feels connected, or can become connected to others.

Power and provocation need cluster: Control and existence. In a similar vein, it is operationally difficult to separate desires to exert control from desires to be noticed and thought worthy of attention. An act of exerting control or being especially provocative fortifies both needs. Thus, I will review research evidence for these two needs as they represent a singular cluster of power and provocation. When these needs rise to the top of individuals' priorities, they may be less concerned for being liked and fitting in than they are in dominating others and forcing others to recognize their existence. Thus, we may be more likely to expect antisocial and aggressive acts.

4.3. The inclusionary cluster: Belonging and self-esteem fortification

Several studies in ours' and others' labs have provided converging evidence that following ostracism (or rejection), individuals behave in ways to reestablish their inclusionary status. That is, they do things to either remind themselves of their social connections, or that will improve their chances of belonging. Thus, we would expect to see evidence of increased social attentiveness that would aid the individual in discerning cues that could enable social connectivity. Further, there ought to be evidence that, if given an opportunity, ostracized individuals should do things that would make them fit in and be more attractive to others. Ostracized individuals should therefore try harder to fit in and be liked, even to the point of becoming socially servile and susceptible to social influence.

Social attentiveness. According to research by Gardner, Pickett, and colleagues, and similar to Leary et al.'s sociometer theory, humans possess a social monitoring system that signals when the individual's inclusionary status is at risk. Once signaled, the social monitoring system motivates the individual to monitor and attend cues that others emit to enhance inclusion possibilities (and to avoid rejection possibilities). The first step in this process is to be hypersensitive and attentive to social information. Consistent with this hypothesis, individuals who scored higher in the need to belong, or in

loneliness, were more likely to show improvements on memory for social information (Gardner et al., 2000). Those higher in belonging also have been shown to be more sensitive to nonverbal cues (Pickett et al., 2004).

More recent research suggests a bias in favor of social attention to potentially accepting individuals. For instance, participants who were asked to recall an instance when they were rejected were better able to discriminate accurately between nongenuine (or deceptive) smiles and genuine (Duchenne) smiles (Bernstein et al., 2008). In a related study, ostracism improved individuals' ability to detect between-category variability (i.e., between sad and happy) in relevant social stimuli at the expense of within-category variability (i.e., variations within happy) (Sacco et al., 2008). Similarly, excluded participants were fast at spotting smiling faces in a crowd, fixed their attention more on smiling faces in an eye tracking task, and persisted longer in attending to smiling faces (DeWall et al., in press).

4.4. Social servility

Social servility refers to an individual's proclivity to be overly concerned with fitting in and being liked to the point of being especially malleable and obsequious.

Nonconscious mimicry. Increasing one's attraction to others can be done consciously and nonconsciouly. One nonconscious behavior is to increase one's mimicry of another. In a very clever set of studies, participants were ostracized or included (via Cyberball) and then met with another person (a confederate who displayed various behavioral mannerisms) for an interview. Ostracized participants were more likely to mimic these mannerisms, especially when the other person was an ingroup member (Lakin et al., 2008).

Working harder for the team. Typically, people engage in social loafing when they are working on a collective task in which their individual contributions are pooled (Karau & Williams, 1993). After being ostracized (compared to included) in the waiting room ball toss game, female participants (but not males) were more likely to do the opposite: to work harder when working collectively than when working individually on an idea generation task. Presumably, female participants were more concerned to do well and improve their inclusionary status when combining their efforts with those who ostracized them, than were females who were individually accountable for their efforts (Williams & Sommer, 1997). This finding was replicated recently, although the authors argued that social status rather than gender alone may account for the sex differences (Bozin & Yoder, 2008).

Compliance. Another way to be liked is to be more compliant, to agree to costly and possibly unwanted requests. Following a game of Cyberball in which they were either included or ostracized, participants were led to a waiting room for an ostensible second phase of the experiment. Waiting in the room was a participant (actually, a confederate) who had just arrived and

had not participated in the Cyberball game. When the experimenter left the waiting room, the confederate told the participant that she was a Purdue band member and was collecting pledges for a fund raiser. Using either a direct request, the foot-in-the-door tactic or the door-in-the-face tactic, the confederate requested a pledge from the participant. Regardless of tactic used, ostracized participants were more likely to make a pledge, and pledged more money than included participants (Carter-Sowell et al., 2008).

Behavioral extraversion. Will ostracized individuals be more outgoing, more open to possible relationships, and actively search for others with whom to connect or groups to join? In one study, following Cyberball inclusion or ostracism, participants were asked to evaluate a randomly drawn videotape of a new student organization. Regardless of whether the new student group espoused laudable goals such as improving resume writing and interviewing skills for students looking for employment, or more questionable goals of using the mind to bend spoons and walk through walls, ostracized participants liked the group spokesman and his group better (Wheaton, 2001). When asked to evaluate potential dates, ostracized males reported a greater desire to affiliate romantically and platonically than included males. Moreover, ostracized males also reported consistently enhanced perceptions of their own desirability (both platonic and romantic). Ostracized females, however, did not report an elevated desire to affiliate platonically or romantically when compared to included females, nor did they view themselves to be any more desirable. This pattern of results is consistent with evolutionary explanations of differential mate selection pressures between the sexes (Winton et al., 2008). In another set of six studies, participants were threatened with social exclusion expressed greater interest in making friends, to work with others, to form more positive impressions, and to reward new interaction partners. These effects were not observed if the others were the perpetrators of the exclusion (Maner et al., 2007).

4.5. Power and provocation cluster: Control and existence fortification

Several studies provide evidence for control fortification. In two studies reported by Lawson Williams and Williams (1998) and Williams (2005). In Study 1, male students at the University of Toledo (OH) were either ostracized or included in the waiting room with the face-to-face ball-tossing game, and were led to believe the other two individuals were either strangers to each other or friends with each other (in either case, the participants did not know the confederates). Based on pretesting that indicates people feel less in control when in the presence of two people who are friends with each other, it was hypothesized that those ostracized by a friendship-pair would feel the strongest control threat. Following the

ball tossing, a fourth participant (also a confederate) showed up and the participant was paired with this newcomer in a ''facial communication'' study. Participants were asked to guess on several trials the color of the playing card at which the newcomer was looking. Participants were told they could request that the newcomer look left, look right, or look straight ahead as often as they wished to help them make the guess. The more requests of the newcomer to shift his face were our measure of exerting control. Consistent with our prediction, it was only the participants who were ostracized by the friendship-pair who exerted significantly more (in fact, twice as much) control over a newly arriving naive participant. In Study 2 with Australian female students, waiting participants played the emergent face-to-face ball toss game with two strangers or two females who were friends with each other. They were then given Burger's (1992) desire to control scale. The same pattern of results emerged; only those participants who were ostracized by friendship-pairs reported a higher desire for control.

Control fortification and aggression. Further support for control fortification was found by Warburton et al. (2006) who examined aggression following ostracism. As Tedeschi (2001) argues, aggression is a behavior that reestablishes power and control. Under the guise of an experiment examining cross-modality perception, participants first found themselves in the waiting room and playing the face-to-face toss game. Half were included and half were ostracized. Once the ''actual experiment'' began, they were told they had to listen to 10 noise blasts of a highly irritating sound. Half were told they could control the onset of each noise blast (control restoration) whereas the other half were subjected to an unpredictable sequence of the noise blasts (control deprivation). In the next phase of the experiment, with a rigged drawing, they were assigned the task of doling out a portion of food for the ostensible food perception phase of the study (rather than being assigned the role of taster). They could give as little or as much of the food as they wished to a naive participant, who had to eat the entire amount, and whose food preferences had been assessed. All participants found out the food (again, determined by a rigged drawing) was hot sauce, and that the naive participant strongly disliked hot sauce. Thus, control fortification was assessed by the amount of hot sauce the participant allocated. Hot sauce allocation is used by aggression researchers; the more hot sauce allocated, the more aggressive the act (Lieberman et al., 1999). The results of this study support the control (via aggression) fortification hypothesis. Only the ostracized control-deprived participants showed significantly higher levels of aggression, allocating nearly five times as much hot sauce as did participants in the other three conditions.

Other studies have examined factors that moderate the ostracism/rejection → aggression link. One study found that when a highly entitative group socially rejects individuals and the individuals have an opportunity to retaliate, they are more likely to do so than if the group is less entitative (Gaertner et al., 2008). These results are consistent with the Williams and

Lawson Williams study mentioned earlier when individuals were ostracized by friendship-pairs; one feels less control when rejected by a tight-knit group than a mere collection of individuals. Another study found that induced anger, but not sadness, led to greater aggression following ostracism. Additionally, when anger was manipulated by unfair ostracism (in Cyberball), participants were more aggressive than if the ostracism was perceived as more fair (Chow et al., 2008). If schemas of fairness are violated, it may be that the predictive and explanatory control offered by such schemas are undermined, leading to a desire to control through aggression.

Life-alone and blind-sided rejection paradigms increase aggression. Research that uses control-threatening exclusion paradigms also supports the ostracism → control → aggression link. Twenge and her colleagues (Twenge et al., 2001, 2007) have used two exclusion paradigms that, by themselves, increase the likelihood of aggression. Compared to the ostracism paradigms used in our lab, these paradigms seem to be especially highly threatening to control. In the life-alone paradigm, participants are led to believe that their personality test scores indicate that by the time they reach the age of 25, they will no longer be able to maintain close relationships, and will live out their lives alone. Clearly, if believed, participants in these studies are left little recourse to do or imagine ways in which they could reestablish social connections. Because their future aloneness is inevitable, any control they have to establish close social connections has been stripped away. Thus, aggression and the control it provides becomes the behavior of choice.

Another paradigm that yields aggressive reactions is the get-acquainted paradigm (Nezlek et al., 1997; Twenge et al., 2001). In this paradigm, participants meet together in groups and are told to get acquainted. They are given some topics (e.g., favorite movies, home towns) to talk about, and they enjoy a friendly group discussion. They are then separated into individual cubicles, asked who of the group they would like to work with and then experimenter takes the information to form groups. When the experimenter returns, participants hear that either everyone or no one wants to work with them. When given the rejection information, participants were more likely to be aggressive toward members of the group or naive others. At first, this direct rejection → aggression finding was puzzling. In thinking about the phenomenology of the participants in this paradigm, however, we guessed that they were generally finding themselves in a positive and friendly group interaction. So, to hear that no one likes you should be quite an unexpected jolt. Their sociometers, their gauges of inclusionary status, must have been giving them hopeful feedback, and yet they are blindsided by the unanimous rejection. We think they felt let down by their sociometers; their gauges of inclusionary status were either unreliable or broken. This realization, we reasoned, threatens explanatory and predictive control (Skinner, 1996). An excessive loss of control is not as obvious in this paradigm, so we conducted an experiment in which we replicated the

conditions of these other studies, with a twist. Participants had their discussion among a group of confederate students. The confederates were trained to be attentive, responsive, and friendly, or uninterested and dismissing when the participant spoke. Thus, half were led to expect rejection whereas the others expected acceptance. This manipulation was crossed with the feedback that all or none of the group members wanted to work with them. Participants were then taken to a new experimental room and asked to take part in a food taste test (similar to the hot sauce paradigm described earlier). Aggression was significantly higher when rejected participants were blindsided by the group vote than when they were led to expect rejection (Wesselmann et al., 2007). Thus, it appears that control deprivation plays a crucial role in the ostracism → aggression sequence.

As yet, no studies have specifically set out to test whether ostracized individuals are more likely to attempt to fortify self-esteem or meaningful existence. Anecdotally, one of the five participants in a week-long role play study (i.e., *the scarlet letter*), expressed no concern for being liked when subjected to hours of ostracism by his peers, but felt jubilant when his repeated attempts to catch their attention met with success.

Gerber and Wheeler (in press) conducted a meta-analysis of the ostracism, exclusion, and rejection literature and focused on evaluating the evidence for behavioral indicators of need threat. They found strongest support for behavioral indicators of threats to belonging and control, with little or no direct support for behavioral indicators of threats to self-esteem or meaningful existence/need for recognition.

Clearly, experimental evidence is needed to test these hypotheses, but real-world events like school shootings and shooting sprees seem to combine a feeling of being ostracized or marginalized from peers or society, with a motivation to be noticed and remembered, and if not respected or feared (Leary et al., 2003). As Dennis Lynn Rader, the BTK (bind, torture, and kill) Killer from Wichita, Kansas wrote, "how many do I have to kill before I get some national attention?" (Chu, 2005).

5. Resignation: Long-Term Effects of Persistent Ostracism

Some individuals are ostracized for long periods of time, by the same individual or group, or by any number of different sources. The closest we can get to this stage, empirically, might be examining the life-alone paradigm that Twenge, Baumeister, DeWall and colleagues use (Baumeister & DeWall, 2005; Baumeister et al., 2002, 2006; Twenge et al., 2001; 2003, 2007). Within a short laboratory session, participants are convinced that they will lead a life alone; that by the age of 25, they will no longer have

successful relationships, and that if they ever marry, their marriages will not last. To the extent that participants believe this prognosis, they are, in a sense, experiencing an anticipated long-term period of social ostracism and disconnection from others. How do these participants respond that speaks to these long-term effects?

The first striking difference between the results of these studies and those using more temporary methods of ostracism (e.g., ball-tossing, Cyberball, group rejection) is that negative affect appears to be missing. Participants become affectively numbed, or as Baumeister and Twenge describe it, cognitively deconstructed (Baumeister et al., 2006). Baumeister, in his analysis of people attempting suicide, finds a similar pattern of cognitive deconstruction prior to the suicide attempt (Baumeister, 1990). In essence, if emotions are for action, affective numbness is a signal of passivity, of giving up, of psychological paralysis. Thus, these studies provide some evidence for, rather than fighting or fortifying, helplessness and submission.

The second pattern these researchers find is a lack of self-regulation (Baumeister et al., 2006) following the life-alone feedback. To the extent that need fortification can be viewed as a form of self-regulation, a costly yet functional goal, then we could regard this temporary long-term response of impaired self-regulation as another form of unwillingness to try, to work, to fortify.

Other than these empirical investigations using the life-alone feedback, research on the long-term effects of ostracism are, at this point, mostly based on qualitative research, interviews, letters, and anecdotes. As such, these accounts provide a rich collection of examples and insights that can speak to, if not test, the third stage of the temporal model of ostracism.

Lisa Zadro, as part of her dissertation, interviewed over 50 individuals who had experienced long-term ostracism (Zadro, 2004). These individuals responded to newspaper and magazine ads asking those with experiences with long-term ostracism or the silent treatment to come to our laboratory for an hour interview. About two-thirds of the individuals were subjected to long-term ostracism whereas the other third had subjected others to long-term ostracism.

The third stage of the temporal model, called resignation, suggests that the resources necessary for fortifying threatened needs become, over time, depleted. Like reactance turns to learned helplessness (Wortman & Brehm, 1975), belonging fortification should turn to detachment and alienation, self-esteem maintenance should turn to depression, and attempts to prove worthy of attention should turn to passivity and a sense of worthlesness.

How does persistent ostracism affect individuals, who despite early attempts at fortifying their needs, are subjected to weeks, months, and years of being invisible to those in their lives? Quotes from our letter writers and interviewees seem to support the resignation hypothesis.

> I just sort of go into a little shell and I don't want to talk in case I'm not there . . . I feel as if I'm a ghost.

One young woman had a history of verbal abuse followed by several months of silence from her father. She had sought counseling for depression, and was especially distraught over the realization that the pattern of ostracism would never stop.

> I'm 40 years old and my father hasn't talked to me for the last 6 months. Recently, he was in hospital and I was told he might die. I decided I had to go see him, even if he wasn't talking to me. I walked up to him and held his hand and said "Oh Daddy, please don't leave me." He looked at me, his eyes welled up with tears, then turned his head away from me. He still wouldn't talk to me . . . his death would be the final silence.

An elderly woman's husband did not look at her, talk to her, eat with her for the last 40 years of his life (he passed away before we interviewed the wife). When asked why she did not leave her husband, she said she did not think anyone would want her and at least she had a roof over her head.

In many instances, targets of long-term ostracism revealed suicidal ideation or actual suicide attempts. One woman recalled,

> In high school, the other students thought me weird and never spoke to me. I tell you in all honesty that at one stage they refused to speak to me for 153 days, not one word at all . . . That was a very low point for me in my life and on the 153rd day, I swallowed 29 Valium pills . . .

Almost all of those interviewed who had been subjected to long-term ostracism mentioned, without prompting, that they would have preferred physical abuse over ostracism (recall the William James' quote earlier suggesting that even torture would be preferred to being cut dead). As one woman said,

> . . . My second husband, who was an alcoholic used to physically abuse me, but the bruises and scars healed very quickly and I believe that [the silent treatment] is far more damaging than a black eye . . .

When we finally asked our interviewees why they would have preferred physical abuse we heard two answers. First, they said that then they would at least know that their spouse knew they existed. The second reason dealt with the deaf ear victims of long-term ostracism face when trying to relate their problems to others. A middle-aged woman said, "I can take bruises to the police, but I can't show them the bruises of silence."

A letter from a father who found himself ostracizing his son for several months is enlightening, not only in terms of what the ostracism did to his son, but why and how people choose to ostracize, and why it may become a long-term process.

Not so long ago, I had a row with my son, which was terminated by his use of extremely violent and foul language at me. I was so shocked and outraged by this incident that I instinctively, that is without any thought about what should be my appropriate response, instigated a regimen of ostracism toward him. I did not speak to him, I did not acknowledge anything he said to me, or anyone else, in fact I acted as if he were not even present. I did not set a place for him at the table nor did I provide for him in any meals that I prepared for the family.

As I said, I slipped into this, although for me novel, paradigm without any premeditation and, hence, without any difficulty and maintained it comfortably as if it were the natural way of family relationships. I was able to perpetuate it easily and without any discomfort for myself.

After two weeks, I woke up one morning with a blinding flash of insight: ''What are you doing to your relationship with your son?'' In that short period my son had already become intimidated by this treatment – he did exactly what his mother said at all times and whenever he spoke it was in a quiet whisper. I am ashamed to say that I was sort of pleased with the effect of my ostracism but, as I say, one day I suddenly realised that it was making him weak and submissive and that it was eroding the future quality of our relationship.

To terminate the ostracism, however, was an extremely difficult process. I could only begin with grudging, monosyllabic responses to his indirect overtures. I was only able to expand on these responses with the passing of time and it is only now, about six weeks since the ostracism ceased that our relationship appears to be getting back to pre-row normality. The pain and stress from a period of ostracism clearly impact on the principals for far longer than the actual period of ostracism.

On your radio program last week, the case was mentioned of a husband who ostracised his wife for 40 years. I suspect that, in that particular case, the longer the ostracism persisted, the harder it became to stop such that there came a point when, no matter how much that husband wanted to speak to his wife, it was just too difficult to do. This is what I felt after just two weeks of ostracism of my son – that if it had lasted much longer I might have not have been able to stop and that not only would our relationship have been destroyed but also my son himself might have been permanently emotionally and physiologically disfigured. Further, as also suggested on the radio program, it may even have led to illness and perhaps, ultimately, to his premature death.

So the point of this letter is just to say that ostracism can be like a whirlpool, or quicksand, if you, the user, don't extract yourself from it as soon as possible, it is likely to become impossible to terminate regardless of the emergence of any subsequent will to do so.

The use of ostracism against one's immediate family might be an instinctive reaction but its effects may be horrific. I have been deeply shocked by the effect of its use in my family and will ensue that it never happens again.

> I hope that this anecdote will help to add weight to any thesis that you may be developing such that some good may come from that harrowing experience. [reprinted with permission]

Not only does long-term ostracism debilitate psychological resilience, but once started, appears to be difficult for perpetrators to stop.

More research needs to be done on the effects of long-term ostracism. There are many sectors of society who experience ostracism on a daily, weekly, monthly, and yearly basis. These include the mentally ill, physically challenged, homeless, and to a lesser degree, anyone who is not fulfilling the role that is expected of them, like middle-aged single individuals among their married friends (DePaulo & Morris, 2005; Williams & Nida, 2005) or married students among their single student friends (Carter-Sowell, 2008). What can be done to ameliorate the helplessness and depression that slowly replaces the fight to fortify threatened needs? Often, groups of individuals feel ostracized by the majority. How do groups, in comparison to individuals, respond to ostracism? Both of these issues are discussed briefly in the final section that points to our gaps in the understanding of ostracism.

6. Future Research: Groups, Communication, and Assistance

Small and large groups, clans, gangs, organizations, and countries are often "not recognized" by society or the rest of the world. It is unfortunately too easy to think of instances of disenfranchised groups who resort to provocative actions and violence to gain attention and fear, if not respect, from the world around them. Yet, our understanding of the effects of ostracized groups is negligible compared to our knowledge of the ostracized individual.

How do groups, compared to individuals, respond to ostracism?

Does sharing the ostracism experience with others in one's group diffuse the aversive impact of the ostracism? Because individuals in ostracized groups already have a sense of belonging in their group, are they more likely to turn to provocation and violence than are individuals who are ostracized? These are questions that deserve our attention, and we are just beginning to examine them.

According to Latané (1981), bearing the negative impact of outside sources should be diffused or lessened when one shares the impact with others who are co-targets of the same aversive behavior. Like individuals who diffuse responsibility for helping (Latané & Darley, 1970) or for working (Latané et al., 1979), should ostracized individuals feel less pain and less need threat when they share the ostracism with others? Using the

train ride paradigm (Zadro et al., 2005), we recently manipulated whether two sources ostracize one target or two sources ostracize two targets. Behaviorally, we see evidence that when a target of ostracism has a co-target, they turn to that co-target and seem to form a bond by talking and commiserating with each other. They also report less distress. Yet, two experiments using Cyberball, in which we examine individuals or pairs playing the virtual ball toss game with other individuals or pairs, suggest no immediate diffusion of negative affect or need threat (Carter-Sowell et al., 2007; Schefske et al., 2008). Instead, we observe the same levels of aversive impact and negative affect immediately, but some evidence suggesting faster and better coping in the reflective stages.

The discontinuity effect (Insko, Schopler et al., 1990) describes the findings in group-to-group negotiation and cooperation/competition research that groups are more competitive and aggressive to other groups than individuals are to individuals. We see some evidence of this in our group-to-group ostracism studies, in that groups tend to be more aggressive in their responses to other groups, than are individuals to other individuals.

Taken together, these preliminary results suggest that individuals in groups are not protected from the initial pain of ostracism, but can find comfort and engage in retaliative responses more than lone targets of ostracism. The implication for real-world groups is both optimistic and frightening. Ostracized group members can comfort each other and speed up the coping process, but they might also turn to provocation and violence more easily and quickly than their individual counterparts.

6.1. What can be done to help targets of ostracism? A call for research

A second domain of research that requires exploration is what can be done to buffer or ease the pain that ostracism inflicts. Given the results of the research to date, we have much more evidence that ostracism hurts than we have evidence for reducing its distressing impact.

The research from the reflexive stage suggests little or nothing can be done to eliminate the initial prick of pain that ostracism elicits. Perhaps this is good, because if we numbed ourselves to this pain, we may not become aware of situations in which our inclusionary status is at risk. Recovery from the pain of these occasional ostracism episodes is relatively quick and, judging from the behavioral evidence for fortification, effective. The real problem exists for those who are making the transition from short to long-term ostracism. Those who endure perpetual ostracism appear to lose their ability or motivation to fortify their threatened needs, and become despondent, alienated, and experience feelings of worthlessness. If any stage of response to ostracism deserves our attention, it should be to help individuals maintain their motivation and effort to resist helplessness.

Individuals who are unable to make the effort to seek connections with real people can even find relief by making parasocial attachments to pets, photographs of friends, and even favorite TV characters (Gardner, Pickett, & Knowles, 2005). Some even suggest that acetaminophen can, over several days, reduce the psychological hurt of ostracism (DeWall et al., 2008). Maybe support groups comprised of ostracized individuals could be formed to provide members with bolstered senses of belonging, self-esteem, control, and meaningful existence.

One goal of this chapter is to call for theory-driven applied research aimed at aiding the plight of ostracized individuals and groups before they pass into a stage of resignation and depression.

7. Summary

Ostracism is a behavior employed by all social animals. Its use strengthens and protects the ostracizers while sending a quick signal to the target that demands attention and possible behavior change. The ostracized individual feels a palpable threat not only in the feeling of pain, but also at four fundamental needs: belonging, self-esteem, control, and meaningful existence/recognition by others. Upon reflection, if the ostracism is considered meaningful and important, it leads the individual to feel, think, and behave in ways that fortify or restrengthen the threatened needs. If belonging and self-esteem are most saliently threatened, then individuals will fortify by increasing their inclusionary status. They will be more open to others, pay more attention to others, conform and comply, generally becoming servile and friendly. If, however, control and meaningful existence/recognition by others is most saliently threatened, the individual will forsake positive impressions by others and will provoke and exert control, even aggressive control, toward others. Finally, if individuals endure ostracism over weeks, months, or years, their resources needed to cope by fortifying their threatened needs will become depleted, and they will enter a stage of resignation, alienation, helplessness, and depression. Future research should examine the impact of ostracism on small and large groups, as well as examine strategies that can prevent the entrance into the resignation stage.

ACKNOWLEDGMENTS

This material is based upon work supported by the National Science Foundation under Grant No. 0519209. I would like to thank Kari Slater for her valuable comments on an earlier draft.

REFERENCES

Adler, A. (1970). *The education of children* (E. & F. Jensen, Trans.). Chicago: Regnery, (original work published in 1930).

Allen, A. B., & Badcock, P. B. (2003). The social risk hypothesis of depression: Evolutionary, psychosocial, and neurobiological perspectives. *Psychological Bulletin, 129*, 887–913.

Ayduk, O., Gyurak, A., & Luerssen, A. (2007). Individual differences in the rejection-aggression link in the hot sauce paradigm: The case of rejection sensitivity. *Journal of Experimental Social Psychology, 44*, 775–782.

Bagg, D., & Williams, K. D. (2008). *The sympathetic effects of witnessing ostracism,* Chicago: Presented at the Midwestern Psychological Association.

Baumeister, R. F. (1990). Suicide as escape from self. *Psychological Review, 97*, 90–113.

Baumeister, R. F., & DeWall, C. N. (2005). The inner dimension of social exclusion: Intelligent thought and self-regulation among rejected persons. In K. D. Williams, J. P. Forgas, & W. von Hippel (Eds.), The social outcast: Ostracism, social exclusion, rejection, and bullying (pp. 53–73), New York: Psychology Press.

Baumeister, R. F., DeWall, C. N., Ciarocco, N. L., & Twenge, J. M. (2006). Social exclusion impairs self-regulation. *Journal of Personality and Social Psychology, 88*, 589–604.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497–529.

Baumeister, R. F., Twenge, J. M., & Nuss, C. K. (2002). Effects of social exclusion on cognitive processes: Anticipated aloneness reduces intelligent thought. *Journal of Personality and Social Psychology, 83*, 817–827.

Bernstein, M. J., Young, S. G., Brown, C. M., Sacco, D. F., & Claypool, H. (2008). Adaptive responses to social exclusion: Social rejection improves detection of real and fake smiles. *Psychological Science, 19*, 981–983.

Bozin, M. A., & Yoder, J. D. (2008). Social status, not gender alone, is implicated in different reactions by women and men to social ostracism. *Sex Roles, 58*, 713–720.

Burger, J. M. (1992). *Desire for control: Personality, social and clinical perspectives,* New York: Plenum.

Carter-Sowell, A. R. (2008). The marginalization of graduate students with dependents. Dissertation proposal, Purdue University, West Lafayette. IN.

Carter-Sowell, A. R., Chen, Z., & Williams, K. D. (2008). Ostracism increases social susceptibility. *Social Influence 3*, 143–153.

Carter-Sowell, A. R., Williams, K. D., van Beest, I., & van Dijk, E. (2007). *Groups ostracizing groups: The effects of having a co-target,* Chicago, IL: Presented at the annual meeting of the Midwestern Psychological Association.

Case, T. I., & Williams, K. D. (2004). Ostracism: A metaphor for death. In J. Greenberg, S. L. Koole, & T. Pyszczynski (Eds.), *Handbook of experimental existential psychology,* (pp. 336–351). New York: Guilford Press.

Chen, Z., Williams, K. D., Fitness, J., & Newton, N. (2008). When hurt will not heal: Exploring the capacity to relive social and physical pain. *Psychological Science, 19*, 789–795.

Chow, R. M., Tiedens, L. Z., & Govan, C. L. (2008). Excluded emotions: The role of anger in antisocial responses to ostracism. *Journal of Experimental Social Psychology, 44*, 896–903.

Chu, J. (2005). Was the killer next door? *Time Magazine,* Sunday, March 6, 2005. http://www.time.com/time/magazine/article/0,9171,1034672–3,00.html.

Coyne, S. M., Nelson, D. A., Robinson, S. L., & Gundersen, N. (2008). Is viewing ostracism on television distressing? Unpublished manuscript, Brigham Young University, Provo, UT.

Craighead, W. E., Kimball, W. H., & Rehak, P. J. (1979). Mood changes, physiological responses, and self-statements during social rejection imagery. *Journal of Consulting and Clinical Psychology, 47*, 385–396.

DePaulo, B. M., & Morris, W. L. (2005). Singles in society and in science. *Psychological Inquiry, 16*, 57–83.
DeWall, C. N., MacDonald, G., Webster, G. D., Stillman, T. F., Tice, D. M., & Baumeister, R. F. (2008). Acetaminophen reduces psychological hurt feelings over time, Unpublished manuscript, University of Kentucky, Lexington, KY.
DeWall, C. N., Maner, J. K., & Rouby, A. (in press). Social exclusion and early-stage interpersonal perception: Selective attention to signs of acceptance. *Journal of Personality and Social Psychology*.
Dittes, J. E. (1959). Attractiveness of group as function of self-esteem and acceptance by group. *Journal of Abnormal and Social Psychology, 59*, 77–82.
Eisenberger, N. I., & Lieberman, M. D. (2004). Why rejection hurts: A common neural alarm system for physical and social pain. *Trends in Cognitive Science, 8*, 294–300.
Eisenberger, N. I., & Lieberman, M. D. (2005). Why it hurts to be left out: The neurocognitive overlap between physical and social pain. In D. D. Williams, J. P. Forgas, & W. von Hippel (Eds.) *The social outcast: Ostracism, social exclusion, rejection, and bullying,* (pp. 109–130). New York: Psychological Press.
Eisenberger, N. I., Lieberman, M. D., & Williams, K. D. (2003). Does rejection hurt? An fMRI study of social exclusion. *Science, 302*, 290–292.
Faulkner, S. (1998). The aversive impact of ostracism on whistle-blowers. Unpublished dissertation, University of Toledo.
Fenigstein, A. (1979). Self-consciousness, self attention, and social interaction. *Journal of Personality and Social Psychology, 37*, 75–86.
Gaertner, L., Iuzzini, J., & O'Mara, E. M. (2008). When rejection by one fosters aggression against many: Multiple-victim aggression as a consequence of social rejection and perceived groupness. *Journal of Experimental Social Psychology, 44*, 958–970.
Gardner, W., Pickett, C. L., & Brewer, M. B. (2000). Social exclusion and selective memory: How the need to belong influences memory for social events. *Personality and Social Psychology Bulletin, 26*, 486–496.
Gardner, W. L, Pickett, C. L., & Knowles, M. (2005). Social snacking and shielding: Using social symbols, selves, and surrogates in the service of belonging needs. In K. D. Williams, J. P. Forgas, & W. von Hippel (Eds.) *The social outcast: Ostracism, social exclusion, rejection, and bullying*, (pp. 227–241), New York: Psychology Press.
Geller, D. M., Goodstein, L., Silver, M., & Sternberg, W. C. (1974). On being ignored: The effects of violation of implicit rules of social interaction. *Sociometry, 37*, 541–556.
Gerber, J., & Wheeler, L. (in press). On being rejected: A meta-analysis of experimental rejection research. *Perspectives On Psychological Science*.
Goodwin, S. A., Williams, K. D., & Carter-Sowell, A. R. (2007). *Reflexive and reflective responses to race-based ostracism in African Americans,* Presentation at the annual meeting of the Midwestern Psychological Association.
Gonsalkorale, K., Carter-Sowell, A. R., Sloan, L. R., & Williams, K. D. (2008). *The KKK won't let Tyrone play; but inclusion hurts too,* Presentation at the annual meeting of the Society for Personality and Social Psychology.
Gonsalkorale, K., & Williams, K. D. (2007). The KKK won't let me play: Ostracism even by a despised outgroup hurts. *European Journal of Social Psychology, 37*, 1176–1185.
Greenberg, J., Pyszczynski, T., & Solomon, S. (1986). The causes and consequences of the need for self-esteem: A terror management theory. In R. F. Baumeister (Ed.), *Public self and private self,* (pp. 189–212). New York: Springer.
Greenberg, J., Pyszczynski, T., Solomon, S., Rosenblatt, A., Veeder, M., Kirkland, S., & Lyon, D. (1990). Evidence for terror management theory II: The effects of mortality salience on reactions to those who threaten or bolster the cultural worldview. *Journal of Personality and Social Psychology, 58*, 308–318.
Greenberg, J., Solomon, S., Pyszczynski, T., Rosenblatt, A., Burling, J., Lyon, D., Simon, L., & Pinel, E. (1992). Why do people need self-esteem? Converging evidence that self-esteem serves an anxiety-buffering function. *Journal of Personality and Social Psychology, 63*, 913–922.

Gruter, M., & Masters, R. D. (1986). Ostracism as a social and biological phenomenon: An introduction. *Ethology and Sociobiology, 7*, 149–158.
Harris, J. C. (1948). The favorite Uncle Remus. Boston: Houghton Mifflin Company.
Haselton, M. G., & Buss, D. M. (2000). Error management theory: A new perspective on biases cross-sex mind reading. *Journal of Personality and Social Psychology, 78*, 81–91.
Haselton, M. G., & Nettle, D. (2006). The paranoid optimist: An integrative evolutionary model of cognitive biases. *Personality and Social Psychology Review, 10*, 47–66.
Insko, C. A., Schopler, J., Hoyle, R. H., Dardis, G. J., & Graetz, K. A. (1990). Individual-group discontinuity as a function of fear and greed. *Journal of Personality and Social Psychology, 58*, 68–79.
Jackson, J. M., & Saltzstein, H. D. (1957). The effect of person-group relationships on conformity processes. *Journal of Abnormal and Social Psychology, 57*, 17–24.
James, W. (1890). Principles of psychology, Vol. 1. New York: Dover Publications.
Jones, E. E., Carter-Sowell, A. R., Kelly, J. R., & Williams, K. D. (in press). What you don't know can hurt: Effects of being out of the loop. Group Processes and Intergroup Relations.
Karau, S. J., & Williams, K. D. (1993). Social loafing: A meta-analytic review and theoretical integration. *Journal of Personality and Social Psychology, 65*, 681–706.
Kerr, N. L., & Levine, J. M. (2008). The detection of social exclusion: Evolution and beyond. Group Dynamics: *Theory, Research, and Practice, 12*, 39–52.
Lakin, J. L., Chartrand, T. L., & Arkin, R. M. (2008). I am too just like you: Nonconscious mimicry as an automatic behavioral response to social exclusion. *Psychological Science, 19*, 816–822.
Langer, E. J., & Rodin, J. (1976). The effects of choice and enhanced personal responsibility for the aged. *Journal of Personality and Social Psychology, 34*, 191–198.
Latané, B. (1981). The psychology of social impact theory. *American Psychologist*, *36*, 343–356.
Latané, B., & Darley, J. (1970). *The unresponsive bystander: Why doesn't he help?* New York: Appleton-Century-Crofts.
Latané, B., Williams, K., & Harkins, S. (1979). Many hands make light the work: The causes and consequences of social loafing. *Journal of Personality and Social Psychology, 37*, 822–832.
Lawson Williams, H., & Williams, K. D. (1998). *Effects of social ostracism on desire for control,* Christchurch, NZ: Presented at Society for Australasian Social Psychology.
Leary, M. R. (2001). Interpersonal rejection, New York: Oxford University Press.
Leary. M. R., Haupt, A. L., Strausser, K. S., Chokel, J. T. (1998). Calibrating the sociometer: The relationship between interpersonal appraisals and state self-esteem. *Journal of Personality and Social Psychology, 74*, 1290–1299.
Leary, M. R., Kowalski, R. M., & Smith, L. (2003). Case studies of the school shootings. *Aggressive Behavior, 29*, 202–214.
Leary, M. R., Tambor, E. S., Terdal, S. K., & Downs, D. L. (1995). Self esteem as an interpersonal monitor: The sociometer hypothesis. *Journal of Personality and Social Psychology, 2*, 518–530.
Leary, M. R., Twenge, J. M., Quinlivan, E. (2006). Interpersonal rejection as a determinant of anger and aggression. *Personality and Social Psychology Review, 10*, 111–132.
Lieberman, J. D., Solomon, S., Greenberg, J., & McGregor, H. A. (1999). A new way to measure aggression: Hot sauce allocation. *Aggressive Behavior, 25*, 331–348.
MacDonald, G., & Jensen-Campbell, L. (in press). *Social pain: A neuroscientific, social, and health psychology analysis*, Washington DC: APA.
MacDonald, G., & Leary, M. (2005). Why does social exclusion hurt? The relationship between social and physical pain. *Psychological Bulletin, 131*, 202–233.
Maner, J. K., DeWall, C., & Baumeister, R. F. (2007). Does social exclusion motivate interpersonal reconnection? Resolving the 'porcupine problem.' *Journal of Personality and Social Psychology, 92*, 42–55.

Myoshi, K. (2001). Depression associated with physical illness. *Japanese Medical Association Journal, 44*, 279–282.
Nezlek, J. B., Kowalski, R. M., Leary, M. R., Blevins, T., & Holgate, S. (1997). Personality moderators of reactions to interpersonal rejection: Depression and trait self-esteem. *Personality and Social Psychology Bulletin, 23*, 1235–1244.
Nezlek, J., Wheeler, L., Williams, K., & Govan, C. (2004). *Ostracism in everyday life,* Austin, TX: Presented at the Society for Personality and Social Psychology.
Oaten, M. R., Williams, K. D., Jones, A., & Zadro, L. (2008). The effects of ostracism on self-regulation in the socially anxious. *Journal of Social and Clinical Psychology, 27*, 471–404.
Nadel, J., Prepin, K., & Okanda, M. (2007). Experiencing contingency and agency: First step toward self-understanding? In P. Hauf & F. Försterling (Eds.) *Making minds: The shaping of human minds through social context,* (pp. 227–240). Amsterdam: John Benjamins Publishing Company.
Peterson, C., Maier, S. F., & Seligman, M. E. P. (1993). Learned helplessness: A theory for the age of personal control. New York: Oxford University Press.
Pickett, C. L., Gardner, W. L., & Knowles, M. (2004). Getting a cue: The need to belong and enhanced sensitivity to social cues. *Personality and Social Psychology Bulletin, 30*, 1095–1107.
Pittman, T. S., & D'Agostino, P. R. (1989). Motivation and cognition: Control deprivation and the nature of subsequent information processing. *Journal of Experimental Social Psychology, 25*, 465–480.
Predmore, S., & Williams, K. D. (1983). The effects of social ostracism on affiliation. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago.
Rehbinder, M. (1986). Refusal of social cooperation as a legal problem: On the legal institution of ostracism and boycott. *Ethology and Sociobiology, 7*, 321–327.
Sacco, D., Wirth, J. H., Hugenberg, K., Chen, Z., & Williams, K. D. (2008). From the outside looking in: Social exclusion enhances the categorical perception of social information. Unpublished manuscript, Miami University, Oxford, OH.
Sebastian, C., Viding, E., Williams, K. D., Charman, T., & Blakemore, S. -J. (2008). *Affect regulation after social exclusion is still developing during adolescence,* Presented at the Cognitive Neuroscience Society Annual Meeting.
Schachter, S. (1951). Deviation, rejection, and communication. *Journal of Abnormal and Social Psychology, 46*, 190–207.
Schefske, E., Wirth, J. H., & Williams, K. D. (2008). *Number of sources and targets in the ostracism experience,* Chicago: Presented at the Midwestern Psychological Association.
Seligman, M. E. P. (1975). *Helplessness: On depression, development, and death,* San Franscisco, Freeman.
Sherif, M. (1966). In common predicament: Social psychology of intergroup conflict and cooperation. Boston: Houghton Mifflin.
Skinner, E. A. (1996). A guide to constructs of control. *Journal of Personality and Social Psychology, 71*, 549–570.
Smith, A., & Williams, K. D. (2004). R U there? Effects of ostracism by cell phone messages. *Group Dynamics: Theory, Research, and Practice, 8*, 291–301.
Smart Richman, L. S., & Leary, M. R. (2009). Reactions to discrimination, stigmatization, ostracism, and other forms of interpersonal rejection: A dynamic, multi-motive model, Duke University, Unpublished manuscript.
Snoek, J. D. (1962). Some effects of rejection upon attraction to a group. *Journal of Abnormal and Social Psychology, 64*, 175–182.
Sommer, K. L., Williams, K. D., Ciarocco, N. J., & Baumeister, R. F. (2001). Explorations into the intrapsychic and interpersonal consequences of social ostracism. *Basic and Applied Social Psychology, 23*, 227–245.
Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In L. Berkowitz (Ed.), *Advances in experimental social psychology,* (vol. 21, , pp. 261–302). New York: Academic Press.
Steinbeck J. (1945/1987). Of mice and men/Cannery row. New York: Penguin.

Swim, E., & Williams, K. D. (2008). *Does distraction following ostracism decrease aggression? The effects of rumination,* Chicago: Presented at the Midwestern Psychological Association.
Tedeschi, J. T. (2001). Social power, influence, and aggression. In J. P. Forgas & K. D. Williams (Eds.), *Social influence: Direct and indirect processes,* (pp. 109–128). New York: Psychology Press.
Tesser, A. (1988). Toward a self-evaluation maintenance model of social behavior. In L. Berkowitz (Ed.), *Advances in experimental social psychology,* (Vol. 21, pp. 181–227). San Diego, CA: Academic Press.
Twenge, J. M., Baumeister, R. F., DeWall, C. N., Ciarocco, N. J., & Bartels, J. M. (2007). Social exclusion decreases prosocial behavior. *Journal of Personality and Social Psychology, 92*, 56–66.
Twenge, J. M., Baumeister, R. F., Tice, D. M., & Stucke, T. S. (2001). If you can't join them, beat them: Effects of social exclusion on aggressive behaviors. *Journal of Personality and Social Psychology, 81*, 1058–1069.
Twenge, J. M., Catanese, K. R., & Baumeister, R. F. (2003). Social exclusion and the deconstructed state: Time perception, meaningless, lethargy, lack of emotion, and self-awareness. *Journal of Personality and Social Psychology, 85*, 409–423.
Van Beest, I., van Dijk, E., & Williams, K. D. (2008). Reflexive and reflective reactions to social exclusion: On tossing bombs and tossing balls, Unpublished manuscript. Leiden University, The Netherlands.
Van Beest, I., & Williams, K. D. (2006). When inclusion costs and ostracism pays, ostracism still hurts. *Journal of Personality and Social Psychology, 91*, 918–928.
Warburton, W. A., Williams, K. D., & Cairns, D. R. (2006). When ostracism leads to aggression: The moderating effects of control deprivation. *Journal of Experimental Social Psychology, 42*, 213–220.
Wesselmann, E., Williams, K. D., & Pickett, C. L. (2007). *Blindsided by rejection: Thwarting predictive control can increase aggression.* Chicago, IL: Presented at the Midwestern Psychological Association.
Wheaton, A. (2001). Ostracism and susceptibility to the overtures of socially deviant groups and individuals Unpublished honors thesis, Macquarie University. Sydney, NSW.
Williams, K. D. (1997). Social ostracism. In R. M. Kowalski (Ed.), *Aversive interpersonal behaviors* (pp. 133–170). New York: Plenum.
Williams, K. D. (2001). *Ostracism: The power of silence*. New York: Guilford Press.
Williams, K. D. (2005). *Control moderates the ostracism-aggression link.* San Diego, CA: Presented at the Society of Experimental Social Psychology.
Williams, K. D. (2007a). Ostracism. *Annual Review of Psychology, 58*, 425–452.
Williams, K. D. (2007b). Ostracism: The kiss of social death. *Compass: Social and Personality Psychology, 1*, 236–247.
Williams, K. D., Cheung, C., & Choi, W. (2000). Cyberostracism: Effects of being ignored over the Internet. *Journal of Personality and Social Psychology, 79*, 748–762.
Williams, K. D., Forgas, J. P., & von Hippel, W. (2005). *The social outcast: Ostracism, social exclusion, rejection, and bullying.* New York: Psychology Press.
Williams, K. D., Govan, C. L., Croker, V., Tynan, D., Cruickshank, M., & Lam, A. (2002). Investigations into differences between social and cyberostracism. *Group Dynamics: Theory, Research, and Practice, 6*, 65–77.
Williams, K. D., & Jarvis, B. (2006). Cyberball: A program for use in research on ostracism and interpersonal acceptance. *Behavior Research Methods, Instruments, and Computers, 38*, 174–180.
Williams, K. D., & Nida, S. A. (2005). Obliviously ostracizing singles. *Psychological Inquiry, 16*, 127–130.
Williams, K. D., Shore, W. J., & Grahe, J. E. (1998). The silent treatment: Perceptions of its behaviors and associated feelings. *Group Processes and Intergroup Relations, 1*, 117–141.

Williams, K. D., & Sommer, K. L. (1997). Social ostracism by one's coworkers: Does rejection lead to loafing or compensation? *Personality and Social Psychology Bulletin, 23*, 693–706.

Williams, K. D., Wheeler, L., & Harvey, J. (2001). Inside the social mind of the ostracizer. In J. Forgas, K. Williams, & L. Wheeler (Eds.) *The social mind: Cognitive and motivational aspects of interpersonal behavior* (pp. 294–320). New York: Cambridge University Press.

Williams, K. D., & Zadro, L. (2001). Ostracism: On being ignored, excluded, and rejected. In M. R. Leary (Ed.), *Interpersonal rejection* (pp. 21–53). New York: Oxford University Press.

Williams, K. D., & Zadro, L. (2005). Ostracism: The indiscriminate early detection system. In K. D. Williams, J. P. Forgas, & W. von Hippel (Eds.) *The social outcast: Ostracism, social exclusion, rejection, and bullying.* (pp. 19–34). New York: Psychology Press.

Winten, L., Zadro, L., Oaten, M., Jones, A., Richardson, R., Wyland, C., & Williams, K. D. (2008). *''There's no aphrodisiac like loneliness'': The effects of ostracism on romantic affiliation,* Melbourne: Presented at the Fifth Annual Conference of the APS Psychology of Relationships Interest Group.

Wirth, J., Sacco, D., & Hugenberg, K. (2008). *Look into my eyes, you might get ostracized! Averted eye gaze results in ostracism,* Chicago, IL: Presented at the Annual Convention of the Association of Psychological Science.

Wirth, J., & Williams, K. D. (in press). ''They don't like our kind'': Consequences of being ostracized while possessing a group membership. *Group Processes and Intergroup Relations.*

Wortman, C. B., & Brehm, J. W. (1975). Responses to uncontrollable outcomes: An integration of reactance theory and the learned helplessness model. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 8, pp. 277–336). San Diego, CA: Academic Press.

Zadro, L. (2004). Ostracism: Empirical studies inspired by real-world experiences of silence and exclusion. Unpublished doctoral dissertation. University of New South Wales, Sydney, NSW.

Zadro, L., Arriaga, X. B., & Williams, K. D. (2008a). Relational ostracism. In J. P. Forgas & J. Fitness (Eds.), *Social relationships: Cognitive, affective, and motivational processes* (pp. 305–320). New York: Psychology Press.

Zadro, L., Boland, C., & Richardson, R. (2006). How long does it last? The persistence of the effects of ostracism in the socially anxious. *Journal of Experimental Social Psychology,* 692–697.

Zadro, L., Fink, E., Richardson, R., Griffiths, B., Dadds, M., Hawes, D., & Williams, K. D. (2008b). Ostracism and children: Does being ignored affect children's primary needs and working memory? The 2nd International Congress on Interpersonal Acceptance and Rejection, Greece.

Zadro, L., Williams, K. D., & Richardson, R. (2004). How low can you go? Ostracism by a computer lowers belonging, control, self-esteem, and meaningful existence. *Journal of Experimental Social Psychology, 40*, 560–567.

Zadro, L., Williams, K. D., & Richardson, R. (2005). Riding the 'O' train: Comparing the effects of ostracism and verbal dispute on targets and sources. *Group Processes and Interpersonal Relations, 8*, 125–143.

Zhong, C. -B., & Leonardelli, G. J. (2008). Cold and lonely: Does social exclusion literally feel cold? *Psychological Science, 19*, 838–842.

Zuckerman, M., Miserandino, M., & Bernieri, F. (1983). Civil inattention exists – in elevators. *Personality and Social Psychology Bulletin, 9*, 578–586.