Des spirales se renforçant : l'influence mutuelle de la sélectivité médiatique et des effets médiatiques et leur impact sur le comportement individuel et l'identité sociale

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Résumé

On peut s'attendre à ce que les conséquences, sur l'attitude et le comportement, de l'usage des médias influencent la sélection du contenu médiatique et l'attention portée à celui-ci. Ce processus peut être conceptualisé à l'image de spirales qui se renforcent mutuellement, telles les chaînes de rétroaction positive dans la théorie générale des systèmes. Cette perspective des spirales se renforçant met en évidence le besoin de modélisation longitudinale de l'influence réciproque de la sélection médiatique et des processus d'effets; d'étude de l'impact de tels processus dans le développement de l'identité des jeunes et des adolescents; et d'analyse des facteurs sociaux et psychologiques qui contrôlent, freinent ou, finalement, annulent l'influence de telles spirales. Cette perspective pourrait aussi, d'un point de vue plus théorique, être étendue de façon à aborder le maintien de l'identité sociale pour des groupes politiques, religieux ou liés par un style de vie. La pertinence d'un modèle de spirales se renforçant pour les théories telles la spirale du silence, la fonction d'agenda, le cadrage, la cultivation, l'attention sélective et les usages et la gratification est également discutée.

Reinforcing Spirals: The Mutual Influence of Media Selectivity and Media Effects and Their Impact on Individual Behavior and Social Identity

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Es ist anzunehmen, dass einstellungs- oder verhaltensbezogene Folgen von Mediennutzung wiederum einen Einfluss auf die Selektion und Aufmerksamkeit auf bestimmte Medieninhalte haben können. Dieser Prozess kann als eine sich wechselseitig verstärkende Spirale beschrieben werden, ähnlich positiver Feedback-Schleifen in der allgemeinen Systemtheorie. Diese Perspektive sich verstärkender Spiralen betont die Notwendigkeit, Längsschnittmodellierungen von sich gegenseitig beeinflussenden Medienselektions- und Medienwirkungsprozessen aufzustellen; den Einfluss dieser Prozesse im Rahmen von kindlicher und jugendlicher Identitätsentwicklung zu untersuchen und zu eruieren, welche sozialen und psychologischen Faktoren den Einfluss dieser Spiralen kontrollieren, herabsetzen oder sogar auslöschen können. Diese Perspektive kann auch dahingehend erweitert werden, die Aufrechterhaltung sozialer Identität von politischen, religiösen oder Lebensstil- Gruppen zu untersuchen. Abschließend wird die Relevanz dieses Spiralmodels für die Theorie der Schweigespirale, die Agenda-Setting-These, Framing, Kultivierung, selektive Wahrnehmung sowie Uses-and-Gratifications diskutiert.

Reforzando los Espirales: La Influencia Mutua de la Selectividad y los Efectos de los Medios y el Impacto sobre el Comportamiento Individual y la Identidad Social

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Resumen

Los resultados actitudinales ó de comportamiento del uso de los medios puede esperarse que influya en la selección y atención al contenido de los medios. Este proceso puede ser conceptualizado en términos de espirales que se refuerzan mutuamente, semejantes al feedback positivo en la teoría general de sistemas. Esta perspectiva de espirales reforzados subraya la necesidad de un modelo longitudinal de influencia mutua en la selección de los medios y los procesos de efecto; el estudio del impacto de esos procesos en el desarrollo de la identidad de los jóvenes y adolescentes; y el análisis de los factores sociales y sicológicos que controlan, reducen, ó eventualmente extinguen esos espirales. Esta perspectiva puede ser extendida también, más especulativamente, para atender el mantenimiento de identidades sociales para los grupos políticos, religiosos, y de estilo de vida. La relevancia del modelo de refuerzo de espirales en teorías como por ejemplo, el espiral del silencio, la agenda-setting, el framing, la cultivación, la atención selectiva, y los usos y gratificaciones es discutida también.

加强螺旋：媒介选择和媒介效应的相互作用及对个人行为和社会身份的影响

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摘要

媒介应用所产生的态度和行为结果可影响对媒介内容的选择和注意力。我们可将这一过程构思为互相加强的螺旋，类似于系统理论中的正面反馈环。该加强螺旋概念显示了建立媒介选择和效应相互作用长期模式的重要性，讨论了媒介选择及效果对青少年身份发展的影响，并分析了控制、弱化及完全清除螺旋影响之社会和心理因素。可以想象该观点也可应用于研究各类政治、宗教和生活方式群体的社会身份维护。本文也探讨了加强螺旋模式及其他理论，比如沉默的螺旋、议程设置、框架理论、涵化理论、选择性注意力、使用与满足等的相关性。

재강화된 나선형 이론: 미디어 선택과 미디어 효과들의 상호 영향들, 그리고

개인적인 행위와 사회적 동질성에 미친 이들의 영향에 관한 연구

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요약

미디어 사용의 태도적 또는 행위적 결과들은 미디어 내용에 대한 주목과

미디어 내용의 선택에 영향을 줄 것으로 기대될 수 있다. 이 과정은

상호적으로 재강화된 나선형—일반적 시스템이론에서의 긍적적 피드백

형태와 유사한—으로 개념화될 수 있다. 이 재강화 나선형개념은 상호적으로

영향력있는 미디어 선택과 효과 과정들의 종적모델을 위한 필요, 청소년들의

동질성 발전에 있어 그러한 과정들의 영향에 대한 연구, 그리고 이러한

선형들의 영향을 통제하고, 깊이있게 하고, 또는 궁극적으로 소멸하게 하는

사회적 심리적 영향들의 분석을 강조하고 있다. 이 전망은 또 정치적, 종교적

그리고 라이프 스타일 집단들을 위한 사회적 동질성의 유지를 논의하는데도

확대 적용될 수 있다. 재강화 나선형모델의 여러 이론들에 대한 관련성, 즉

침묵의 나선형 이론, 아젠다 형성, 프레이밍, 선택적 주의 이론, 그리고

이용과 충족이론에 대한 관련 여부를 논의하였다.

ORIGINAL ARTICLE

Reinforcing Spirals: The Mutual Influence of Media Selectivity and Media Effects and Their Impact on Individual Behavior and Social Identity

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The attitudinal or behavioral outcomes of media use can be expected to influence selection of and attention to media content. This process can be conceptualized in terms of mutually reinforcing spirals akin to positive feedback loops in general systems theory. This reinforcing spirals perspective highlights the need for longitudinal modeling of mutually influencing media selection and effects processes; study of the impact of such processes in youth and adolescent identity development; and analysis of social and psychological factors that control, dampen, or eventually extinguish the influence of such spirals. This perspective may also, more speculatively, be extended to address the maintenance of social identity for political, religious, and lifestyle groups. The relevance of a reinforcing spirals model to theories including spiral of silence, agenda-setting, framing, cultivation, selective attention, and uses and gratifications is also discussed.

Researchers in communication, psychology, sociology, and allied social science disciplines have established strong empirical support for effects of media use on aggression (Anderson & Bushman, 2002), fears about the social world (Gerbner, Gross, Morgan, Signorielli, & Shanahan, 2002), political behavior (Graber, 2002), and a wide variety of other outcomes (see Bryant & Zillman, 2002 for a review). Similarly, there is a rich body of literature documenting the reasons people select and use media channels, genre, and content (Kim & Rubin, 1997; Zillman & Bryant, 1985). Surprisingly, however, there has been limited systematic effort to synthesize the process of media selection and media effects into a more comprehensive model, though the potential value of such efforts have been previously noted (Rubin, 2002; Windahl, 1981).

The present paper proposes what I will refer to as a *reinforcing spirals* framework for understanding media selectivity and effects as dynamic, mutually influencing

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processes. This framework is intended to help explain the influence of mediated communication on socialization and, more speculatively, on development and maintenance of political, religious, and lifestyle subcultures in contemporary societies. I therefore outline the basic propositions of this reinforcing spirals framework; acknowledge earlier discussions that share, at least implicitly, some of the same propositions (e.g., Price & Allen, 1990); and suggest some ways the framework might be used to help understand important social phenomena.

A reinforcing spirals approach to understanding media use and effects at the individual level

Media use as endogenous

As studies of audience selectivity and uses and gratifications tell us, media content, channel, and genre choices are a function of a person's age, gender, disposition, prior experience, mood, ideology, social influences, and social identity (Zillman & Bryant, 1985). Such media-use variables, then, are endogenous—that is, subject to the influence of causally prior variables. Conversely, as noted above, there is ample evidence for effects of media-use variables on beliefs, attitudes, and behavior—the components of personal and social identity—even after controlling for these prior influences.

From a theoretical perspective, the role of media-use variables, then, is typically an intervening one. In statistical terms, media-use variables should mediate or partially mediate (Baron & Kenny, 1986) the influences of individual-difference variables such as age, gender, education, prior experience, and interests on cognitive or behavioral outcomes. For example, a study of social risk judgments in a nationally representative population sample ($N = 1,272$) demonstrated that media-use variables accounted for about 25% ($p < .05$) of the negative relation between education and risk judgments, 45% ($p < .001$) of the negative relation between sensation-seeking and risk judgments, and over 50% ($p < .01$) of the positive relation between female gender and risk judgments (Slater & Rasinski, 2005). Stated more formally:

> Proposition 1: In most media effects contexts, the role of media can be modeled as endogenous, mediating, or partially mediating the effect of other individual-difference variables on the outcomes of interest.

This is not an assertion that every study of media effects should analyze media-use variables such as exposure or attention as mediators rather than as exogenous variables. Sometimes, the endogeneity of media use simply is not of theoretical or practical interest. Moreover, analyzing media use as endogenous can be clumsy when other mediators are the primary focus of research attention. One would be forced to account for multiple mediation steps within the same model. If this multistep mediation is not of theoretical interest in a given context, the resultant complexity would be hard to justify. Rather, Proposition 1 suggests that the fullest and most accurate depiction of a media effects process can typically best be modeled by assessing both selectivity and effects within the same analysis.

Media selectivity and effects as structured, dynamic processes

Mediation of the kind described above is for some phenomena an excessively simple formulation of the relationship between media selectivity and media influence processes. For example, in assessing media effects on adolescent aggression, Proposition 1 would suggest a model in which exogenous, external, independent variables such as gender, age, substance use, and prior victimization predict both aggression and use of violent media content. The media-use variables, in turn, would partially account for the relationship between the exogenous variables and aggression, as well as perhaps providing an independent contribution of their own.

However, it is also probable in many contexts that media use is predicted by the outcome of interest. In this example, an adolescent's aggressiveness is likely to predict use of violent media in addition to being impacted by it (Slater, Henry, Swaim, & Anderson, 2003). Similar examples may be found in domains such as the use of sexual media content (Steele & Brown, 1995). As is argued in more detail below, this pattern of communicative choice, and the effects of such choice, is likely to play an important role in the development of personal and social identity. In either case, we would expect:

> Proposition 2: Cognitive or behavioral outcomes of media use also influence media use, particularly when the cognitions or behaviors are related to personal or social identity.

This notion that together media selectivity and media effects form a reciprocal, mutually influencing process is noted or implied, though not extensively developed, in a variety of classic sources. For example, Klapper's classic review of media effects research argued that media content most often serve to reinforce existing beliefs (Klapper, 1960). In building this argument, he cited a community study (Berelson, Lazarsfeld, & McPhee, 1954) with results suggesting not only that political campaign content primarily reinforced existing beliefs but also that increased exposure to the campaign led to selective exposure to media content consistent with their beliefs.

Another classic review suggests that effects of television viewing may lead to additional information seeking from television regarding behaviors affected (Comstock, Chaffee, Katzman, McCombs, & Roberts, 1978). More recently, Brown (2000) argues that the sexual content in media may increase interest in sexuality, which, in turn, stimulates further interest in sexual content as well as increasing the likelihood of sexual activity among adolescents. It should be noted at this point that content of any given genre or type—sexual, violent, religious, political—is not uniform; in most cases, there are probably subtypes with distinctive content and effects. Moreover, various types and exemplars of media content will vary in appeal to various audiences, though presumably audiences will tend to select content that they find appealing and believable. Such content-specific effects, however, are best addressed in studies and discussions specific to a given media genre and are beyond the scope of the present discussion.

Acknowledging the reciprocal nature of selectivity and media effects is an important starting point in understanding the relationship between the two. However, the

concept of reciprocity can be misleading. Causal relationships, as we will discuss in more detail below, do not go back and forth as the term *reciprocal* implies. These relationships move forward in time, influencing one another, with the likelihood of reinforcing or cumulative effects.

Accordingly, it is a relatively straightforward matter to specify the minimum assumptions of such a reciprocal relationship, as it must occur dynamically over time. Exposure at baseline must lead to an effect at Time 2 that influences exposure at Time 3; simultaneously, the status of the effect at baseline should lead to exposure at Time 2 leading to the effect at Time 3:

> Proposition 3: The assertion of reciprocal relationships between media use and effects
>   of such media use in its simplest case implies a three-step, cross-lagged process
>   (see Figure 1).

Calling a causal association a reciprocal relationship, with at minimum the features illustrated in Figure 1, raises more questions than it answers. As is detailed below, these questions include the length of time lag, differences in time lag for various paths, relative strength of paths, the identification of those social or psychological forces that may restrain or limit the mutual influence process, and exploring the social and cultural implications of these patterns.

Reinforcing spirals and their outcomes

It should be apparent from Figure 1 that if (a) some type of media use influences corresponding beliefs or behaviors (e.g., support for strong controls over illegal immigration or aggressiveness) and (b) that belief or behavior in turn increases that type of media use (e.g., listening to conservative radio talk shows or seeking violent
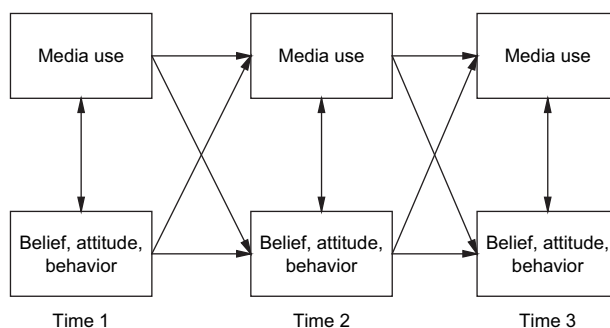

Figure 1 A minimal path representation of reinforcing spirals. Note that while prospective prediction is normally of primary interest, a wide variety of alternative and indirect paths exist. Concurrent paths can be conceptualized as correlations (or correlated disturbance terms) or as directional paths subject to problems of identification; concurrent paths should be conceptualized as time-ordered but with lags too small to measure in a given research design.

media content), then (c) the process should be mutually reinforcing over time. Persons engaging in this process should tend toward continued or increased use of that particular media content. This should lead to the maintenance or strengthening of the attitude or behavior in question, leading in turn to continued or increased use of relevant media content. Whether one takes media use or selectivity effects as a starting point, then, reciprocal effects over time can be conceptualized or visualized as a spiral of ongoing influence.

One weakness of spirals as an image is that they illustrate prospective relationships with a single starting point, suggesting that one variable is the first cause. As Figure 1 suggests, one can usefully conceptualize and analyze these relationships as two paired and complementary spirals. One spiral begins with the outcome predicting media use and the other spiral begins with media use predicting the outcome. This permits portrayal of concurrent influences as well as of prospective ones. Concurrence is simply a convenient way to represent causal influences when the lag is too short to be measured.

Two recent lines of work have exemplified the spirals of selectivity and effects approach to understanding media effects. Recent work on violent media content and adolescent aggressiveness (Slater et al., 2003) found that use of such content was predictive of adolescent aggressiveness, $\beta = .046$ (.013), $p < .001$, explaining over 10% of variability after inclusion of controls. Analyses were conducted using a four-wave panel data set of middle school students from around the United States over a 2-year period ($N = 2,550$). Aggressiveness also prospectively predicted use of violent media content, $\beta = .043$ (.018), $p < .05$, explaining about 6.5% of variability after inclusion of controls.

In the same study, a stricter model was also imposed, looking only at effects of fluctuations from a youth's own mean over-time trend in violent media content use or aggressiveness. In this analysis, when an individual's violent media content use was higher than his or her age-adjusted trend line, it was prospectively predictive of greater aggressiveness, $\beta = .034$ (.016), $p < .05$. The opposite path (from higher than personal norm aggressiveness to higher violent media content use) was concurrently significant, though it did not reach significance prospectively (Slater et al., 2003). These authors referred to this pattern of mutual reinforcement as a "downward spiral model."

Another study of a two-wave national panel data set ($N = 3,888$ at baseline) found Wave 1 news attention ($\beta = .11$, $p < .01$) and elaboration ($\beta = .08$, $p < .01$) predicted political knowledge at Wave 2 (Eveland, Shah, & Kwak, 2003). However, evidence for such relationships was also found in the other direction. Coefficients of $\beta = .14$, $p < .01$ for knowledge at Wave 1 predicted news attention at Wave 2 and $\beta = .13$, $p < .01$ for Wave 1 knowledge predicted Wave 1 news elaboration.

Eveland and his colleagues noted that as this pattern repeated over time, attention would be decreased and future knowledge and interest would be lower for those with little political knowledge and interest. They also referred to this as a downward spiral process. Conversely, for those with greater initial political interest, upward spirals of news attention and political knowledge might be expected. The authors

proposed that this mechanism might help explain knowledge gaps with respect to political information.

Building on the work of Eveland and others, Schneider (2006) has proposed a similar dynamic, spiral model for use of political media. His preliminary tests ($N = 100$ across three waves of data collection with German adults during a statewide election) suggest that motivations such as surveillance and anticipated communication with others both predict and are subsequently predicted by political media use. While the model for anticipated communication (RMSEA = 0.08, $\chi^2 = 28.03$, $p = .03$, $df = 16$, GFI = 0.94) was only marginally satisfactory, the model for the surveillance motivation (RMSEA = 0.02, $\chi^2 = 17.38$, $p = .36$, $df = 16$, GFI = 0.96) fit the proposed spiral model well.

Conceptual and methodological issues in the study of reinforcing spirals at the individual level

Identifying lag times and possible asymmetry of spirals, and other key research questions
A number of issues relevant to describing the distinctive patterns of various spirals of media selectivity and effects have been noted. Principal among these are the nature of the time lags themselves. Typically, panel research designs must choose time lags based on the logistics of staffing and data collection. Another consideration is the sensible desire to minimize the sensitization that would likely result from closely repeated data collection points.

Unfortunately, such lags often are months apart at best. The effect of mediated stimuli such as advertisements on behavior likely is far shorter lived than this, and therefore detectable primarily as cross-sectional associations in traditional longitudinal studies. Similarly, transient changes in emotional states such as anger or aggression may have immediate effects on media content choice that do not necessarily show up as lagged effects (Slater et al., 2003).

Therefore, the fact that one has longitudinal data is no guarantee that one can detect spiral processes if the measurement lags do not reflect a good understanding of the underlying processes. For example, Price and Allen (1990) suggested that processes of social norm change can be expected to take years to unfold. In contrast, a study of the mutually reinforcing relationships between perceived efficacy and performance assessed four trials in a period of 2 hours (Shea & Howell, 2000). Clearly, the longitudinal design must fit the phenomenon under study.

Another aspect of the problem of lag to effect is the likelihood that the two types of effects driving spirals of mutual reinforcement do not have the same duration to effect. Some outcomes of media use, such as those due to information gain or social modeling, may have more lasting effects. In contrast, effects such as the impact of an attitude or behavior (especially ones that are not highly stable over time) on media selection are likely to be more immediate. Such a pattern would show up as asymmetric spirals, in which the selectivity paths were concurrent, but effects of media use might also be detectable in lagged analyses (as described in Slater et al., 2003).

There are, then, a series of questions that arise with respect to studying the reinforcing relationships of media selectivity and effect. What is the appropriate lag in assessing prospective effects of selectivity, and what is the appropriate lag for assessing prospective effects of media content? What is the comparative strength of each path (i.e., effect of selectivity vs. effect of media content)? How stable are these paths over time? What are the moderators of such effects? That is, for whom or under what circumstances are selectivity and effects patterns evident or nonexistent? For whom do these patterns show up as cumulative and strengthening, constant, or weakening over time? Some of these questions can be answered by using both traditional and new methodological tools.

Analyzing reinforcing spirals of selectivity and effects: Old and new methodological tools
A full discussion of statistical methods for probing such spirals of mutual reinforcement is beyond the scope of this paper. However, some useful approaches and alternatives should be acknowledged, at least in brief. This is particularly important because any analysis of mutual influence is inherently difficult, and emergence of newer statistical techniques has made possible more sophisticated and complete analyses of these relationships.

Figure 1 illustrates a three-wave, cross-lagged model. Autoregressive cross-lagged regression or structural equation analyses, the traditional methods for analyzing such models, have been strongly criticized (Rogosa & Willett, 1985) in favor of latent growth models. However, other scholars have pointed out that cross-lagged analyses, while involving more restrictive assumptions than growth modeling methods, can be appropriate and informative (Curran & Bollen, 2001). Structural equation models that use chi-square difference tests to examine the incremental contribution of each lag (Bentler, 1990) in a cross-lagged model provide a straightforward and easily interpreted approach to testing spirals predictions. Moreover, such modeling can also include examinations of various asymmetric alternatives still consistent with influence spirals.

Another approach is use of multilevel models to analyze panel data (Raudenbush & Bryk, 2002), as was done in the Slater et al. (2003) studies discussed earlier. Recently, software packages such as M-plus (Muthen & Muthen, 1998–2004) have combined capabilities of multilevel and structural equation modeling, permitting use of growth modeling despite varying data collection periods. This approach involves estimating growth intercepts and slopes for both selectivity and effects paths using latent growth models, and testing paths linking those intercepts and slopes. Such an analysis has been conducted for the relationship of movie viewership and sensation seeking (Stoolmiller & Worth, 2006).

A latent-difference score approach to such models has also been proposed (Ferrer & McArdle, 2003). This approach appears promising, but it has not been widely used or replicated as yet. Another intriguing approach, with particular promise for studying nearly concurrent phenomena utilizing dynamic stochastic modeling, has recently been proposed (Wang, Busemeyer, & Lang, 2006).

Tapping systems theory vocabulary to discuss dynamic processes of mutual influence
The present discussions of spirals of communicative influences can be extended by the use of cybernetic and systems theory concepts and vocabulary. Cybernetics and systems theories provide a vocabulary intended to describe processes of mutual influence and reinforcement over time in dynamic systems (von Bertalanffy, 1968; Wiener, 1961). While a full review of general systems theory is beyond the scope of this article, several key concepts will be employed in the discussion that follows.

A primary concern of cybernetics and systems theories is the extent to which a dynamic system is self-regulating over time. A self-regulating system adjusts to external changes and tends to reach homeostasis; a thermostat is the classic example of such an adjusting system. This self-regulating adjustment is called a *negative feedback loop*. Mutually reinforcing processes, as opposed to self-regulating processes, might be expected to spin out of control or move to some extreme value— *a positive feedback loop*. It should be noted that a loop is a graphic convenience for illustrating a process ignoring the time dimension; if time-ordered processes are illustrated, a loop would presumably tend to be illustrated instead in a way similar to Figure 1.

Other key systems theory concepts are the extent to which a system is *open* or *closed*. A closed system is not influenced by factors external to the system. The implication of this is that in a closed system, positive feedback loops are likely to move to some extreme value. To the extent a system is not closed, external forces may provide the regulatory pressures that keep a mutually influencing process in check. The larger system may be, then, homeostatic despite the existence of a mutual influence process within it. Implications of these points are developed in detail below.

To restate this more formally, in a closed system, a positive feedback loop—or spirals of media selectivity and effects as illustrated in Figure 1—should produce the following:

> Proposition 4A: In a perfectly closed system (free from the effects of competing social, psychological, or environmental influences), the spirals of media selectivity and effects should work to maximize use of a given type of media to the maximum permitted by available time and access, and to maximize levels of the cognitions or behaviors impacted to those levels permitted by available capacity.

However, in the social world, there are always competing social, psychological, and environmental influences present. They may be thought of as present to the degree that the social environment in which the individual lives is open or closed. A complementary proposition can be more formally stated:

> Proposition 4B: Social subsystems in which media effect processes take place vary in the extent to which they are open or closed along various dimensions; none are fully closed, and reinforcing spirals of media selectivity and effects are limited by environmental or other constraints.

Moderating effects, dampening positive feedback loops, and achieving homeostasis in dynamic media use–media effects mutual influence processes

Among the most important questions related to spirals of media use and effects are those that examine the factors that limit these feedback loops. Why does this mutually reinforcing process usually not lead to extreme outcomes for most media consumers?

In many cases, of course, it is relatively easy to suggest moderating influences. With regard to violent media content use and violence, moderating environmental factors presumably include family, peer, and institutional or legal consequences for aggressive behavior. Internal factors may include maturation and assumption of social roles that lead to reduced consumption of such media and reduced expression of aggression, habituation to violent media stimuli, and beliefs and values internal-ized from other sources, mediated and unmediated, inconsistent with enacting aggression. In addition, habituation may mean that effects of increasing dosage are not linear, tempering cumulative effects. Steele (1999), in an extensive qualitative study of teenage sexuality and media use, describes how ethnicity, gender, class, and maturation moderate media choices, the role of media use and media content in adolescent's lives, and the corresponding influence of such media.

Such limiting processes also were evidenced by a quantitative study of moderators of the relationship between violent media content and aggression. Using the same data set of adolescent use of violent media content (Slater, Swaim, Henry, Cardador, 2004) described above, researchers found that this relationship was strengthened among adolescents who were particularly vulnerable, as a function of disposition or social situation, to mediated influence. Examples include high-sensation seekers who likely have less inhibition about enacting risky behavior and youth who tended to be bullied (Slater et al., 2004). Conversely, one might suggest that for youth who were more integrated into the larger social world, the effects of violent media content were lessened and the potential impact of the spirals of media use and effect reduced or eliminated.

It also should be recalled that effects of exposure to types of media content at any one point of assessment tend to show relatively small effect sizes (see Anderson & Bushman, 2002). The pattern of mutual reinforcement between media selectivity and effect, then, may often simply prevent competing social or maturational influences from extinguishing an attitudinal or behavioral pattern. The pattern of mutual reinforcement between selection of media content and the effects of such content, then, will rarely lead to extremes of attitude or behavior. Instead, this pattern may result in the maintenance of various attitudes or behaviors for users of specific media content despite competing influences. The factors that limit the impact of the process (e.g., habituation to stimuli, social influence of institutions or peers) may be studied using tests of moderation.

A focus on moderation also suggests that there may be circumstances under which the outcome of spiral processes of selectivity and effects is more dramatic. For the individual, as suggested above, this may be when the person (a) is poorly integrated or socialized or is dispositionally vulnerable; (b) is involved with peer associates that share the same patterns of attitude, behavior, and use of media (so

that spiral selectivity and effects processes with respect to media may also be found with respect to interpersonal association and communication); and/or (c) is in a larger social environment where the pattern of attitude and behavior has substantial support, so there is less external pressure to reduce spiral effects.

Reinforcing spirals and maintenance of social identity

The above discussion focuses on the effects of reinforcing spirals on individual media consumers. The section that follows will explore some ways in which mutually reinforcing processes of communication selectivity and effects may influence social identity and attitudes as well as the behaviors of group members. It should be noted at the outset that there is little research of which I am aware that directly tests how such processes may operate in the context of social or political identity. Therefore, the discussion is of necessity more speculative than the discussion of individual-level processes. Evidence is based primarily on consistency with descriptive and qualitative research rather than support from direct quantitative tests.

Media: The role of selectivity in the maintenance of distinctive social identities

Both Tajfel and Turner's (1986) social identity theory (SIT) and Hecht's (1993) communicative theory of identity suggest that a primary human tendency is to define one's identity in large measure through actual or symbolic perceived affiliation with others who share similar experiences, perceptions, and values. Tajfel and Turner distinguish between *personal identity* and *social identity*. Personal identity refers to identity elements that are idiosyncratically individual (the major focus of the prior section) and social identity refers to identity elements that are derived from identification with social groups (e.g., religious, ideological, or lifestyle groups), which will be discussed in more detail below.

Being a member of a religion, a political ideology, a race, or a lifestyle—what Hecht (1993) refers to as *communal identity*—transcends interpersonal associations and is likely to require some sort of mediated dimension to link members through time and space. This mediated dimension may involve texts, scriptures, newspapers or newsletters, preferred radio shows or news networks, television programming, or Web sites and listservs (see Abrams, Eveland, & Giles [2003] for a similar argument; Price & Allen [1990] for a detailed and theoretically rich analysis of selectivity effects on sustaining communities of political opinion; Reid, Giles, & Abrams [2004] for a discussion of media, social identity, and social change; and Harwood [1999] for a study of media selectivity based on social identity gratifications). In the context of societies with varied media content and outlets, it seems reasonable to expect that:

> Proposition 5: In general, those individuals who identify with a given set of religious, ideological, or lifestyle beliefs and values (i.e., a shared group or communal identity) will have certain preferred media outlets, and will selectively attend to content that reflects and shares the values of that social identity group.

SIT highlights the importance of social group categorization in order to make sense of the social world and our place in it (Tajfel & Turner, 1986; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). It is likely, then, that insights about a religious, ideological, or lifestyle identity may be gleaned by analyzing the social categories and attributes for category members—both "in-group" and "out-group"—communicated in such preferred media content.

SIT also emphasizes the importance of the extent to which people identify themselves with any given social category, given that any one individual has many possible social identities (e.g., Methodist, conservative, mother, student, avid gardener, fishing enthusiast, Hoosier). If so, one effect of media use consistent with a given social group identity may be an increase in the salience of that identity relative to alternative available identities. Attitude accessibility theory (e.g., Fazio & Williams, 1986; Sanbonmatsu & Fazio, 1990) suggests that attitudes are influential to the extent they are available in memory at a given point in time, and social categorization theory emphasizes the importance of the social identity prototype that is primed in a given judgment situation (Turner et al., 1987). To the extent that a social identity is associated with a variety of beliefs, values, and attitudes, we may derive:

> Proposition 6: Use of media content consistent with a given social identity will result in greater (a) salience or accessibility of that social identity and (b) influence of values and attitudes associated with that identity in assessments and decisions, at least briefly, after such media exposure.

Therefore, accessibility or salience mechanisms may help explain spiral processes of mutual reinforcement over time. Relevant media exposure make an identity and associated attitudes more salient, resulting in a greater likelihood of seeking out more relevant mediated as well as interpersonal communication experiences. This would, in turn, presumably strengthen identification with the social group or category in question relative to other social identities that may compete for priority. Such identification should also tend to support preferences for interpersonal associations with group members sharing similar beliefs and using similar media, further reinforcing social group identity:

> Proposition 7: Identification with a given social group is in part maintained by the dynamic mutual reinforcement patterns of media selection and influence as well as by associated patterns of choice in interpersonal association and communication.

Consistent with these arguments, distinctive patterns of media content preference and other communicative choices can be discerned for people identified with a variety of social identities. For example, Morton and Duck (2000), in a small ($N = 79$) cross-sectional survey of gay men, found that safe sex attitudes were predicted by gay media use moderated by dependency on these media. Moreover, the impact of gay media use on safe sex attitudes was greater for those respondents who identified more strongly with the gay community. This pattern of greater reliance on and influence by group-specific media among those more identified with the group is

consistent with the selectivity and effects process hypothesized here (see also Lapinski & Rimal, 2005, for a discussion of the role of mass communication in perceived social norms).

Similarly, Hebdige (1979), in a case study analysis of working-class youth sub-cultures in the UK, emphasizes the importance of distinctive media preferences, particularly music genres such as punk and reggae, in defining and reinforcing sub-culture membership. Wilson (2002) describes the emergence of Web sites and Inter-net community for an "antijock" youth culture. Steele & Brown (1995), based primarily on extensive qualitative studies of sexual content, argue adolescents select media content consonant with their various emerging social and personal identities, which in turn are shaped and reinforced by the selected media content (see also Brown, Steele, & Walsh-Childers, 2002). Each of these studies suggests that spirals of media selectivity and effects do indeed exist and a systematic approach to measuring these processes would add to our understanding of their nature.

Open and closed communication subcultures: Some implications of reinforcing spirals models

As discussed earlier, the cumulative effects of communication content selectivity and their effects are typically limited insofar as social identity groups exist within an open social system. Mainstream values and perspectives, in a contemporary democratic society, are difficult to shut out entirely. Indeed, cultivation theorists argue that users of mainstream media are likely to conform to worldviews consistent with main-stream media content (Gerbner et al., 2002). Willingness to engage with media content inconsistent with group values or to participate in dialogue with others of different perspectives should dampen spiral effects. This dampening of spiral effects has been demonstrated in online environments (McDevitt, Kiousis, & Wahl-Jorgen-son, 2003), where users displayed more extreme views online.

Conversely, the effects of spirals of communication selectivity and effects are likely to be particularly strong in groups that seek to motivate closure to outside influences. Such closure can be encouraged through (a) a culture of suspicion of outside influences such as mainstream media; (b) use of group-specific media such as Web sites, books, and magazines that consistently reiterate a consistent and distinctive worldview; and (c) maximizing engagement in interpersonal and group networks that largely or completely exclude nonparticipants. This proposed process in some respects parallels *groupthink* phenomena, in which homogeneous groups insulated from outside perspectives sometimes generate decisions that are polarized and often prove in retrospect to have been unrealistic (Janis, 1982).

Recent findings in selective exposure to political information are also consistent with the argument here that openness or closure to inconsistent influences is distinct from selective exposure. Selective exposure to ideologically consistent information appears commonplace. However, selective avoidance (or closure, in the context of the present argument) does not necessarily accompany selective exposure. For exam-ple, some evidence is reported (at marginally significant levels) that evangelical

religious affiliation is associated with selective avoidance, but that selective avoidance does not generally accompany selective exposure (Garrett, 2006a, 2006b).

Fundamentalist religious movements, regardless of religion, are among the most evident examples of relatively closed communication systems (see Armstrong, 2000). Ammerman (1991), for example, notes that *separatism* serves as one of the defining characteristics of American Protestant fundamentalism and describes the importance of the emergence of fundamentalist publishers and texts, broadcasting outlets and television ministries, and educational institutions. Likewise, various Islamic fundamentalist movements appear to be characterized by developing interpersonal and mediated channels that reflect Islamist perspectives and values with substantial fidelity (see Armstrong, 2000; Nash, 1991; Voll, 1991). Such influences are in some cases further reinforced through the radical *madrasa* that socialize these perspectives to the exclusion of more diverse perspectives that might come through schooling (Husain, 2002). A distinctive element of Islamic fundamentalist movements may be the extent of fundamentalist principles to larger societal institutions, rather than the creation of an alternative and separate fundamentalist culture (Faksh, 1997). Jewish fundamentalism, unsurprisingly, also shares some of these same aspects (see Aran, 1991; Armstrong, 2000; Heilman & Friedman, 1991). Of course, the specifics of the religious ideologies and the degree of system closure within the religious groups in important respects appear to be quite different and to lead to different outcomes.

One consequence of such relatively closed systems is that the resulting isolation or separation may result in decreasing openness to new ideas (Moscovici, 1985). Moreover, one might expect the likelihood of increased suspicion and hostility toward members of out-groups (Ellemers, Spears, & Doosje, 2002; Tajfel & Turner, 1986). This leads to a proposition related to the nature of closure in a communication system:

> Proposition 8: The more closed the communication system within a social identity group, the more likely people will strongly identify with the group and view out-group members with hostility (and perhaps, even as legitimate targets of violence).

The effects of a closed communicative environment are likely to be magnified in the absence of a diverse and open communication environment in the larger society. A more open communication environment on the national level would tend to provide competing interpretations and portrayals of groups and events that could dampen the influence spirals described above:

> Proposition 9: The effect of closure in social identity group communication patterns on isolation and intergroup hostility will be exacerbated to the extent the national system also tends to be a closed one.

In *The Second Coming*, William Butler Yeats bemoaned that "...the best lack all conviction, while the worst are filled with passionate intensity" (Yeats, 1920/2007). In a sense, the argument proposed here is that the closure of some in-groups to outside influence has the potential to generate a spiral toward polarization that

may often (though not always) lead to "passionate intensity" that may well be expressed through out-group hostility. Similarly, openness is likely to undermine spiral processes and increase uncertainty, which makes action less clear and certain. In the short term, closure then may have advantages in terms of the ability to motivate and mobilize in-group members. If the social or economic environment is favorable, a closed group may grow and flourish; they provide a precious commodity—certainty and direction in a confusing world. In the long term, it may well be that excessive closure will reduce the ability of a group to adapt to environmental change, and that significant out-group hostility may well eventually mobilize opposition sufficient to respond with passionate intensity.

It should be recalled, though, that openness and closure is a continuum, not a dichotomy. A degree of closure may support group cohesiveness and passion for engagement, with enough openness to engage other elements of society without zero-sum confrontation. This combination may characterize the more successful social change movements, from civil rights in the 60's to American conservatism in the 90's. One dynamic feature of relatively open societies may be precisely this tolerance for relatively closed social or political movements and the ability to provide incentive for some social engagement. Social change from this perspective might be viewed in terms of the intersection of some of these groups with a favorable economic or social climate in which they rapidly expand. As they do, they may influence through social and political action public discourse and the media environment (see Reid et al., 2004), resulting at times in lasting change as other groups in society respond and accommodate.

Internet's potential to support both greater openness and closure of communication experience

In industrialized societies, audiences tend to rely on personalized media and channels such as cable television and the Internet, turning less frequently to the major broadcast television sources that characterized the 50's through the 80's in the United States (e.g., MacDonald, 1994). Regardless of a country's level of national development, anyone who can access the Internet can access an enormous array of information, beliefs, values, and perspectives. This increasing diversity of mediated content and channels has two possible and competing outcomes from the perspective of the present discussion. Increased diversity of available content and channels may result in increased diversity and accessibility of communication content and exchange, for a more open communication system (e.g., Ghareeb, 2000). This range of choice also may increase the ability to identify and access sources closely reflecting one's own views and values. Such comfortably consonant sources can become an exclusive or near-exclusive source of information and conversation, facilitating the development of relatively closed information systems (Whine, 1999). Discovering which patterns appear, for which users, under what circumstances, for how long, and with what impact, represent theoretically challenging and socially important research challenges.

Quantitative approaches to studying spiral processes regarding social identity and identification with subcultures

In general, multilevel models lend themselves to tests of propositions derived from this spirals of selectivity and effects perspective. Data might be gathered at the group level regarding availability of group-specific media and interpersonal association opportunities. At the individual level, data could be collected on individual use of such media and interpersonal interaction, and on the amount and type of mediated and interpersonal interaction outside the group. Outcomes might include identification with the group, social beliefs, and evaluations of out-group members. Analyses could examine direct effects of each of these variables. It would also be possible to examine the effects of an individual's distance from group communication norms on group identification, beliefs, and assessment of out-group members. Cross-level interaction tests might be used to examine the multiplicative effects of group communication choices or resources with an individual's use of nongroup communication alternatives or dispositional factors such as trait anger. Moreover, using multiple observations over time, one could look simultaneously at dynamic processes as they unfold as well as at the relationship between group-level and individual variables.

To conduct such investigations, data sets would have to be developed that include enough examples of subcultures or at least distinctive instantiations of subcultures (e.g., different congregations or other voluntary associations within a community) to provide enough power to make Level 2 estimates (Raudenbush & Bryk, 2002). There would have to be sufficient sampling within each cluster unit to make reasonable inferences about norms and variability within that unit, if information about variability and deviance of individuals from group value and communicative norms is desired. If not, more high-level units and fewer observations within each unit may be preferred, as multilevel modeling can estimate models with relatively few observations per upper-level unit (see Raudenbush & Bryk, 2002). If possible, data about the group should be observed directly rather than inferred from the sample. For example, information about a neighborhood's political leanings or religious affiliations is better ascertained from census data or other public records if available than estimated from a relatively few respondents in that neighborhood. Such data sets are rare; however, recent studies on communication infrastructure theory may provide or approximate the type of data appropriate for examination of questions such as these (e.g., Kim & Ball-Rokeach, 2006). It is my hope that the present discussion might encourage data collection efforts that permit quantitative examination of the questions raised here.

Implications of the spirals of selectivity and effects perspective for some theories of media influence and media use

The reinforcing spirals perspective as presented here has two primary aspects. The first aspect is concerned with understanding the cumulative process and effects of media and other communicative choice and effect for the individual. This component

is the most readily evidenced and defended. As such, the reinforcing spirals perspective's primary theoretical contribution is the marriage of selective exposure or uses-and-gratifications approaches with studies of media effects in understanding the dynamics of media use and influence over time.

The second, and more speculative, aspect of the reinforcing spirals perspective regards the implications of spiral communicative processes on the maintenance of political, religious, and lifestyle identities. This aspect also has implications for a variety of media effects theories, as summarized in the paragraphs that follow.

Spiral of silence: Positive feedback leading to paralysis
The most prominent spiral effects theory in communication is, of course, the spiral of silence (Noelle-Neumann, 1974). The spiral of silence is a theory of the silent majority. It asserts that members of the public with conservative viewpoints, in a nation with a predominantly liberal press, refrain from political expression and participation because they believe their positions are marginal and isolated. Their lack of expression leads to further invisibility in the media and continued reluctance to express conservative viewpoints.

The phenomenon proposed by the spiral of silence theory represents a more unusual version of the positive feedback or spiral process. Instead of a feedback process in which media use reinforces a belief or behavior that leads to increased media use, it produces the opposite type of positive feedback loop: one in which the spiral process leads to paralysis, a regression to zero instead of toward infinity. Eveland et al. (2003), in their discussion of the evolution of the political "chronic know-nothing," also describe a similar regression toward zero.

Several points regarding spiral of silence theory are relevant here. First is the acknowledgment of its technical achievement. The theory addresses the reciprocal relationship between media use and the outcome of media use as a dynamic, over-time process, which are key elements of the media effects theorizing argued for here. By addressing this relationship, Noelle-Neumann's explanation moves seamlessly from media's effects on the behavior of individuals to its influence on segments or sub-cultures within society—which I argue is likely often to be a feature of reinforcing spirals theorizing and research. There is much, as Price and Allen (1990) note, to be learned from spiral of silence, whether or not one accepts the claims of the theory.

Second is the closed-system assumption that underlies claims of such a strong spiral effect. Such an assumption would require both a uniformly hostile media environment and a lack of competing alternative media or other collective communication channels through which competing beliefs and norms can be shared. In an era of Internet communication and multiple radio and cable television channels, such an assumption is unlikely to often hold in contemporary democratic societies, which the spiral of silence theory is intended to describe (see Scheufele & Moy, 2000, for a more detailed methodological critique). In other words, even if there once was a communication and media climate in which a spiral of silence was likely to manifest itself, it is less likely to be detectable now in industrialized, democratic societies.

Third, the theoretical perspective here emphasizes a very different dynamic than that proposed by the spiral of silence theory. The present approach focuses on what happens when distinctive mediated communication channels and content, as well as associated interpersonal and group channels, can be actively selected by people who do not fully identify with values expressed in the mainstream media. Such selectivity is likely to result in reinforcement spirals leading to increased identification with some alternative set of values. A more contemporary version of the spiral of silence, then, might be concerned rather with the degree to which religious, political, or lifestyle subcultures perceive that their values and concerns are reflected in mainstream media content or political and social discourse. Such perceptions may influence the degree of openness or closure to outside influence, as well as feelings of personal alienation or connection and the degree of willingness to engage in political processes and debate.

Agenda-setting

Agenda-setting (McCombs & Shaw, 1993) is among the most influential and best established theories of media effects. The focus of agenda-setting research, however, is typically on the major media in a community or in society at large and on the influence of topics of coverage on issue salience for the public as a whole. The reinforcing spirals perspective would suggest the importance of examining the agenda-setting influence of group-specific media, be they Web sites, radio talk shows, or the influence of religious leadership. The likelihood that these sources set issue agendas as well as frame these issues for group members (see discussion below) is high.

What may be more interesting is the process by which such group-specific media channels might be able to influence the larger media environment. Interest-group influence on media coverage, and thus on public agendas, may be a function to some extent of lobbying and media-relations efforts. However, it is likely that media gatekeepers look to other, more targeted media to pick up on issues and trends. Research attention might be usefully directed at examining when and how interest-group media coverage influences the media and the public agenda.

Framing

Framing research (Iyengar & Simon, 1993; Scheufele, 1999) explores the ways that media interpretation of events or issues influences how these events or issues are interpreted by members of the public. The spirals of selectivity and effects perspective would lead to the hypothesis that group-affiliated political or religious media and other organized communication venues will develop and refine ways of framing events and issues that are consistent with the values of group members. These frames should provide interpretive filters for members of that group through which other mediated information will pass. Such frames should also facilitate counterarguing of general media coverage, and should increase perceptions of media bias when those frames are not reflected in or do not dominate media discourse (Vallone, Ross, &

Lepper, 1985). In other words, a spirals process is likely to emerge in which preferred media sources articulate frames that interpret issues and events in terms consistent with group values. Subsequently, members of that group should increasingly assess nongroup media content through those frames, and prefer media and nonmedia sources that reflect such frames.

Moreover, politicians and other news sources are likely to use such group-specific sources to identify frames and language to incorporate in their public statements and stances, and to encourage support from members of corresponding political, religious, and ideological groups. These political frames, accordingly, will be reflected in the frames of media coverage. In this way, group-specific values and frames may in turn shape those of the larger society.

Cultivation
The reinforcing spirals of selectivity and effects model shares with (and to a considerable extent derives from) cultivation theory (Gerbner et al., 2002) the premise that the content of one's media environment will influence one's beliefs about the social and political world. There are, however, two major differences.

The first difference is that this spirals perspective emphasizes the influence of group communicative and media influences. This is not to say that the larger society's media influence does not matter and does not influence beliefs and values across a population. In fact, larger society's media influence may be a key factor in preventing the acceleration of positive feedback loops. Rather, this reinforcing spirals model also focuses attention on a likely tension and competition between group perspectives and those of a larger society. The interesting questions then focus on how the group manages the challenges posed by mainstream media. The long-standing hostility of many political and religious conservatives in the United States to the mainstream news media and entertainment content is a case in point. As noted above, conservative Americans have quite effectively developed both religious and secular alternatives to mainstream news, including establishing a major cable news outlet founded and managed by prominent conservative communicators.

A second difference is with respect to the role of the media from an analytic perspective. Cultivation treats media as an independent variable, seeking at best to control other possible third-variable influences. The reinforcing spirals model focuses, as discussed, on the endogeneity of media use choices, and acknowledges that media content preferences reflect values and perspectives that are typically modeled only as outcome variables in cultivation analyses. The difference, then, is with respect to the complexity of the paths of causal influence involved.

Selective exposure and uses and gratifications
A primary objective of the spirals of selectivity and effects model is to integrate selective exposure processes (Zillman & Bryant, 1985) into the study of media effects. Conversely, the reinforcing spirals model emphasizes that the effects of media

exposure are likely to reinforce the tendencies, preferences, and values that predict media choice in the first place.

The reinforcing spirals model also emphasizes aspects of uses or gratifications as being especially worthy of research attention. The model suggests the particular importance of the maintenance of social identity through media use and other communicative experience (see also Harwood, 1999). Therefore, affirmation of beliefs and values, or, though probably less often, the opportunity to counterargue or belittle opposing perspectives, is likely to be an important motivator of choice of media content and channels (Slater, 1997). Likewise, such attitudinal consistency is likely to serve as a determinant of the amount and type of attention paid when relevant content is encountered. The reinforcing spirals model emphasizes that the use of a particular type of media content is likely to reinforce the needs and preferences that led to its use in the first place, helping sustain those particular needs and desired gratifications. In this way, the reinforcing spirals perspective builds upon selectivity and uses-and-gratifications research by including media effects themselves as indicative of such behaviors.

Conclusion: Reinforcing Spirals of Selectivity and Effects as a Perspective for Understanding Certain Individual and/or Social Processes

It is important to reemphasize that the spirals of selectivity and effects perspective presented here has two primary aspects: (a) a description of individual-level media use and influence processes over time and (b) a perspective on how such mutually reinforcing processes of media use choices and their effects serve to maintain political, religious, and lifestyle subcultures. One can certainly entertain the individual-level approach without engaging with or accepting the social-level possibilities. The reverse, however, is not true.

The individual-level model has encouraging initial empirical support (e.g., Eveland et al., 2003; Slater et al., 2003, 2004). It provides a way of understanding communication channel and content selectivity and corresponding effects as a single, dynamic, process. This is not, of course, a call for all media effects studies to engage this full process. Clearly, when new phenomena are being explored or new theories developed, smaller-scale and more modest efforts are both sensible and are often logistically the only reasonable option. It is my position, however, that for relatively mature areas of communication research—such as studies of media effects on aggression, and media and political involvement—a focus on dynamic processes over time is essential if our theorizing and our impact on the social sciences are to move forward.

The more macro, social-level version of the spirals of selectivity and effects model is clearly more speculative. Nonetheless, it leads to some useful ideas with respect to existing theories, such as framing and agenda-setting, and highlights a variety of research questions and possible methods for their study. More importantly, if empirical support is found, this approach to looking at the dynamic relationship between

communication selectivity and effects may help provide a framework for placing communication selectivity and effects processes at the center of explorations of political, religious, and lifestyle identity and conflict.

Acknowledgments

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