**Reinforcing Spirals Model**

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Abstract:

The Reinforcing Spirals Model (RSM) describes the role of communication (mediated and interpersonal) in how socialization, attitudes, and social identities are formed, reinforced, and/or sustained in the face of competing perspectives. The RSM proposes that people tend to select communication sources and content that reinforces their beliefs and social identity, and in turn beliefs and behaviors can be reinforced by such communication selectivity. From this perspective, the role of mediated communication in particular can be viewed as an endogenous or mediating process. Under normal circumstances this reinforcement process is likely to have reached homeostasis, and not be readily detectable empirically. However, in times of identity formation/change (eg adolescence, immigration) and identity threat (social disruption, economic difficulty, life changes) the process should become dynamic and measurable. Other boundary factors impacting the process include how open or closed the communication norms are for a given individual or set of individuals in a given social identity group, as well as how open or closed communication systems are in the larger society. This entry also describes empirical findings supporting the RSM, reviews methodological issues in the study of Reinforcing Spirals as a dynamic model, and identifies future research directions.

Key Words: media use, identity, selectivity, dynamic models, socialization, extremism, attitudes

The relationship between self, social identity, communication, and society has been a focus of social science theory since the work of Mead and the symbolic interactionists (Mead, 1934). The Reinforcing Spirals Model (RSM; Slater, 2007; Slater, 2015) is intended to conceptualize this relationship between social identity and communication as a dynamic and recursive process. Individuals seek out mediated and interpersonal communication experiences consistent with their values, beliefs, and social identities, which in turn help them sustain their preferred social identities. From this perspective, media use is an endogenous or mediating variable, shaped by social and dispositional factors including those related to social and personal identity, and influencing beliefs, attitudes, behaviors, and other components of human identity.

The RSM draws on systems theory concepts (Bertalanffy, 1968) to describe this iterative process and suggests contingencies and boundary conditions that determine when selectivity or media effects are likely to be particularly strong, and the circumstances under which these patterns would be more likely to lead to severe polarization or even extremism. In the following pages, we will review these proposed processes and contingencies, as well as empirical data supportive of the model. We will also discuss methodological issues posed by testing a complex dynamic model in social systems.

The RSM is particularly relevant in the emerging communication environment of the past two decades. Digital and social media have made it increasingly easy to select communication sources, from news or quasi-news to quasi-interpersonal social media communities, closely aligned with one’s ideological, religious, professional, sexual, and virtually any other form of social identity, free from the constraints of location or access of the identity community to expensive means of message creation and dissemination. People can if they choose increasingly immerse themselves in identity communities that reflect their own beliefs and assumptions about the world, and reduce exposure to challenges to such beliefs. The RSM resembles spiral of silence theory (Noelle-Neumann, 1974) in being a dynamic, recursive model, but comes to opposite conclusions, proposing tendencies toward fragmentation and polarization rather than opinion homogenization.

[A] Propositions of RSM

Formally, the RSM can be articulated in the form of a series of propositions (Slater, 2007, 2015). The founding premise is that to understand the effects of different types of media content, one needs also to understand what has led to use of that media content:

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.

The second proposition highlights the interconnection between the variables that influence media use and that are the outcome of media use, and underscores the important role of personal or social identity in influencing both media use and media effects:

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.

The third proposition identifies this as a dynamic system, and – absent other variables in the system helping produce equilibrium – describes the simplest form it might take:

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.

Propositions 4A and 4B qualify this statement. Proposition 4A notes that positive feedback loops associated with media effects are always limited by time and resource constraints, while 4B highlights the importance of the extent to which social group or societal systems are open or closed, and the impact of environmental and other constraints.

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.

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.

The particular application of the model to issues of social group identity or ideology is addressed in the fifth proposition:

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.

The sixth proposition changes level of analysis, and proposes a social cognitive mechanism for the effects of media use on social identity:

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

The seventh proposition underscores how these processes can be expected to result in maintenance of social group identity over time:

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.

The importance of the degree to which social group communication norms are open or closed is further emphasized in propositions eight and nine:

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 outgroup

members with hostility (and perhaps, even as legitimate targets of violence).

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.

Less formally, the RSM points out that in contemporary democracies, there are many information sources, many competing perspectives, and that to a great extent this process of selectivity and effect may simply serve to maintain a reasonable degree of homeostasis (see also Klapper’s reinforcement hypothesis, 1960). After all, people typically have many competing social identities and demands on their attention and time. One would assume that most individuals achieve equilibrium with respect to how much time they need to spend reinforcing their identity, and would not invest additional time beyond that, which might be invested in other communicative pursuits of interest.

A theory of homeostasis, however, is untestable. The RSM would be of limited interest if it did not specify when dynamic processes might be observed, and predict patterns of change consistent with the model under specific circumstances.

The RSM argues that a key driver of change and increase in selectivity and associated communication effects on social identity is identity threat. Identity threat may also be a function of individual circumstance or life span situation. Adolescent and young adult socialization is a time of identity formation, a time when these dynamic processes are very likely to play out in significant and observable ways. Identity threat may be a function of perceived economic or technological change that threatens livelihoods. It may arise from perceived lack of economic opportunity that prevents young people from obtaining employment and moving into careers, or from immigration that changes the complexion of one’s neighbors and the social norms one sees enacted in one’s social sphere. Shifts in social norms, such as changes in the acceptability of types of roles and behavior as a function of biological sex, or sexual activity and identity, may threaten those whose identities are invested in traditional social and sexual roles. Politicians and other social actors may furthermore seek to maximize the perceptions of such threats through their rhetoric and through the narratives they convey through media, traditional and social. This has become evident not least through the rise of populist political communication during the last decade (e.g., Aalberg, Esser, Reinemann, Strömbäck & de Vreese, 2017). The decade preceding publication of this volume has also been marked by social pressures and events likely to generate identity threat; as a result, the RSM may have particular utility in the present historical context, in places and times in which such threats are emerging or exploited for political reasons.

Other contingencies are also posited to determine the extent of the impact of the process of communication selectivity and its effects on shaping and reinforcing identity. As noted earlier, the RSM points out however that people typically satisfice when they achieve a satisfactory equilibrium between competing external viewpoints and maintenance of their own identity. When the identity threats are ongoing, the perception of the extent of such threat maximized by social actors, this equilibrium is however harder to achieve. Moreover, people live in social systems and communicative groups that vary in their openness to identity-inconsistent information. If identity norms are relatively closed—actively hostile to the existence of competing views of the world—the potential near-total immersion in the communication content reflecting that social identity and for highly polarizing or extreme outcomes is much greater. Similarly, if at the level of national society, diversity of content is restricted and what is not restricted is consistent with the social identity in question, there is of course more potential for extreme outcomes. Examples of this can be found in authoritarian countries and in countries changing in an illiberal direction.

These contingencies and boundary conditions for the dynamic model are illustrated in figure 1.

[A] Empirical Support

Research supporting the RSM up to 2015 has been summarized by Slater (2015). In brief, the ideas underlying the RSM were originally developed in the context of use of violent media content and aggressiveness among youth (Slater, Henry, Swaim, & Anderson, 2003) and in exposure to media content showing substance use and smoking uptake (Slater & Hayes, 2010). The RSM has also been tested in the context of environmental communication (Feldman et al., 2014), sexuality and adolescents (Peter & Valkenburg, 2009), political socialization (Moeller & de Vreese, 2015), a referendum concerning asylum (Schemer, 2012), and, significantly given the concern of the RSM with the potential for polarization and extreme outcomes, in work on media exposure and polarization among Palestinian and Israeli youth (Dvir Gvirsman et al., 2014; Dvir Gvirsman et al., 2015).

Reviewing research since 2015, the RSM has been tested in many different contexts, often focusing on the reciprocal relationship between different types of media use and different types of attitudes and behaviors. Examples include research on the reciprocal relationship between media multitasking and attention problems among adolescents (Baumgarner, van der Schuur, Lemmens & te Poel, 2017), between adolescents’ hypermasculinity and hyperfeminity and their online self-presentations (van Oosten, Vandenbosch & Peter, 2017), between support for abortion, sexual liberalism and consumption of pornography (Wright & Tokunaga, 2018), between political interest and TV news use (Strömbäck & Shehata, 2018) as well as between political interest and internet use (Moeller, Shehata & Kruikemeier, 2018), between Facebook news use and affective polarization (Beam, Hutchens & Hmielowski, 2018), and between selective news exposure and ideological leaning (Dahlgren, Shehata & Strömbäck, 2019). While most of this research focuses on the role of mediated communication, there is also research taking up Slater’s suggestion that spiral selectivity and effects may also be found with respect to interpersonal communication. One example is a study investigating the reinforcing spirals of political discussion with similar and dissimilar others and affective polarization (Hutchens, Hmielowski and Beam (2019). Another example is a study, using agent-based modeling, investigating the relationship between selective exposure, interpersonal networks and attitude polarization, and how the attitudinal composition of people’s network interacts with the effects of media use (Song & Boomgaarden, 2017).

In general, this research lends support for the notion of reinforcing spirals between the use of mediated communication or political discussions and the variables of interest, although not without nuances. Oftentimes, results reveal an asymmetry between the variables of interest. For example, Van Oosten et al. (2017) found that adolescents’ hypergender orientation predicted an increase in sexy self-presentation and exposure to others’ sexy self-presentation, but not the other way around. Similarly, Baumgartner et al. (2018) found a long-term effect of media multitasking on attention problems for early adolescents, but no effect running from attention problems to media multitasking. Strömbäck and Shehata (2018), in their study on the reciprocal relationships between political interest and TV news consumption, furthermore found that selection effects are more common and more consistent than media effects, although such were also found. They also found the hypothesized relationship only for the use of public service TV news, but not for the use of commercial TV news. Similarly, while Dahlgren et al. (2019) found support for the notion of reinforcing spirals between media use and ideological leaning, the effects were stronger for the use of online news websites compared with the use of newspapers in print. In general, there appears to be stronger and more consistent support for selection effects than for media effects, although that might partly be a methodological artifact (see below).

Altogether, findings strongly suggest that effects of any kind should not be expected to be universal, but contingent on individual-level factors such as people’s social identities as well as environmental and other constraints (see proposition 4A and 4B). Of key importance is the content of whatever communication media people are using (Slater, 2015), although not all studies take the actual content people are exposed to into account. Two other important boundary conditions are related to the strength of the attitudes in question and the stability of key constructs, including both media use and beliefs, attitudes or behaviors (Scharkow & Bachl, 2018). For reinforcing spirals to be in motion, media use as well as people’s beliefs, attitudes or behaviors must vary over time, but in many cases, these are characterized by a high degree of stability. It might thus be more fruitful to apply the RSM to constructs that are less stable than more trait-like constructs.

[A] Methodological Issues in Testing the RSM

Given its focus on the dynamic and mutually reinforcing relationship between media selectivity and media effects, adequate analyses of the RSM require longitudinal data – although tests of specific mechanisms have also been based on experimental designs (Knobloch-Westerwick & Meng, 2011). As such, many studies addressing the RSM rely on panel surveys with repeated measures of both media use and attitudes.

In terms of research design, questions related to timing, number of panel waves and time lags are crucial. Previous studies vary along each of these dimensions and decisions necessarily depend on the specific research question of interest. In general, however, attention should be given to time periods and life phases when social identities are particularly likely to be in formation – such as during adolescence – or when social identities are under threat. The number of panel waves also matter, since more points of measurement allow for the identification and testing of distinct growth and reinforcement processes that may vary over time (Thomas et al., 2019). Whether time-lags are long or short furthermore influence both the aggregate and individual-level variability of measures used. Longer time-lags improve the probabilities of registering relevant change in constructs that are typically highly stable in panel surveys conducted over a few weeks or months (Scharkow & Bachl, 2018). At the same time, longer time lags make it more difficult to convincingly isolate the causal effect of one variable on another over time. If selection effects and media effects operate on different time frames, such as selection effects being short-term or instantaneous but media effects long-term, this has to be accounted for in the time-lag setup (Baumgartner et al., 2017). A final design issue that goes to the heart of the RSM concerns the inclusion of media content into the study design. Given the centrality of content (identity- and attitude-consistent, etc.) to the theoretical argument, RSM studies would gain from recent developments in linkage analysis that combines survey and media content data (De Vreese et al., 2017; Scharkow & Bachl, 2017).

With respect to statistical analyses, recent RSM studies relying on panel survey data either use some application of the cross-lagged panel model (CLPM) or the parallel latent growth curve model (PLGCM). The CLPM has recently been applied in a variety of RSM contexts (Beam, Hutchens & Hmielowski, 2018; Kruikemeier & Shehata, 2017; von Salisch, 2018). Here, the presence of significant cross-lagged effects in both directions is typically interpreted as supporting a mutual reinforcement process. Examples of the use of the PLGCM also include studies from different contexts (Moeller & de Vreese, 2015; Schemer, 2012; Slater & Hayes, 2010). Here, correlated growth curves are indicative of reinforcement processes.

Although the CLPM and the LPGCM have distinct strengths and weaknesses, important limitations with these approaches for testing the RSM have recently been highlighted. Apart from problems encountered in the likely scenario of high temporal stability in media use and attitudes (Sharkow & Bachl, 2018), statistical models that can better capture reinforcement as an *intra*-individual process are needed. Since the mechanisms and processes outlined by the RSM concern within-person dynamics, being able to separate inter- from intra-personal effects is key.

Some studies use *fixed effects panel regression* (Allison, 2009) in order to remove all stable between-person variation, focusing on within-person changes exclusively, in the estimation of media effects on outcome variables (Hmielowski et al., 2014; Kruikemeier & Shehata, 2017). This approach is equivalent to using “each individual as his or her own control” (Allison, 2009), and thereby has important strengths in its intra-individual focus. On the other hand, these models do not allow for estimating reciprocal influences, which is key to the RSM argument.

Another strategy to separate between from within person change was used by Baumgartner et al. (2017) in their study of media multitasking and attention problems among adolescents. By employing a *random-intercept cross-lagged panel model* (RI-CLPM), they were able to identify both autoregressive and cross-lagged effects as within-person deviations from an individual’s expected scores over time, with the random intercepts accounting for between-person differences. Their findings suggested strong between-person correlations between media multitasking and attention problems, but weaker and less consistent within-person long-term effects.

A final example of moving beyond the CLPM and PLGCM approaches in order to focus exclusively on within-person dynamics is based on *a cross-lagged model with fixed effects* (Allison, Williams & Moral-Benito, 2017). The basic idea is to enable estimation of reciprocal effects using lagged variables, while simultaneously accounting for time-invariant unobserved variables – i.e., combining the strengths of the cross-lagged and fixed effects panel models. For example, Moeller, Shehata and Kruikemeier (2018) applied this approach in study of internet use and political interest among adolescents. Their within-person analyses revealed reciprocal influences between certain forms of online media use and political interest over a period of five years.

[A] Future Directions

In terms of future directions investigating the RSM, there are many promising avenues. In this context, we would like to highlight x suggestions for future research. First, given what we know about the variability of both media use and different outcome variables, there is a need for more studies covering longer periods of time, particularly within political communication where most studies focus on shorter time-periods such as election campaigns. Second, and for the same reason, it might also be fruitful to focus more on constructs that are more variable rather than trait-like, for example people’s perceptions. Third, given the centrality of people’s worldviews and beliefs to their political and personal identities, research applying the RSM could further our understanding of the reciprocal processes between communication behavior and fact resistance or knowledge resistance. Fourth, given the large influx of immigrants to Europe during the last decade, applying the RSM to investigate the socialization of immigrants in Europe seems to us very important. Fifth, another important area of application is the development of extremism within nationalist and religious communities.

See Also

IEMP0080

IEMP0081

IEMP0083

IEMP0116

IEMP0113

IEMP0153

IEMP0256

IEMP0262

IEMP0273

IEMP0274

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Figure Caption

Figure 1: Version of the reinforcing spirals model including contingent factors normally leading to homeostasis and maintenance of identity relevant attitudes and those escalating the process. All relationships are positive except the dampening effects of system openness and of competing social identities on the spiral process, shown as interaction effects. Source: Slater, 2015, p. 374.

Further Reading

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