Stability as an Outcome in Communication Research

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Since the earliest days of communication research, key findings have often involved the claim that attitudes or behaviors become stable because of communication. Research tends to focus on changes in attitudes or behaviors, however, which can cause confusion when changes are not observed. A lack of theorizing about stability leaves scientists unable to distinguish between null results and attitude stabilization that occurs because of communication. Furthermore, research tends to use the term reinforcement in a way that sometimes means stability, but in others means attitude change. This article argues that stability can be an effect of communication and provides an overview of the research designs needed to perform research of this kind. It concludes by showing how an existing theory, the reinforcing spirals model, can be used to make predictions about how communication leads to stability.

Keywords: stability, communication theory, reinforcement, longitudinal design, media

In communication research, the notion of an effect in the human subjects setting has become near-synonymous with changes in attitudes or behavior. Although such changes can be important and, research often does not consider a lack of change as a potential effect of communication as well. There are many possible reasons for this, but I will argue it is likely because of historical and sociological factors along with uncertainty around how one could design studies that treat stability as an outcome in quantitative social science research. Many of the most urgent social problems facing communication researchers concern people who appear resistant to change; in the context of social scientific studies, this is often framed as people who experience no effect of communication. Communication research designs may indeed produce findings of no effect, but this does not mean a person whose attitude or behavior is unchanged is unaffected by communication. In fact, my argument is that in many cases, the lack of change may be due to the influence of media and social connections. To test these possibilities, researchers must both theorize about stability and carefully design studies to assess whether stability occurs in spite of or because of communication.

This article aims to advance the intra- and interdisciplinary discussion of stability as it relates to communication, its antecedents, and its consequences. To begin, I show that communication research and theory have grappled with stability since the discipline's earliest days. This concept has continued to underlie theoretical debates in the recent past. Inconsistencies in nomenclature, however, have perhaps added confusion

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about stability as it relates to concepts such as reinforcement. After conceptualizing stability, I then address the specific design and statistical considerations needed to study stability quantitatively. As an example of how much of the intellectual framework is already in place to integrate this concept into communication research, I consider the reinforcing spirals model (Slater, 2007, 2015). I show that the theory can be reframed as a model that can explain why stability often characterizes some important communication concepts.

Stability in Historical Context

The claim that mediated communication has limited influence on attitudes and behavior has played a prominent role in the history of communication research. Lazarsfeld, Berelson, and Gaudet (1948), for instance, claim to have found "no overt effect on vote behavior at all" (p. 87) from communication in their trailblazing Erie County study. Lazarsfeld and colleagues (1948) had a nuanced message on this topic, but the received history of the study and its contemporaries is one that emphasizes a lack of media effects (e.g., Klapper, 1960). Although some have reconsidered whether this was an accurate characterization of the results of media research in the 1940s and 1950s (e.g., Gitlin, 1978), given the existence of contrary findings (e.g., Lang & Lang, 1953) and later reanalyses of the data, more important than the findings themselves is the remembered history.[1] Near the end of this era of supposedly minimal effects, some of the field's brightest minds cast doubt on the continued usefulness of (mass) communication research (Berelson, 1959), something even those who were not so pessimistic struggled against (Lang & Lang, 2006).

Of course, the field moved on despite the doubts and eventually entertained theories suggesting strong effects of media (e.g., Gerbner & Gross, 1976). Nonetheless, I will argue that those raising alarms about minimal effects won the argument in at least one respect: They defined "effects," at least interesting ones, as those that involve categorical or directional *change* in attitudes or behaviors. When scholarly arguments about minimal effects resurfaced in the recent past (Bennett & Iyengar, 2008; Holbert, Garrett, & Gleason, 2010), the locus of disagreement was on whether this type of media effect—in which attitudes or behaviors are made less extreme or shift into a new category entirely—was the only kind worth studying. Lang and Lang's (2006) reflection on the first minimal effects era stresses how, irrespective of the contested empirical basis for the *Personal Influence* findings, the effect was to narrowly define media effects as the kind the Columbia school deemed weak.

But all along, another kind of influence was acknowledged. Lazarsfeld and colleagues (1948), just after reporting the headline finding of "no overt effect," pose the rhetorical question of whether their results mean that campaign communications had no effects on the many people who voted along with their usual partisan identity. The answer:

> Not at all. For them, political communications served the important purpose of preserving prior decisions instead of initiating new decisions. It kept the partisans "in line" by reassuring them in their vote decision; it reduced defections from the ranks. It had the effect of reinforcing the original vote decision. (Lazarsfeld et al., 1948, p. 87)

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[1] To borrow a phrase from Dennis and Wartella (1996) as well as Pooley (2006).

And Klapper (1960), in his influential summary of media effects research, concluded, "[w]ithin a given audience exposed to particular communications, reinforcement, or at least constancy of opinion, is typically found to be the dominant effect" (p. 15). Klapper (1960) made clear that he did not see this as a deficit, saying the "greatest danger" for scholars is "the tendency to go overboard in blindly minimizing the effects and potentialities of mass communications" (p. 254). Lazarsfeld himself enumerated 16 distinct types of media effects (Lazarsfeld, 1948), which Katz and Lazarsfeld (1955) would say was not quite comprehensive. Lang and Lang (2006) later concluded that these many qualifications to the famous findings of minimal effects were not widely received or commented on by contemporary readers and collaborators, some of whom—like Berelson—would go on to declare the field largely played out. Many years later, Bennett and Iyengar (2008) would predict that in the present era, media are unlikely to "do anything other than reinforce prior predispositions" (p. 724), echoing the Lazarsfeld (1948) group. This assertion prompted Holbert and colleagues (2010) to remind that "the study of persuasion involves analyses of response shaping, response reinforcing, and response changing processes of influence, not just the latter" (p. 17).

Despite its status as among the most prominent media effects theories (Bryant & Miron, 2004), cultivation theory (Gerbner & Gross, 1976) reckoned with stability, noting that although the system of messages on television is expected to change perceptions of the world, once one has adopted the television version of reality, continued exposure serves to maintain that perception. The approach also tended to assume stability of exposure partly because of research design but also the theoretical proposition that the variation in television program was largely superficial in comparison to the overall environment. For this reason, cultivation researchers have tended to eschew the use of the term "effect" to describe the relationship between television use and the audience (Gerbner, Gross, Morgan, & Signorielli, 1986). Ultimately, however, cultivation theory's creators "did not mean for cultivation to concentrate on the psychology of individual" and instead is "focused on macro-social phenomena" (Shanahan & Morgan, 1999, p. 172) which is a key distinction between it and the approach presented here.

Perhaps the most prominent exception to the claim that stability is not treated as an outcome in communication research is inoculation theory (McGuire, 1961; Pfau & Burgoon, 1988). This approach comes from persuasion research and uses the biological metaphor of immunization to explain the way that persuasive messages can preempt competing claims by providing and then refuting counterarguments. The basic expectation, then, is that attitude or behavior change does not occur upon exposure to competing persuasion attempts when inoculation was part of the original message. Of course, since the point is to make successful attempts at persuasion robust to subsequent persuasive messages, this approach is still about change—just change that is more enduring. That being said, in applied settings, the focus is on promoting the maintenance of preexisting attitudes, in which case inoculation is not so different from my own approach beyond my more general focus.

Stability is a type of effect besides the narrow one that has defined the popular narrative of the history of media effects research. It is the idea of reinforcement that most closely resembles the focus of this article, although I will point to some inconsistencies in the apparent conceptualization of this term. To be more precise about my own aims, I will argue that *stability* of attitudes, identity, and behavior is an underappreciated potential impact of communication—both mediated and interpersonal. Although stability clearly has been a through-line of key findings and debates in communication

research, it has rarely been treated as an interesting end in and of itself. The reasons for this include minimal theorizing about stability as an outcome of communication, the conflation of stability and polarization, as well as a lack of well-known methodological and statistical tools for quantitative research on stability. To equip communication researchers with the tools to create and test theories about stability, I give a more nuanced conceptualization of the concept and give a detailed walkthrough of how it relates to the research designs and statistical models needed for quantitative research in this area. To show how existing communication theory provides tools to hypothesize about stability, I discuss the reinforcing spirals model (RSM; Slater, 2007, 2015), which is well-suited for the task even though it is typically used for different purposes. I suggest a slight change to the theory to more efficiently explain why most people do not trend toward extreme identities and behaviors.

Stability Versus Reinforcement

Research and debate about persuasion has tended to contrast the outcome of conversion—in which someone starts out with one attitude or behavior and, because of some communication(s), adopts a new one—against reinforcement, which is understood as retaining the original attitude or behavior. The term reinforcement, however, has not been used consistently. Some use reinforcement to denote a lack of change or implying a resistance to change while others see reinforcement as a strengthening of the attitude or behavior. I use "strengthening" in this context to mean more extreme (e.g., a liberal political position becomes more liberal). Lazarsfeld and colleagues (1948) described the reinforcement effect as having "reduced defections from the ranks" (p. 87) in the context of voting for the candidate of one's political party. Voting is a binary behavior; a person either votes for the candidate or not. It cannot be said in this case that Lazarsfeld and colleagues (1948) showed that a person voted *more* for their party's candidate when exposed to campaign materials, only that in aggregate exposure was associated with greater numbers of people voting for their party's candidate. In other words, it is not clear whether reinforcement meant a strengthening of an underlying attitude or just that individuals were effectively inoculated against conversion. Both are possible, but a common theme in research is a lack of distinction between these possibilities.

Both Bennett and Iyengar (2008) and Holbert and colleagues (2010) agree conceptually that in political communication, an outcome of reinforcement would be polarization,[2] meaning a reinforcement effect implies more extremity in the attitude or behavior. Dilliplane (2014) operationalizes reinforcement in the context of voting as an increase in favorability toward a candidate among those whose stated intention to vote for the candidate did not change throughout the political campaign. Livingstone (1996), on the other hand, comes out more clearly with a conceptualization of reinforcement as a lack of change, referring to such effects as those that "reinforce the status quo" (p. 307). Knobloch-Westerwick and Meng (2011) at times refer to both reinforcement and stability but do not make a clear distinction. In their discussion, they refer to reinforcement as the product of individuals seeking "self-consistency and stability" (p. 365). Klapper (1960) makes a distinction between reinforcement on one hand and "constancy" on the other (p. 15). Potter (2011), who was trying to bring clarity to the conceptualization of communication effects, introduced "weight" as a property of attitudes that may be affected by communication. In Potter's framework,

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[2] They do have an apparent disagreement over whether and to what extent such effects actually occur.

communication may result in categorical change (a change in kind), a change in strength, or weight, which Potter describes as its resistance to change and later refers to as reinforcement. None of these ways of talking about reinforcement are necessarily incorrect; the term's meaning has simply become ambiguous in its typical usage by communication researchers. Considering this uncertainty, I will avoid "reinforcement" to describe the concept of interest here even if some will understand it as such. Instead, I will refer to this core concept as "stability," which more clearly communicates the phenomenon in which change of any kind is either small, temporary, or lacking entirely.

Conceptualizing Stability

For this essay, stability refers to a lack of change, or consistency of identity, attitude, or behavior. Importantly, strengthening of an attitude is not an example of stability in this framework. Stable attitudes or identities remain the same both categorically and in terms of their strength. Stable behaviors remain the same both in terms of whether they occur at all and how often they occur. Nesselroade (1991) distinguishes between intraindividual development and intraindividual variability. *Development* is "more or less enduring" and "construed as developmental," whereas *variability* refers to "relatively short-term changes that are construed as more or less reversible and that occur more rapidly" than change as just defined (Nesselroade, 1991, p. 215). Most research interest is on change (i.e., development), whereas this essay is focused on something more like variability—or its inverse, stability—as Nesselroade understands it. Note that stability, in this framework, is a purely within-person phenomenon. Most research on the stability of communication focuses on rank-order stability (e.g., Allen, 1981; Scharkow, 2019). Rank-order stability refers to the extent a person measured at one-time point is expected to rank similarly compared with others measured at the same time in a subsequent measurement. For example, if those who engage in a behavior the most at one-time point still do the behavior more than others at the next measurement, this is quantified as high stability even if the actual amount of behavior went up or down. The methods used to measure rank-order stability (e.g., Heise, 1969) also treat nonmonotonic variation as measurement error, even though it may correspond to true variation that just does not persist over time. In a self-regulating system—something that should describe a person who is stable—a departure from equilibrium is not expected to last, much in the same way a measurement error is expected to behave, even though the former is in fact a "real" change in the underlying construct.

Ram and Gerstorf (2009) provide more nuance to the Nesselroade (1991; see also Nesselroade & Ram, 2004) development versus variability distinction, separating types of variability they call *net intraindividual variability* and *time-structured intraindividual variability*. As the terms imply, net variability refers to the total amount of change without consideration of the time ordering of the changes. The standard deviation is a way to quantify net variability; the quantity remains the same regardless of the order in which the observations occur. This means one could plausibly have the same standard deviation for two-time series in which one is a straight line with nonzero slope and another that resembles an electrocardiogram (EKG) with many peaks and valleys. More substantively, net variability is independent of time in the sense that a deviation from the norm is not at all influenced by whether and how much there was a deviation from the norm at any previous times. Time-structured variability is generally considered to be the result of a dynamic process(es). An EKG has clear time-structured variability given that the level at any moment is

contingent on the levels at several previous points in time. Whether a heart beats has a lot to do with how much time has passed since the previous beat.

In sum, the concept of stability has several positive qualities to highlight. It is descriptive, meaning no other variable needs to be invoked to define stability (as opposed to reinforcement, which implies a causative variable). This allows the concept to be used in various contexts besides the ones used for illustration here. Unlike variability, which arguably has the same literal meaning but inverted, it has no common usage referring to statistical concepts that may cause confusion. In general, that stability is not often an explicit (i.e., named) object of study makes it useful to avoid confusion with related terms as was demonstrated for the concept of reinforcement. The downsides include the fact stability refers to a relative state, so one must exercise some scientific judgment to decide whether a series of observations are "stable" or "unstable" other than the case in which there is literally zero change observed. Of course, this is not uncommon among social scientific concepts; for instance, polarization technically exists whenever there is a difference between groups, but heuristically, there is some unstated threshold that must be crossed for groups to be considered "polarized." Finally, stability is a property of another construct, which means there may be differences in the causes and consequences of stability depending on the subject of study. Although the goal is to provide some principles for the study of stability, inevitably the particulars will vary as researchers consider stability in their own areas of expertise. I will work through a detailed example of stability in communication theory, where (in)stability is conceived of as the outcome of many communication and psychological variables.

Reframing the Reinforcing Spirals Model as a Theory of Stability and Communication

The RSM (Slater, 2007, 2015) is an existing theory of communication that accommodates thinking about stability as an individual-level outcome. Put briefly, the RSM argues for treating communication and constructs often treated as outcomes of communication (like attitudes and identities) as endogenous parts of a system. It serves to integrate media effects theories (in which communication is the independent variable and attitudinal variables like identity are outcomes) and selective exposure theories (in which attitudinal variables like identity are independent variables and communication is an outcome) by treating communication as both cause and effect. RSM further argues for taking cues from systems theory to manage that integration. Part of the heuristic appeal of the RSM is the explanation it provides for how some people become extreme in both their communication habits and attitudes. In systems language, this results from positive feedback loops in which communication causes more extreme attitudes, identities, and/or behaviors, which in turn cause more selective or frequent communication in the same domain.

As an example, among the studies that inspired the creation of this theory was one in which violent media exposure among adolescents appeared to increase aggressiveness while increases in aggressiveness also appeared to increase violent media usage (Slater, Henry, Swaim, & Anderson, 2003). Such a pattern of results suggests the possibility of the positive feedback loops that characterize some of the theory's heuristic appeal. Empirically, studies that claim to be testing or implementing RSM are often panel designs in which communication (usually media exposure) and some attitude or other behavior both have positive coefficients for their effect on the other in a cross-lagged panel regression

model. Taken literally, such results imply ever-increasing extremity in both communication behavior and attitude, the epitome of instability.

Again taking on the language of the systems theory, Slater (2007) states that the norm is for the system to be self-regulating, rather than purely mutually reinforcing. In other words, usually people's identities and attitudes along with related communication do not become progressively more extreme over time. Instead, these are constructs that are expected to be quite stable. According to this logic, people typically keep things as they are. In fact, attitude-affirming communication is described as "maintenance" in the explication of the RSM, a term that captures the expected result: stability as the result of intentional behaviors. In terms of research on stability, RSM predicts that people typically exhibit time-structured stability. This means that when communication or attitudes shift, those shifts tend to be temporary as people return to their previous levels. Those who do not return to normal can be said to experience *inertia* (e.g., Suls, Green, & Hillis, 1998) or *regulatory weakness* (Hamaker, 2012). The systems explanation for why this is the case is that social systems are usually open. In other words, a person is exposed to more than just ideas and activities that push toward existing identities and attitudes. One is also exposed to counterinfluences that call those identities and attitudes into question. Moreover, people are multifaceted and experience the pull of other interests, identities, and so on. Once enough affirmation for one identity is achieved, rather than pursue it further and become more extreme, the norm is to move on to something else. It should be noted that Klapper (1960), who is often associated with selective exposure theories, proposed that communication "functions among and through a nexus of [moderating] factors and influences" (p. 48). These factors most prominently included social groups and interpersonal connections, which he argued colluded to generally make attitudes stable. RSM is, in some sense, taking up the mantle of this foundational work, adapting it to an environment with far more communication choice, and making more specific empirical claims about the relationship between the key concepts.

Take for example a person who identifies both as a political conservative and a running enthusiast. The desire to run, learn more about running, and talk with other runners are things that occupy time that might otherwise be used to intensify the conservative identity. Beyond the time and cognitive constraints of having multiple interests, the kinds of ideas one may be exposed to when spending time with fellow runners may be inconsistent with the group values of conservatives, which could serve to moderate the conservative identity as a response to the identity threat of countervailing information. The microlevel view of the process is basically that one's conservative identity gets a bit stronger after watching a congenial partisan news program but recedes an equivalent amount in the intervening time because of other factors before the next episode (or other proconservative communication) brings the identity strength back up to or slightly above normal. As in the case with a negative feedback loop, there are countervailing processes that effectively cancel each other out once equilibrium is reached. This implies there are indeed effects of media exposure and interpersonal conversations, but they tend to occur as part of a regulatory process that effectively reorient the individual to their typical level. From a bird's-eye view, this process is one of time-structured stability as the individual is engaging in an active process to prevent deviations from the norm from becoming persistent changes. When this regulatory process is absent or weak, then enduring changes (including the potential for positive feedback loops) are more likely.

This claim that these constructs tend to exist in a self-regulating system is an appealing one for several reasons. First, it applies the same type of logic to the processes that prevent change as it does for the processes that cause change. Second, it squares the theory with reality; most people—most of the time, in most domains—do not have extreme attitudes, display extreme progroup behavior, and do not engage in highly selective communication. Third, it explicitly theorizes about how and why key concepts will *not* change in a way that is amenable to empirical testing. This last point is important because one could come up with a theory that things do not change and, to test it, do run-of-the-mill, media-effects-style statistical tests and claim null results as confirmation of the theory. The goal of this article is to advance the ability to do theory testing in which these forces act in concert to cause stability. Many communication theories do not make explicit predictions about stability and whether stability is dependent on something or just a default state.

Some research on the RSM—and that influenced the RSM—has focused on volatile parts of the lifespan, like aggression (Slater et al., 2003), smoking (Slater & Hayes, 2010), and political interest (Moeller, Shehata, & Kruikemeier, 2018) during adolescence. These are times when positive feedback loops are most likely to be observed since there is inherent instability in these constructs at this stage of psychosocial development (e.g., Jennings & Markus, 1984). In this way, one can see the reinforcing spirals as a mechanism for political (or other kinds of) socialization. Most of the time, except when populations are selected specifically for their life stages or other circumstances that are expected to be particularly volatile, people who will be studied have presumably already reached a relative equilibrium. Although there may always be some people subject to the positive feedback processes, a typical adult will be in a state of relative stasis. This could be why, for instance, a study trying to connect local news use and community attachment failed to find evidence of a causal relationship between the two despite a meaningful cross-sectional correlation (Hoffman & Eveland, 2010). It may be the case that adults who are well-established in a community have reached that equilibrium and to detect the expected relationship, the sample would need to target people who have recently moved.

There are good reasons to focus on volatile parts of the lifespan in research; after all, the status quo must come from somewhere, and it is important to understand the origins of attitudes and behavior. Of course, it is also the case that one must study people as they typically are, which, according to this approach, will typically be in a state of homeostasis. People may still bear the signs that brought them to equilibrium, since (for instance) a social network of political liberals may be what made someone a liberal in the first place and interacting with them would be a plausible part of identity maintenance. And although many important attitudes and behaviors are largely characterized by stability, there is frequently a nontrivial amount of people undergoing change at any given moment and those experiences will remain important. Making comparisons between the relatively stable and relatively unstable is essential for learning the determinants of stasis and change.

Decay

The RSM provides an elegant explanation for why extremity is not the norm: People have multiple interests and identities and even when those may be more or less aligned, they still live in a social context rife with moderating forces that exist in a diverse society. But as may have been apparent in the example

of the conservative running enthusiast, it can become difficult—even in a hypothetical scenario—to enumerate precisely what will cause one's identity to moderate in between identity-relevant communications. If a person never engages with politics except watching a weekly program, it would be hard to say within the RSM what happens during the week that is not related to politics that would stop the ideological identity—and the appetite for more proideology communication—from growing more extreme with every airing of the program. And yet if I stipulated that a person identified with conservatives ignored politics except for a once-weekly partisan TV show, it is doubtful many scholars of political communication would expect such a person to be on a clear path to highly selective partisan selective exposure and a very strong identity because the baseline level of communication seems too low.

Even in the absence of threat, identities and attitudes may have a "use it or lose it" quality. In other words, there is an inherent need to engage in attitude-affirming activities, like communication, to maintain their strength. This claim does not seem to have been tested or even proposed in prior research, but it can provide a simpler (or simplified) explanation for why and how communication and attitudes ultimately self-regulate rather than spiral under normal circumstances. The idea is that identities and attitudes inherently need active maintenance rather than maintenance only being needed because of persistent threats brought on by external forces or competing identities. Without any affirming activities, it is hard to believe a person could continue to hold a strong attachment. In the previous example, the reason one does not read this hypothetical person as at risk for a positive feedback loop is because a person who engages with politics so infrequently is very unlikely to perpetually increase the strength of their identification even if there are no obvious threats to the identity to confront. I refer to this temporal aspect as decay, or a basic tendency for attitude and identity strength to trend toward zero absent any affirming behavior. If these ordinary communications are considered to be individual instances of persuasion or some other sort of effect occurring, then we can instead treat this phenomenon as a natural extension of prior findings on the duration of media effects (Bartels, 2014; Hill, Lo, Vavreck, & Zaller, 2013; Lecheler & de Vreese, 2011). The conservative who watches partisan television once per week can be said to experience a media effect that does not last the entire week, therefore leaving them in a constant state of small-scale variation that is regulated by communication behavior.

Identity maintenance is needed, in this view, to counterbalance decay and keep the identity as part of the self-concept. How much is needed? This is likely related to the strength of identity. By way of analogy, consider the physical law that an object cools faster when it is much hotter than the ambient environment. The rate of decay for a social identity may be similar: the stronger the identity, the more identity maintenance is needed to counterbalance the inevitable decay. People reach an equilibrium in which their media use and social contacts are just identity-consistent enough to counterbalance the decay. This can make for an easier explanation for why people, obviously limited in their ability to self-assess and plan out their behaviors, can manage to reach equilibrium. If identity strength is subject to constant decay, and identity-affirming communication is stable and exerts a constant effect, then the strength of identity will naturally settle at whatever level that results from the combination of decay and affirmation. There are certainly some individual differences that will determine the rate of decay and the dose-response to communication, but speculating on the many possible causes of them is outside the scope of this article.

This has ramifications for how threats to valued identities and attitudes are managed. Those who have a strong identity and already have established a pattern of identity-affirming communication to maintain that identity have that communication to fall back on when identity threat occurs. Threatening information relevant to the identity should only have spillover effects on strength of identification when it cannot be managed in some other way. The persistent use of identity-affirming communication helps to ensure a speedy return to one's norms in terms of collective self-esteem, thereby protecting the strength of identification. The weakly identified, who engage in less identity-affirming communication, are more likely to have to resort to reducing their group identification to manage the dissonance. Some people will change their media use and social contacts to manage threat, but the observed stability of those constructs suggests these may not be the typical strategies.

Suggested here is a small change to the RSM. To the extent the theory has faced any criticism—at least in public—it has focused on the problem of how stable media use and identity are (Scharkow, 2017, 2019). By assuming identities have a natural tendency to decay in strength without affirmation, there is a theoretical basis for why communication can be unchanging in a dynamic system: It exerts a constant identity-reinforcing effect that counterbalances a constant identity decay. Decay can also simplify the RSM, making it easier to study RSM claims in the context of a single attitude or identity and without the need for enumerating threats. As currently constructed, RSM argues the need for identity maintenance is rooted in frequent identity threats—probably minor in severity—that exist in an open system. It also suggests one of the important countervailing forces that prevents positive feedback loops is the fact people tend to have multiple identities that may compete for time and have internal contradictions. It is likely correct that these play that role, but this slight reconfiguration makes these explanations no longer necessary conditions for the avoidance of positive feedback loops. One can assume that any time not spent maintaining a given identity comes at a (potentially small) cost to that identity. Specific threats to the identity can be enumerated, but it is not necessary in this simplified model. Ultimately, stability (or instability) is the end product of decay and these numerous other factors from the model. This claim can plausibly be tested by experiments in which those maintenance communications are removed from the system.

Research Designs and Statistical Tools to Study Stability

Many communication theories would be interested in stability at the individual level and the predictors thereof. In this section, stability and variability are used interchangeably, such that more variability means less stability and vice versa. Most social scientific research on stability comes from psychology, where areas of focus include treating intraindividual variability in cognitive and other constructs as leading indicators of problems related to aging (e.g., Mroczek & Spiro, 2003) as well as intraindividual variability in affect and personality being related to measures of wellbeing (e.g., Greenier et al., 1999; Kernis, Cornell, Sun, Berry, & Harlow, 1993). In any case, a common end goal is to produce a variability estimate for each person under study or otherwise compare subjects in some way based on their level of variability. To avoid the aforementioned problem of claiming null results as evidence of stability, a general principle applies for quantitative research on stability: A statistical test must exist and be performed to credibly test any relationships involving stability. This does not usually take the form of a variable labeled "stability" (or "variation") correlating with some other variable, but the modeling approaches to be discussed can do this in effect.

The best-developed approaches for the study of stability require longitudinal research designs. It is perhaps unsurprising that one needs repeated measurements to see whether something has changed. To generate reliable inferences about the individual-level causes or consequences of variability, the necessary designs require many more measurement periods than are common in communication research. For most questions relevant to communication theory, this likely takes the form of panel surveys but with 10 or more waves. Although the time spacing between each measurement should be determined by theoretical considerations, it is typically most practical to choose frequent measurements (e.g., daily) since this reduces the likelihood of attrition. Such frequent measurements make the ideal designs more like experience sampling or diary studies (e.g., Z. Wang, Tchernev, & Solloway, 2012) than the longer time spacing associated with panel surveys. The considerations relevant to the spacing between measurements primarily concern the plausibility that the constructs would change in this period. For instance, if the focus of the study is exposure to broadcast news, such broadcasts occur on a predictable schedule and there should be no need to measure exposure more frequently than the broadcasts. By contrast, research on something that may occur at any time like media multitasking justifies measurement frequency as often as multiple times per day (Xu, Wang, & Woods, 2019). Researchers may also refer to available data on duration of media effects (e.g., Bartels, 2014; Lecheler & de Vreese, 2011) whenever it exists for more insight into the timelines at issue.

Such designs pose real challenges, both in technical terms and with regard to cost. Each measurement period has the potential to multiply the cost depending on the means of participant compensation and the mode of administration. Researchers will likely have to sacrifice sample quality and perhaps aspects of measurement, which may be an acceptable tradeoff given the unique benefits of these designs (applying the logic of Long, 2021). Note that in terms of statistical power, it is acceptable to make the sacrifice of having relatively fewer participants in exchange for having more measurements of each participant (Clark & Linzer, 2015; Jongerling, Laurenceau, & Hamaker, 2015). Depending on the constructs under study, questionnaires may not be necessary; passive tracking, for instance, can give high-resolution data without the demand for frequent input from participants. Experimentation is also possible: Researchers may administer a stimulus at one or more points in time throughout data collection to assess whether the stimulus seems to promote variability.

Once suitable data are collected, one must use analytical methods that allow estimation of stability. A full description is outside the scope of this essay, but the prevailing approach is to combine the benefits of time series analysis with multilevel models. Recommended by L. Wang, Hamaker, and Bergeman (2012) and developed over several subsequent publications (e.g., Jongerling et al., 2015) is what they refer to as the multilevel AR(1) model. The model allows the researcher to estimate time-structured intraindividual variability in the form of an autocorrelation term, another term or secondary model to capture net intraindividual variability, and additional coefficients that capture the effects of other variables (i.e., variables that cause directional change in the outcome). When desired, the model can estimate the effects of variables on both forms of stability. To make claims about time-structured intraindividual variability, one would focus on regression tests for an autocorrelation coefficient (i.e., whether it differs from zero), and tests of whether it is affected by other variables is measured by including interactions between the autocorrelation and those other variables. A zero autocorrelation in this context represents the most stability insofar that it means a person is expected to immediately

return to his or her trait level of the construct after a momentary change. Any causal variables that tend to push the autocorrelation toward zero would be considered to be promoting stability. For net intraindividual variability, the models include a capability for treating this type of variance as the dependent variable in a regression model; positive regression coefficients would correspond to variables that increase variability (reduce stability). The models can be fit with software used for estimation of Bayesian statistical models (e.g., JAGS, Stan) as well as a preprogrammed version that is fit as a Bayesian structural equation model in recent versions of Mplus (Asparouhov & Muthén, 2020). A significant amount of missing data because of occasional nonresponse is inevitable in such designs so researchers will have to use one of the available methods to account for it (e.g., Honaker, King, & Blackwell, 2011).

Putting these pieces together, one can conceive of a design that would test stability-oriented hypotheses in the RSM framework. A sample of adults would be chosen and measured on a daily to weekly basis until 10 or more measurements are achieved, depending on financial and logistical constraints as well as whether the researcher wants to focus on longer- or shorter-term processes. Each measurement occasion would include concise measurements of the key communication and psychological variables, for example, measures of identity-relevant conversation and strength of that identity. In some cases, communication may be tracked passively so that only the psychological variables would need to be measured via self-report. Analyses would simultaneously estimate whether changes in communication coincide with changes in strength of identification and whether communication promotes both kinds of stability in that psychological variable. Likewise, a model would be fit testing relationships in which fluctuations in identity strength may influence the amount and stability of communication. To probe for the existence of decay, the modeler can test whether people with higher identity strength have a lower over-time trend (operationalized by including a variable representing time and an interaction term with identity strength) net of communication.[3] Further nuance is also possible, such as testing the interrelationships between different types of communication, multiple psychological constructs, and other behaviors.

It may be possible to study stability or test theoretical claims related to stability without collecting the kind of gold-standard data previously described. For instance, if the goal is to explore what occurs when change occurs, it may be possible to selectively sample/identify these people. Kalmijn (2012) shows how certain life events tend to bring about significant changes in one's social networks, such as marriage, first parenthood, and divorce, which mean the content of interpersonal communications is expected to change meaningfully when those events happen. Hobbs (2019) has likewise shown that marriage/divorce (as well as moving residences and retirement) are times when political identity becomes much more likely to change. Targeting these types of populations may be a way to explore theories of stability and change without the use of longitudinal designs that wait for events like them to occur and only among a subset of participants.

Experiments can still play a role as well, not just when integrated into intensive longitudinal designs. Media choice experiments may be particularly enlightening to test how people react to theory-relevant stimuli.

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[3] In practice, when using a multilevel model with identity strength as outcome variable, this test should take the form of allowing the random intercept for identity strength correlate with the random slope for time. A negative correlation would be evidence of decay and is conceptually equivalent to the interaction described.

For RSM research, this could be a design in which identity threat is induced experimentally and choice of identity-affirming media (or not) is the outcome of interest. This would not necessarily prove the existence of over-time stability but would demonstrate whether the theorized identity maintenance process takes place when expected. Another possibility, offered cautiously here, is to test hypotheses about between-group variability in experimental settings. Such statistical tests already exist for checking assumptions (e.g., the equal variances assumption of t tests). Note that this meets the criterion that quantitative claims about stability should generally be based on statistical tests that incorporate the variance in question. However, between-group variance may occur for reasons besides within-person variance, so further research would be needed to assess the tenability of the assumptions involved, statistical power, and so on.

Natural experiments or similar circumstances may also provide opportunities for relatively efficient theoretical tests. For instance, sometimes exogenous or apparently random forces may impose (or more likely remove access to) communications of a certain kind. As an example of this type of circumstance, a test of whether terrorists rely on media coverage to meet their goals of triggering further violence made use of the occurrence of natural disasters that steal headlines from such attacks (Jetter, 2017). One might instead look for outages of specific online media, for instance, for times in which a quasirandom removal of communication can be used to probe for downstream effects of that removal. Finally, simulation-based methods may have something to offer, particularly agent-based models that can test the consequences of various starting conditions that may be derived from theories.

Conclusion

Many foundational debates and findings in communication research make claims or assumptions about the stability of communication, attitudes, and behaviors. Typical research designs, however, make it difficult to test those claims empirically. This, combined with a norm to understand "effects" to mean changes in attitudes or behavior, has led to relatively little research about how communication may cause stability in other variables (or other variables may cause stability in communication). As demonstrated, researching stability empirically is not simple and requires both a careful conceptualization of types of variability and designs that can be demanding of certain kinds of subjects and measurements. As in many cases in quantitative research, conceptualization and operationalization are closely related and it is difficult to speak about one without the other. Potential rewards, however, are significant given how little the discipline has systematically explored questions about stability. A useful starting point for some research questions would be the reinforcing spirals model, but this review is in no way meant to imply there are no other existing theories of communication that can readily incorporate stability. Of course, findings about stability may inspire new models and theories as well.

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