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METHODS OF PUBLIC INFLUENCE

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Public influence is defined simply as attitude change to "fit in" and, therefore, is not intended to or expected to correspond to changes in consumers' private attitudes. Researchers use terms such as peer pressure, compliance, conformity, impression management, and socially desirable responding to connote this particular type of social influence that stems from a need to gain the approval of others. This type of public influence is seen across many domains in marketing. For instance, brands use positive peer pressure to provide discounts as incentives for healthy behavior (e.g., Walgreens), companies target influential individuals rather than broad segments (i.e., *influencer marketing*), and consumers rely on popular mobile applications on consumer opinion and feedback to define what is socially accepted (e.g., Yelp).

This public—or normative—influence is often contrasted with informational influence, which is commonly viewed as attitude change based on others' attitudes, beliefs, and behaviors due to a belief that these social majorities provide accurate information (Festinger, 1954). Yet, because informational influence changes consumers' personal or private attitudes, public influence is not traditionally viewed as inducing "real change," despite it being highly consequential. However, the consequential nature of public influence is precisely the reason to fully understand the nature of the construct. Thus, this chapter seeks to document the dominant means by which public influence is studied within consumer psychology in an attempt to emphasize the importance of public influence for future research.

Given this goal, the chapter is structured such that we first provide a brief overview of social influence before discussing public influence more directly. We then outline the various methods that have been used to study public influence in consumer psychology. Finally, we raise questions regarding critical conceptual and methodological issues within this area before ending with a discussion of new methodological directions we find promising in the evolution of the study of public influence.

A Brief Overview of Social Influence

Our attitudes and actions have the potential for immense impact on others. Researchers refer to this impact as *social influence*, which is more formally defined as any influence on individual feelings, thoughts, or behavior that is created from the real, implied, or imagined presence or actions of others (Latané, 1981). This influence is instrumental to several of the more fascinating and controversial

demonstrations of human behavior, such as Asch's (1951) line studies on conformity, Darley and Latané's (1968) work on the bystander effect and diffusion of responsibility, Milgram's (1963) demonstrations of extreme obedience, Zimbardo's (1971) revelation of the power of roles, and Cialdini's (1993) seminal insights into persuasion tactics.

Given its broad impact, social influence has been deconstructed into various categories or typologies (Deutsch & Gerard, 1955; Kelman, 1958; Latané, 1981). One of the more popular typologies that has emerged from this deconstruction distinguishes between informational and normative influence (Deutsch & Gerard, 1955; see also Burnkrant & Cousineau, 1975). In lay terms, these types of influence are often labeled as private and public influence, respectively.

Informational (or private) influence relates to the need for individuals to be correct. One of the better-known illustrations of informational influence is the principle of social proof, which relates to individuals using social information to identify the correct way to behave (Cialdini, 1993). For instance, college students reported an intention to decrease their bottled water consumption by more than 25% when provided with both information about the negative effects of bottled water consumption and normative information regarding the percentage of other students who were already attempting to reduce their bottled water consumption (van der Linden, 2013).

Normative (or public) influence, on the other hand, relates to the need for individuals to be accepted. One of the better-known illustrations of normative influence is peer pressure, which relates to individuals using social information to gain social acceptance with a target group (Lascu & Zinkhan, 1999). For instance, freshman college students' anticipated alcohol consumption is directly related to their perceived prevalence of drinking on campus (Rimal & Real, 2005). Moreover, people will increase their willingness to try illicit drugs (e.g., cocaine) if doing so will increase acceptance by others (Mead, Baumeister, Stillman, Rawn, & Vohs, 2010). Importantly, then, the need to gain social acceptance is critical to defining normative influence. Thus, even if consumers use public contexts to signal their identity to themselves (e.g., *self-signaling*; Quattrone & Tversky, 1984), normative influence is driven by the need for social (rather than self-) acceptance.

Beyond the needs met by these distinct types of social influence, informational and normative influence vary in the extent to which they impact individuals' private versus public attitudes and behaviors. Specifically, informational influence is seen as generating private acceptance, whereas normative influence is seen as generating public compliance *absent private acceptance* (see Kelman, 1958). To illustrate this important difference, consider two individuals who learn that the majority of people favor a particular style of jeans. Though this social information should influence both individuals to have favorable attitudes toward the jeans (Festinger, 1954), one individual may hold that favorable attitude privately because the social information about the jeans signals high quality (i.e., informational influence), whereas the other individual may hold that same favorable attitude publicly because the attitude reflects a trend that can gain social approval independent of the quality of the jeans (i.e., normative influence). In other words, informational influence impacts private acceptance that may or may not correspond to public compliance, whereas normative influence impacts public compliance absent private acceptance.

Related to this last point, it is possible for a dynamic relationship to exist between these two types of influence. That is, though understudied, it is quite possible that, in the process of satisfying a need for social approval, individuals' decisions may subsequently satisfy a need for correctness. For instance, individuals may purchase a brand of jeans to gain social acceptance but come to favor the jeans for their comfort. Yet, although this dynamic process is possible, our interest is in the independent effects of these types of social influence.

In summary, then, social influence is both ubiquitous in its impact and controversial in its impact on behaviors related to conformity, obedience, social identity, and interpersonal engagement. Moreover, researchers have classified social influence into different types (informational vs. normative) that reflect distinct needs in the individual (accuracy vs. approval). Finally, these different types of social influence impact individuals' attitudes in different ways (private acceptance vs. public compliance).

The Importance of Public Influence

Given the scope of research on social influence, we focus this chapter on normative social influence and the methods used to study public attitude or behavioral change not intended or expected to correspond to private acceptance. We choose to focus on public influence for three reasons.

First, normative influence is typically not seen as *real change* in individuals' attitudes or behavior because of a lack of a corresponding private acceptance. That may be true from a literal perspective; consumers may purchase a brand of jeans solely to gain the approval of others, and, as such, that purchase may not correlate with an equally favorable private attitude toward the brand. However, the lack of private change is unfortunately often conflated with a lack of impact. That is, public compliance can exert a significant impact on others, and that impact is agnostic to whether the public compliance corresponds to private acceptance. This point is especially important given that individuals tend to under-detect normative influence (Nolan, Schultz, Cialdini, Goldstein, & Griskevicius, 2008), and therefore a lack of private acceptance may blind individuals to the impact of this type of influence.

Second, normative influence is dependent on situational constraints. For instance, consumers who bought a brand of jeans solely to gain the approval of others should only wear those jeans in situations that expose them to that group. Although lack of cross-situational stability is a core feature of weak attitudes (Petty & Krosnick, 1995), individuals often have control over their situations, which can lend itself to a situational selectivity that promotes behavioral consistency (Sherman, Nave, & Funder, 2010). In addition, situational consistency can be facilitated not only by the individual, but also by those with whom the individual engages and interacts (Malloy, Barcelos, Arruda, DeRosa, & Fonseca, 2005). Thus, although normative influence might be situationally dependent, there is considerable evidence that this normative influence can be pervasive owing to situational consistency.

Third, normative influence is a critical component of the diffusion of information (Rogers, 1995). That is, individuals' social behavior is critical to how influence spreads to others. At a very fundamental level, then, engaging in public compliance can subsequently influence others to act in similar ways. Asch's (1951) classic line study demonstrates this point, as individuals' decisions were influenced by the answers of others in the study, even though those answers were overtly inaccurate responses made by laboratory confederates. Thus, normative influence has a way of self-propagating through means that can be independent from privately held preferences.

The Effect of Public Influence

As noted, the key motivation underlying public influence is a need to be accepted or liked (Deutsch & Gerard, 1955; Kelman, 1958). As such, our review focuses specifically on methods that assess individuals' beliefs, attitudes, and behaviors that provide them with the opportunity to gain the approval of others. This distinction is important, as it differentiates the specific effect of public influence from the broader influence of intergroup relations. For instance, research on social facilitation demonstrates that the mere presence of a group increases performance on simple tasks but decreases performance on difficult tasks (Markus, 1978; Zajonc, 1965). Relatedly, a wealth of research demonstrates the importance of people using groups as a means of either satisfying their conflicting needs of belongingness and uniqueness (Brewer, 1991) or signaling to the group important aspects of their identity (Berger & Heath, 2007). Here, however, we focus explicitly on the extent to which normative social influence elicits public compliance as a means of satisfying approval needs.

Though specific, this focus on public influence stems from the wealth of research demonstrating the impact of normative compliance in consumer psychology. The presence of others—either real or implied—leads to increased impulse purchasing when impulse buying is perceived as appropriate (Rook & Fisher, 1995), greater overclaiming (e.g., rating one's familiarity with a list of ostensibly famous authors; Paulhus, Harms, Bruce, & Lysy, 2003), heightened embarrassment when purchasing socially embarrassing products (e.g., condoms; Dahl, Manchanda, & Argo 2001), elevated risk-taking (Kogan & Wallach, 1967), and greater willingness to purchase luxury goods (Bearden & Etzel, 1982). Furthermore, this impact is consequential; researchers have linked public influence to increased consumption of alcohol and illicit drugs among high-school and college students (Rose, Bearden, & Teel, 1992), as well as efforts to engage in sustainable practices (Goldstein, Cialdini, & Griskevicius, 2008; Kallgren, Reno, & Cialdini, 2000; Schultz, 1999). For a more thorough review of the effects of public influence, see Cialdini and Goldstein (2004).

Assessing Public Influence

Public influence is often categorized as a form of socially desirable responding and, as such, is largely recognized as a response bias (Edwards, 1957; Jones & Sigall, 1971; Paulhus, 1991; Paulhus et al., 2003; Steenkamp, De Jong, & Baumgartner, 2010). Consequently, researchers' interest in public influence is traditionally rooted in the motivation to control or eliminate the bias altogether. However, by understanding the different means by which public influence has been studied, researchers have established a variety of methods by which to tap into public influence.

Direct Measures

One of the more influential measures of public influence was an assessment of social desirability (Edwards, 1957). Using a binary response format, participants indicate whether they agree or disagree with a series of statements that present socially acceptable or unacceptable behaviors. The intent is to assess whether respondents are engaging in impression management and, as such, misrepresenting themselves. However, Edwards's (1957) seminal scale stemmed in part from the belief that social desirability was a form of psychopathology reflecting tendencies toward maladjustment. In response, Crowne and Marlowe (1960) developed a subsequent scale that focused solely on responding in socially and culturally acceptable ways. For instance, participants high in social desirability are those who attribute to themselves statements that are desirable (e.g., "I never hesitate to go out of my way to help someone in trouble") and reject statements that are undesirable (e.g., "I like to gossip at times"). Variations on this latter scale have been developed (for reviews, see Nederhof, 1985, and Paulhus, 1991), including updates to the original Crowne and Marlowe (1960) scale (Stöber, 2001). Yet the intent of these scales remains consistent with Edwards's (1957) original goal of assessing a bias toward socially acceptable responding.

Apart from assessment that focused directly on social desirability, researchers have also focused specifically on measures of normative influence. Most notably, Bearden, Netemeyer, and Teel (1989) generated a scale that focused on consumers' susceptibility to interpersonal influence. This scale, however, consists of two dimensions—one related to informational influence and another related to normative influence. The normative subscale consists of eight items and, though it does not focus on public influence in general, the scale does assess individuals' willingness to engage in public compliance through their purchase decisions. For instance, items such as "I rarely purchase the latest fashion styles until I am sure my friends approve of them" and "I often try to buy the same brands that they buy" directly tap into individuals' desire for acceptance from others through their purchase behavior.

Situational Manipulations and Controls

Perhaps the most established method of testing for public influence in consumer psychology is when researchers directly manipulate whether individuals' answers are or will be made in either a private or public context (Ariely & Levav, 2000; Burnkrant & Cousineau, 1975; Ratner & Kahn, 2002; Wang, Zhu, & Shiv, 2011). The logic for this manipulation is that socially desirable responding will be higher if responses are to be made public, as the underlying motive is to attain the acceptance and approval of others (Kelman, 1958; Paulhus, 1984). Thus, behaviors that happen only in public—not private—contexts are presumed to stem from public influence. For instance, consumers are more likely to seek out variety rather than a favored option, as forgoing variety is perceived by others as negative (Ariely & Levav, 2000; Ratner & Kahn, 2002). However, this effect was shown to only occur when the decisions were made or expected to be made in public; in private, consumers were more likely to choose their favored option.

The benefit of manipulating the public nature of the context is that it offers a positive test of public influence. That is, it is reasonable to assume that behaviors that occur in a public—but not private—context are motivated by normative influences (Kelman, 1958; Paulhus, 1984). However, one should keep in mind that consumers engage in public behaviors for reasons apart from solely attaining social acceptance. As noted previously, one common motivation for consumers is to use public contexts to engage in behaviors that satisfy self rather than social acceptance (Quattrone & Tversky, 1984). For instance, certain individuals use brands as a way to validate positive characteristics about the self (Park & John, 2010).

Thus, although manipulating the public nature of the context has its merits as a situational means for detecting normative influence, it is critical for researchers to develop other direct methods by which to test for public influence. In this light, limited work focuses on direct manipulations that circumvent public influence. Interestingly, these manipulations provide a unique perspective on public influence and a unique means by which to test for public influence, as public influence should be supported in instances where that influence cannot be controlled.

To illustrate, one of the more creative and well-known strategies to circumvent public influence is the *bogus pipeline* (i.e., BPL; Jones & Sigall, 1971). In this procedure, participants are hooked to a series of electrodes and informed that their physiological responses are being monitored to detect whether they are telling the truth or not. The reasoning behind the procedure is analogous to a lie detector test; why lie when the researcher will be able to know the truth? Importantly, use of the bogus pipeline is shown to significantly reduce public influence by motivating participants to be consistent in their attitudes (see Roese & Jamieson, 1993). Indeed, this method served as a precursor to the initial implicit attitude assessment (i.e., the *bona fide pipeline*; Fazio, Jackson, Dunton, & Williams, 1995).

Additionally, social desirability concerns are mitigated when individuals are provided an opportunity to "save face" (Holtgraves, Eck, & Lasky, 1997; Krupnikov, Piston, & Bauer, 2016). For instance, participants were more likely to say they did not know a current event when the question contained face-saving wording (e.g., Have you had a chance to familiarize yourself with NAFTA?) than when the question did not contain face-saving wording (e.g., Are you familiar with NAFTA?; Holtgraves et al., 1997). Relatedly, researchers have shown that stereotypical responding to ethnic minority and female political candidates is significantly attenuated when participants are provided an opportunity to explain their decision (Krupnikov et al., 2016). In other words, support for these candidate groups unanimously decreased when potential voters were allowed to justify their response. Of course, that does not mean their justification is accurate, but the results are compelling in that the researchers decrease socially acceptable responding merely by presenting a face-saving opportunity.

Another contextual means of circumventing social desirability concerns is the unmatched count technique (Raghavarao & Federer, 1979; for a recent example, see Gervais & Najle, 2018). In this technique, participan
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this technique, participants are randomly assigned to one of two lists that contain the same sets of innocuous items (e.g., I exercise regularly) and are asked to indicate, in general, how many of the statements are true of them. The lists contain the same items with the exception of one: The focal, socially undesirable item (e.g., I have tried cocaine). Given that participants only indicate the truth of the total number of statements on the list, they are not endorsing a particular statement as true of themselves. Researchers can then compare base rates across lists and attribute any differences across lists to the socially sensitive item.

Relatedly, researchers have relied on manipulating the nature of question wording as an alternate means of attenuating the influence of social desirability (Fisher, 1993; Jurgensen, 1978). To illustrate, Fisher (1993) had undergraduate participants evaluate a new product. Importantly, though, participants were asked to rate the product based on how either they (direct questioning) or a "typical college student" (indirect questioning) feel about it. Indirect questioning was shown to reduce socially desirable responding, though only when the product was associated with normative outcomes. In other words, the type of questioning only altered responses to items that participants rated as eliciting a favorable reaction from students. This research is consistent with work on perspective-taking as a debiasing technique (Galinsky & Moskowitz, 2000; Todd, Bodenhausen, Richeson, & Galinsky, 2011).

Finally, researchers have raised the possibility of heightening the anonymity of responses as a means of reducing social desirability (c.f., Edwards, 1957). Consistent with this notion, research shows that impression management motivations decrease when responses to social desirability scales are to be anonymous versus public (Paulhus, 1984). Importantly, anonymity can take multiple forms. For instance, research shows that the mere expectation of future interaction with anonymous groups is sufficient to heighten public influence (Lewis, Langan, & Hollander, 1972). Specifically, participants who perceived they were interacting with anonymous others on a task and were told they would be responding last in the sequence exhibited greater public compliance when they were further led to believe they would be interacting with that same group again. The argument for anonymity is intuitive and echoes the basis for manipulations of public versus private contexts: Public influence should only matter when responses allow individuals to attain the acceptance and approval of others (Kelman, 1958). Interestingly, as demonstrated by Lewis and colleagues (1972), this approval can come from even anonymous others who provided repeated interaction.

Personality Correlates

Given the importance of social acceptance to public influence, researchers have sought to identify those individuals who are more or less prone to this need. As a consequence, a wealth of research elucidates a host of individual differences that promote public influence. Of course, as reviewed, researchers have shown individuals do vary in their susceptibility to social influence more generally and normative influence in particular (Bearden et al., 1989). Here, however, the focus is on the innate need for social acceptance and the personality dimensions that heighten individuals' likelihood to seek out this acceptance.

Arguably, the personality trait that attracted the most attention in this domain is self-monitoring (Snyder, 1987; Snyder & Gangestad, 1986). Self-monitoring describes an individual difference in the extent to which individuals vary their beliefs, attitudes, and behavior to align with social norms, with those high in self-monitoring motivated to adhere to social cues and adapt their behavior to coincide with those cues (Lennox & Wolfe, 1984; Tyler, Kearns, & McIntyre, 2016; for a review, see Gangestad & Snyder, 2000). The clear implication of this scale for public influence is that high self-monitors should be most susceptible to align with social expectancies or norms. Consistent with this premise, researchers have treated the self-monitoring scale as a dispositional corollary to manipulations of public and private contexts (Graeff, 1996; Ratner & Kahn, 2002; see also, Becherer & Richard, 1978).

Relatedly, researchers have also focused on the role of self-esteem in public influence. Self-esteem is characterized as individuals' global evaluation of the self (Greenwald & Banaji, 1995; Rosenberg, 1965; see also, Gray-Little, Williams, & Hancock, 1997). One of the more contentious findings in this domain is that those low in self-esteem are more susceptible to social influence (Janis, 1954). Although the nature of that relationship has been qualified (Leventhal & Perloe, 1962; Nisbett & Gordon, 1967), the intuitive nature of the initial finding remains relevant when one considers the need for acceptance (Klein, 1967). For instance, Baumeister (1982) presented participants with bogus personality feedback. The results revealed that those low in self-esteem were more likely to act in ways that were consistent with the bogus feedback, though only when the bogus feedback was public. In other words, those low in self-esteem only adapted their behavior to match the bogus feedback when it would allow them to attain acceptance from others. The logic fits with dominant models that argue that self-esteem serves as an internal cue to one's social value (Baumeister & Leary, 1995; Leary & Baumeister, 2000). As such, reducing individuals' self-esteem should heighten their need to seek out and attain social acceptance and inclusion (Leary, Tambor, Terdal, & Downs, 1995).

Finally, it is worth noting that the impact of personality on public influence may be highly innate. Researchers studying the role of the big five personality traits on social desirability revealed that emotional stability, agreeableness, and conscientiousness were all positively related to socially desirable responding, whereas extraversion and openness were all negatively related to socially desirable responding (DeYoung, Peterson, & Higgins, 2002). Despite more work being needed to understand the relationship between these particular personality dimensions and the need for social approval, the finding remains intriguing, given that these big five traits are considered fundamental to the definition of personality (McCrae & Costa, 1987).

Critical Questions

On balance, there is at least as much unknown about normative influence as there is known. Normative influence is embedded in social relations, and the nature of connecting and communicating with others has been rapidly and fundamentally changing over the last two decades. These changes take the form of new communication channels (e.g., mobile devices), new communication modalities (e.g., personal videos), and new actors (e.g., machines) that together generate fresh forms of widespread social observation. This technology-infused reality poses many new challenges that will require innovative methods to advance normative influence research. Yet critical to advancing this understanding amid these new and ever-evolving challenges is to anchor on the role of normative influence in satisfying individuals' need for social acceptance.

Clarifying Models of Influence

Current models of normative influence posit that individuals are motivated to publicly conform to the majority attitudes and behaviors of desirable groups in order to be accepted by them (Deutsch & Gerard, 1955; Kelman, 1958). These models, then, assume: (a) a meaningful distinction between private and public contexts, (b) an understanding of social majority, and (c) a provision of acceptance. Each of these core assumptions is being complicated by modern technology. Take, for example, the distinction between public and private contexts. In the past, it was clear when a person was in the privacy of his home or being observed publicly. Today, much of one's social network is accessible in private, which means individuals can quickly move in and out of public spheres at any time.

Consistent with this evolving definition of public contexts, Wilcox and Stephen (2012) demonstrate that online social networks provide brief self-esteem boosts, which create a strong incentive to conform online *even when one is physically alone*. Further, the advent of phone cameras and video

streaming mean any behavior can be made public at any time. These developments, along with the constant presence of smart phones that remain psychologically prominent even when switched off (Ward, Duke, Gneezy, & Bos, 2017), suggest that people increasingly exist in a liminal space that is never fully private. Ironically, public influence may now occur mostly in private. Further, how conformity motives are shaped by actual versus digital social presence remains an important and unanswered question.

Further challenging our definition of a public context is an increasing immersion in virtual reality. Belk (2013) describes a process of digital disembodiment to reembodiment that involves redefining and uncovering new aspects of the self in a digital space. How does public influence in the virtual world compare with the real? This question is increasingly critical as the filtering of digital spaces creates "tiny majorities" that consist of pockets of likeminded people. The digital world was originally conceived as a vast sea of accessible information, where public opinion would be easily documented. In actuality, the digital world consists of many small ponds. People may not realize that the attitudes and behaviors they observe online do not constitute a true majority, even across peer groups (Flaxman, Goel, & Rao, 2016). Further, actual and avatar selves often correspond to one another, but people's avatars tend to be enhanced versions of their real selves (Meadows, 2008). Thus, individuals filter digital worlds through stylized self-representations that take visual and pseudo-material forms. Whether and how digital self-discrepancies shape public influence, and the influence of tiny majorities, are yet unknown.

Lastly, social acceptance, which confers self-esteem, ultimately reinforces public influence. In seminal work on conformity, such as Asch's (1951) line studies, individuals could immediately gauge whether their actions garnered acceptance by a proximal group. Indeed, face-to-face interactions are replete with signals of social acceptance that include verbal and nonverbal affirmations (DeWall, Maner, & Rouby, 2009). How digital communication channels disrupt and distort public influence by altering perception of acceptance is yet unclear. Work on ostracism suggests that individuals are highly sensitive to subtle signs of meaningless exclusion, such as not being tossed a "digital ball" in an anonymous game (Williams, Cheung, & Choi, 2000). New frontiers of normative influence research will need to address forms and measures of online acceptance in order to understand where a lack of perceived acceptance—regardless of actual acceptance—undermines or amplifies conformity.

In summary, novel methods for disambiguating beliefs, attitudes, and behaviors motivated for normative or informational motives are required as the contexts in which public influence occurs habituates and expands. For example, in contrast with fictional uses of electrical stimulation meant to increase honest reporting (Jones & Sigall, 1971), new research demonstrates that, by literally tapping into cognitive systems via electrical stimulation of brain regions, honesty can be enhanced (Maréchal, Cohn, Ugazio, & Ruff, 2017). Just as the implicit association test (Fazio et al., 1995; Greenwald & Banaji, 1995) was a significant leap forward in measuring privately held associations, so too might new technologies permit more accurate assessments of private beliefs held by individuals increasingly adept at maintaining a particularized public image at all times.

Isolating the Influence

Understanding where normative influence might occur is just as important as having valid measurement instruments. Individuals do not evenly affect one another (Devine, Clayton, Dunford, Seying, & Pryce, 2001; Shestowsky, Wegener, & Fabrigar, 1998). Rather, certain individuals—celebrities, politicians, spiritual leaders, teachers, and so on—have outsized effects on others. In addition to these prominent figures, ordinary people vary in their level of influence as a function of how they are connected to peers and whether they are critical sources of information. For example, Lee, Cotte, and Noseworthy (2010) show that consumers who are popular (central in their social network) are more

influential than those who are unpopular (peripheral in their social network). Further, these authors show that being popular also means being influenced more by others. In other words, popularity both increases opinion leadership *and* increases the extent to which individuals are influenced by others, which presumably occurs because central actors must maintain relations with a number of different parties, and conformity facilitates positive social relations.

This is not to suggest that only those at stage center are influential. Classic work in social psychology indicates that exposure to minority opinions causes people to elaborate more on issues and results in greater divergence in thought (Nemeth, 1986; Wood, Lundgren, Ouellette, Busceme, & Blackstone, 1994). If weighed as divergence in opinion, a quick scan of the American political conversation indicates that new media are making many minority voices heard. Whether and how minority opinions sway majority attitudes and behaviors form a rich area for ongoing research. Further, because individuals are naturally resistant to persuasion by minority opinion (Tormala, DeSensi, & Petty, 2007), the evolving role of minority influence is unclear. Perhaps individuals are unaware or unwilling to acknowledge minority influence to the same extent as they do for majority influence (Nolan et al., 2008). Or, perhaps minority influence is domain-specific, as it might be for creative or innovative products (Clarkson, Dugan, Crolic, & Rahinel, 2018). Methods for detecting minority influence, including ways in which minorities might shape majority influence over time, remain an important topic for future research.

As a cautionary note, searching for evidence of influence in social networks often results in false positives. As networks evolve over time, individuals change their behavior owing to true effects of normative influence (e.g., conformity to an opinion leader) or owing to general tendencies to gravitate toward similar others (i.e., selection effects; Steglich, Snijders, and Pearson, 2010). Without proper statistical treatment, then, what is taken as influence (e.g., one person sharing the opinion of a central other) may in fact be selection (e.g., two likeminded people becoming friends). Both experiments and dynamic network modeling approaches help make this distinction. In addition, the tendency to conflate normative influence and selection may have important implications for lay people as well as researchers. Indeed, the propensity for public influence may be overestimated, which places a clear onus on researchers to take the appropriate steps to properly control for outcomes related to social influence.

Understanding the Influence

Apart from technological trends that are shaping public influence and making it more accessible to researchers, there are yet more basic questions related to the nature of public influence. Persuasion researchers traditionally model influence as the active attempt of one person or group to change the attitudes or behaviors of others (Petty & Cacioppo, 1981). Under this framework, an individual decides whether to conform in order to gain acceptance (see Gass & Seiter, 2015). However, influence may occur through a variety of processes that operate outside this core model. For example, past work shows that children are more apt to comply with one-time experiences, as they view a single behavior as representative of a social norm (Schmidt, Butler, Heinz, & Tomasello, 2016). Are adults in novel social contexts similarly vulnerable to such overestimation? This might explain, for example, why tourists often strike locals as strange, as tourists might assume that a particular observed behavior (e.g., smoking cannabis) is normal and behave accordingly, even in public spaces where locals would never engage in such behaviors. Thus, such a process could potentially backfire, where conforming to an "assumed norm" results in *less* acceptance by a group who views the conforming person as deviant in some way.

Also, conformity can occur even among strangers. Recent work has uncovered a type of public influence termed "social defaults," whereby individuals will choose for themselves whatever they

observe others choosing (Huh, Vosgerau, & Morewedge, 2014). Of particular interest, this work demonstrates that social defaulting is more likely for low- (vs. high-) risk decisions and when individuals are in private (vs. public). For instance, consumers may be unsure which light bulb is best and simply base their choice on the choice of someone else (see Otto, Clarkson, & Kardes, 2016). Because individuals seek optimal distinctiveness within their peer group (i.e., people avoid appearing too similar to their friends; Brewer, 1991), it is possible that they are more likely to align their behavior with strangers as an ironic means by which to attain social acceptance.

Special attention should also be paid to other forms of subtle influence. For example, work in biology has demonstrated that fruit flies reset each other's circadian clocks via social cuing (Levine, Funes, Dowse, & Hall, 2002). It is well established that people influence each other's emotions and mood, even via online social networking platforms (Coviello et al., 2014). However, it is unclear whether and how more internal processes, such as circadian rhythm or vagal tone, are shaped by public influence. In how many ways do we conform, and what are the biological or social pathways that might enable someone to conform to others' biology?

Additionally, public influence may be a byproduct of an individual's or group's motives that are ancillary to the influence itself. Consider politicians as an example. In their pursuit of power, politicians attempt to behave in ways that reflect the group whose support they need, and political leaders purposefully and inadvertently change social standards. It is unclear how this bidirectional influence evolves, or what filtering and constructing mechanisms guide the attitudes and behaviors of politicians. Shadows of such a process have been uncovered though. For example, recent work has shown that a president who is not vocally supportive of LGBT people increases the level of stress in that population (Gonzalez, Ramirez, & Galupo, 2018). Their position makes those in power uniquely difficult to study, so crafting such a program of research would constitute an advancement in methods and theory.

New Directions

Lab experiments have been the dominant means of examining public influence. As previously mentioned, however, a variety of exciting methodologies exist as alternates to the traditional laboratory experiment. In this section, we detail several methodological alternatives by imperatives meant to advance public influence research.

Moving beyond Self-Reports

Self-reports are forms of data collection that involve participants selecting responses that best reflect their attitudes or behaviors absent researcher involvement. There are many issues with self-reports, but their relative ease continues to make them a popular choice among researchers. However, the self-report methodology is especially troublesome in public influence research for three reasons. The first is demand characteristics. Because individuals are motivated to maintain a favorable public image, they are less likely to admit attitudes or behaviors that reflect poorly on them (Crowne & Marlowe, 1960; Edwards, 1957; Fisher, 1993; see also, Paulhus, 1991). For example, individuals may not want to disclose how they feel about minorities or how many sexual partners they have had in the past. Design solutions include allowing respondents to "save face" (Krupnikov et al., 2016) or assessing base rates while not requiring participants to explicitly endorse a socially undesirable issue (Gervais & Najle, 2018). Also, past work shows that using softened language can reveal effects of public influence. For instance, Stock and colleagues were able to detect social influences on willingness to have sex without a condom (Stock, Gibbons, Beekman, & Gerrard, 2015). The most straightforward measure would have been to simply ask about the likelihood of having sex without

a condom, yet most students would be unlikely to report unsafe behavior if asked in this manner. Instead, the researchers used a mental simulation (going to a party and finding someone very attractive) and a safer-sounding option ("have sex and use withdrawal"). Although effects were observed, the estimates of effect size may still be biased.

A second issue with self-reports relates to the level of self-knowledge accessible to participants. Nisbett and Wilson (1977) famously show that individuals are unable to identify important causes of behavior and go so far as to claim that people have very limited (if any) abilities to introspect. This research may explain why self-reported smartphone usage does not correlate with actual smartphone usage (Andrews, Ellis, Shaw, & Piwek, 2015). In many situations, participants may be clueless and will instead draw upon implicit theories or situational cues when estimating behaviors.

A third issue with self-reports is that of mere measurement effects. For example, asking people whether they are satisfied with a product (vs. not asking them) can increase product sales (Dholakia & Morwitz, 2002). As an analog, one could imagine that merely asking individuals to report whether they would conform might influence actual conformity. In this sense, research may construct, rather than reflect, reality.

There are several alternatives to self-reports that researchers should carefully assess when considering relevant methodologies. First, researchers may intervene in real-world settings and observe changes in behavior. This was accomplished, albeit with some controversy, on the popular social media website Facebook. Researchers manipulated the level of positive and negative social content that appeared in users' news feeds and observed subsequent effects on the amount of positive and negative content that users subsequently posted (Kramer, Guillory, & Hancock, 2014). The authors found that the level of positivity observed influenced the level of positivity expressed. Here, the researchers can be sure of the validity of their effects because users (a) were unaware they were being manipulated and (b) engaged in real online posting behaviors intended for a consequential audience (i.e., their online social network). Natural experiments involving trace or scraped data could inform similar research designs.

Another exciting methodology comes from neuroscience. Brain scans serve as an increasingly accessible method of detecting changes in preferences. For example, Plassmann and colleagues show that manipulating the purported price of wine shapes how pleasing it is to consumers (Plassmann, O'Doherty, Shiv, & Rangel, 2008). Here, pleasure was inferred from neural activity rather than direct questioning. One could imagine bringing these methods to public influence research. For example, how do pleasure centers correspond to information that a brand or behavior is popular among a desirable group? Whereas people may be inclined to report in ways that imply nonconformity, they might still experience pleasure in ways that imply conformity. This, along with other biometric measures such as galvanic skin response, will serve to advance our understanding of public influence.

Broadening the Scope

Public influence occurs in a complicated sphere with many interrelated variables. Many researchers ignore this complexity as they isolate particular processes. Future work may employ new methods that permit the complexity to be embraced. For example, recent work uses both social network analysis and a field experiment to demonstrate that seeding elementary school networks with students who are trained to take strong, public anti-bullying stances can work to reduce conflict in schools (Paluck, Shepherd, & Aronow, 2016). Further, this work shows that these anti-conflict norms are more effective when their backers are students with key influence in the school network. Such an approach could be used in a consumer domain to understand, for example, how marketing tactics combine with social referents to maximally increase purchases in a given population.

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Further, these networks need not be real. Advancing virtual reality technology permits new forms of experimentation. Ecological validity, here, requires what computer scientists call "presence" or the feeling of being that relates to whether a person senses they are in a real space. Presence is affected by visual elements as well as how a person navigates the space—walking in real life that corresponds to walking in a virtual environment strongly relates to a high level of presence (Lorenz et al., 2015). Researchers validating their virtual realities may use the ITC-Sense of Presence Inventory (Lessiter, Freeman, Keogh, & Davidoff, 2001). Virtual reality is an exciting frontier because it permits a level of control that is not achievable in the real world, which permits the study of many factors at once.

Finally, it is worth noting that individuals spend their time in a variety of contexts throughout their day. For instance, in a given day, individuals might find themselves at home with family, at work with colleagues, at the gym with friends, and interfacing with social networks. Each of these spaces has a different set of public influences that may bias each other. For example, if both work and peer groups place a premium on apparel, will these different normative standards interact such that individuals feel substantial pressure to conform by dressing "smartly"? Owing to the variety of contexts individuals face throughout their day, experience sampling methodology (ESM; Csikszentmihalyi & Larson, 2014) may serve as a useful instrument to tap into these changing contexts. ESM involves capturing and modeling participants' experiences and psychological states as they are occurring throughout the day in order to construct a rich data snapshot across contexts. This methodology, combined with multilevel modeling approaches, may help us to understand how various forms of embedded and unembedded public influence shape consumer psychology and decision-making. Indeed, this approach may be particularly useful for capturing and modeling dynamic processes. It is possible, for example, that what begins as conformity becomes a privately held belief, as individuals use their own behaviors to interpret and construct their self-concept (Bem, 1972). Public influence may thus have very personal implications as it shapes behaviors over time.

Concluding Remarks

Public influence has served as a source of intrigue to consumer psychologists for decades, and its power and pervasiveness are best demonstrated in the wealth of research dedicated to understanding its effects on consumers' beliefs, judgments, attitudes, and behavior. This chapter aimed to document the dominant means by which researchers have directly surveyed, situationally manipulated, and dispositionally identified public influence and the core need for social approval this influence is intended to satisfy. Additionally, we raised questions critical to the manner in which public influence is studied and speculated about new methodologies to address the reality of the evolving definition of public influence and, thus, the importance of factors that facilitate individuals' need for approval and acceptance. In doing so, this chapter speaks to the importance of the methodologies with which public influence is studied in the hope that these methods provide the insight necessary to further develop the conceptual frameworks by which public influence is to be understood.

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