



OPEN ACCESS

EDITED BY

Guy Itzchakov,
University of Haifa, Israel

REVIEWED BY

Kevin Lanning,
Florida Atlantic University, United States
Mirra Noor Milla,
University of Indonesia, Indonesia

*CORRESPONDENCE

Dale T. Miller
✉ dtmiller@stanford.edu

RECEIVED 18 July 2023

ACCEPTED 15 September 2023

PUBLISHED 16 October 2023

CITATION

Miller DT (2023) A century of pluralistic
ignorance: what we have learned about its
origins, forms, and consequences.
Front. Soc. Psychol. 1:1260896.
doi: 10.3389/frsps.2023.1260896

COPYRIGHT

© 2023 Miller. This is an open-access article
distributed under the terms of the [Creative
Commons Attribution License \(CC BY\)](#). The use,
distribution or reproduction in other forums is
permitted, provided the original author(s) and
the copyright owner(s) are credited and that
the original publication in this journal is cited, in
accordance with accepted academic practice.
No use, distribution or reproduction is
permitted which does not comply with these
terms.

A century of pluralistic ignorance: what we have learned about its origins, forms, and consequences

Dale T. Miller*

Graduate School of Business, Knight Management Building, Stanford, CA, United States

The concept of pluralistic ignorance was introduced a century ago by social psychologist, Floyd Allport. It has been broadly applied in the social sciences, including psychology, sociology, political science, and economics. Pluralistic ignorance is a situation in which group members systematically misestimate their peers' attitudes, feelings, and private behaviors. This paper reviews the range of phenomena that pluralistic ignorance has been invoked to explain, the different accounts that have been offered for its emergence, and the various techniques that have been employed to dispel it. It distinguishes between micro and macro variants of pluralistic ignorance and discusses the challenges involved in generating a theory that encompasses both variants.

KEYWORDS

pluralistic ignorance, group misperception, spiral of silence, illusion of transparency, impression management, false uniqueness, norm misperception

1. Introduction

The concept of pluralistic ignorance has a long past but a short history, to use Hermann Ebbinghaus' (1908) phrase. Floyd Allport coined the term 100 years ago (Allport, 1924; Katz and Allport, 1931). For many years thereafter it received scant theoretical or empirical attention, attested to by the term's meager 13 entries in *PsychInfo*'s data base in the 5 decades following its coinage, a number surpassed in the year 2022 alone. Pluralistic ignorance is a situation where the plurality (group) is ignorant of (misperceives) itself—its beliefs, perceptions, and practices. The group experiencing pluralistic ignorance is not actually ignorant in the sense of being unsure as to where it stands but is rather confidently mistaken as to where it stands (O'Gorman, 1986). Alternative descriptions of the phenomenon include second-order misperceptions of first-order beliefs (Bicchieri, 2016; Schwenkenbecher, 2022) and collective misperceptions (Miller and Prentice, 1994; Grant et al., 2009). Familiar illustrations are circumstances where “no one believes, but everyone believes that everyone else believes” (Katz and Schanck, 1938) and in which “no one is certain, but everyone is certain that everyone else is certain” (Miller and McFarland, 1987).

Despite being a common citation for pluralistic ignorance, Allport (1924) *Social Psychology* did not mention the term; that awaited his 1931 book co-authored with his student, Daniel Katz (Katz and Allport, 1931). What Allport did discuss in his earlier tome was the “illusion of universality of opinions.” He traced this “illusion,” which he later renamed pluralistic ignorance, to two facts: (1) social life depends on individuals having knowledge of their peers' habitual feelings and practices, and (2) individuals must infer this knowledge from limited and thus potentially misleading information.

Pluralistic ignorance is a group-level phenomenon: Individuals cannot be pluralistically ignorant, only groups can (Sargent and Newman, 2021). This claim does not assume that groups have a material reality distinct from that of their constituent members. It simply means that for pluralistic ignorance to exist, it requires more than individual group members

misperceiving the position of their peers; their misperceptions must be shared, that is a collective error in impressions of their peers (Miller and Prentice, 1994; Kitts, 2003).

The collective and systematic nature of the misperceptions that characterize pluralistic ignorance contrasts to the relative, individual-based judgments that constitute the false consensus effect, the tendency of people to assume that others' beliefs, behaviors, or feelings are more like their own than is the case (Marks and Miller, 1987). The propensity to assimilate estimates of others' attitudes, feelings, and private behavior to those of one's own does not yield collective errors, as these individual judgments at the collective level are self-canceling. Whereas the false consensus effect is defined by a positive correlation between the attribute ratings of the self and others, pluralistic ignorance is defined by a mean difference between group members' actual attributes and their perceptions of the group members' standing on those attributes.¹ For this reason, pluralistic ignorance and false consensus are neither conceptually nor empirically mutually exclusive and can comfortably co-occur (e.g., Prentice and Miller, 1993; Monin and Norton, 2003; Leviston et al., 2013). For example, the estimates that pro-choice and pro-life proponents' make of the strength of their fellow partisans' commitment to their shared position could systematically over- or underestimate the strength of that commitment (pluralistic ignorance) yet positively correlate with their self-descriptions (false consensus).

A second phenomena often linked to pluralistic ignorance is the false uniqueness effect (Chambers, 2008). The false uniqueness effect, like pluralistic ignorance, is usually defined as a mean difference between judgments of the self and others rather than a correlation between them, in this case a negative one (Suls and Wan, 1987). However, customarily the term false uniqueness refers to the tendency to see oneself as superior on positive attributes (e.g., driving ability, honesty) to the general population (the average person) rather than members of a particular group (Goethals et al., 1991). Further, typically neither the origins nor the consequences of effects characterized as instances of false uniqueness are linked to group dynamics, as is the case with pluralistic ignorance. Like false consensus, false uniqueness is a property of individuals not groups. Individuals can experience false uniqueness but not pluralistic ignorance, whereas groups can experience pluralistic ignorance but not false uniqueness.

2. Puzzles explained by pluralistic ignorance

Traditionally, the concept of pluralistic ignorance has had the role of explaining puzzling group phenomena. The two puzzles it has been invoked most often to explain involve mismatches between psychological representation and collective behavior. The first puzzle involves a divergence between the private attitudes of group members and the group's ongoing social practices. The second puzzle involves a divergence between the private perceptions of individuals facing a common situation and their collective response to it.

¹ For a discussion of how pluralistic ignorance has been measured and conceptualized, see Sargent and Newman (2021).

2.1. Divergences between private attitudes and collective practices

The private attitudes of the members of a group and the observed practices or norms of the group generally converge but can also diverge. The puzzle when this happens is not why individuals' private attitudes do not predict their public behavior (that attitude-behavior puzzle occurs at the intra-individual level and has been pursued independently by social psychologists: Tormola and Rucker, 2024), but rather why group members' modal attitude diverges from their modal public behavior (Miller et al., 2000). Many divergences of this type occur in the reactions to outgroups, an example of which was reported in one of the first dissertations in social psychology by Daniel Katz at Syracuse University (Katz and Allport, 1931). Katz discovered in a survey of college students that despite privately claiming they had no personal objections to admitting racial minorities to their fraternities, most White fraternity members consistently voted to exclude racial minorities. The reluctance of White students to publicly express their openness to admitting racial minorities to their fraternity would not be puzzling if theirs was a numerical minority position and thus expressing it would expose them to the disapproval of the numerical majority. However, those favorable were a majority not a minority. As other responses to survey questions revealed, however, those favorable *believed* they were in the minority. The source of the group's failure to adopt a non-discriminatory policy was its misperception of itself—its pluralistic ignorance.

Explaining the discrepancies between private attitudes and social practices or norms continues, a century later, to be one of the most common rationales for the invocation of pluralistic ignorance in academic and public discourse (Sargent and Newman, 2021). Pluralistic ignorance has been an especially popular explanation for the fact that shifting private attitudes are not always accompanied by shifting social norms. Widespread changes in private attitudes change are not sufficient for social norm change. The group's recognition that its collective attitudes have changed is also necessary. Without this recognition, norm change will be impeded (Miller and Prentice, 1994; Miller et al., 2000; Prentice and Paluck, 2020).

The lag between a society's perception of itself and actual changes in people's private beliefs and values has been documented most frequently during periods of change in race and gender relations. The earliest demonstrations of conservative lags (Fields and Schuman, 1976) were those involving White Americans' attitudes and behaviors toward Black Americans. Despite the success that the American civil rights movement in combination with other forces had in reducing prejudiced attitudes among White Americans, changing the discriminatory behavior of White Americans toward Black Americans proved more difficult. One explanation for this was that White Americans believed that the progressive changes in their own thinking were not shared by other White Americans (O'Gorman, 1975, 1988). Misestimating the "climate of opinion," and mistakenly believing that most of their White peers continued to support segregation, they acquiesced in the status quo despite no longer privately supporting it (Fields and Schuman, 1976). Instances of pluralistic ignorance serving as a brake on social progress in race and ethnic relations have

been found outside America as well. For example, Kuran (1995) suggested that pluralistic ignorance impeded the liberalization of caste relations in India and Váradi et al. (2021) recently suggested it impeded the acceptance of long-stigmatized Roma students in Hungarian schools.

Pluralistic ignorance also has been found to serve as a brake on norm change pertaining to various forms of gender equality such as the acceptance of women working outside the home (Burzstyn et al., 2020), same-sex female parenting (Eisner et al., 2020), women participating in STEM fields (De Souza and Schmader, 2022), and women seeking high political office (Shamir and Shamir, 1997). Relatedly, pluralistic ignorance has been documented to impede progressive changes in norms governing masculine behavior. This includes the perpetuation of norms of competition and aggression that many men have ceased to support (Vandello et al., 2009; Van Grootel et al., 2018), and the reluctance of men to adopt more communal organizational practices and policies such as flextime (Munsch et al., 2014) and paternity leave (Miyajima and Yamaguchi, 2017) with which they personally have become more comfortable. These instances of pluralistic ignorance illustrate an important feature if not truism of social change: “a society’s perception of itself tends to lag behind actual changes in people’s private beliefs and values” (Zou et al., 2009, p. 581).

Pluralistic ignorance more recently has been identified as an impediment to collective action on matters of pressing public concern, such as climate change (Jachimowicz et al., 2018; Kjeldahl and Hendricks, 2018; Mildenerger and Tingley, 2019; Santos et al., 2021) and COVID-19 (Urminsky and Bergman, 2021; Castioni et al., 2022). Social action in response to a widely shared collective concern will be impeded if people do not believe that their concern is shared by others (Mackie, 1996; Chwe, 1998; Leviston et al., 2013; Bicchieri, 2016; Keohane and Victor, 2016; Arias, 2019).

2.2. Divergences between individual perceptions and collective situational reactions

The little research on pluralistic ignorance during the five decades following the work of Allport and his students Katz and Schanck was conducted primarily by sociologists and public opinion researchers, and not by social psychologists. One reason for this was that the dominant method of social psychology, the laboratory experiment, was not well-suited to studying divergences between attitudes and norms (Prentice and Miller, 1996; Miller and Laurin, 2024). Nevertheless, following a 50-year absence, pluralistic ignorance reappeared in social psychology. One sighting was in Janis’ (1972, 1982) famous account of *groupthink*, a dynamic that he proposed led small cohesive groups of competent people to make incompetent decisions. Featured among Janis’s list of *groupthink* symptoms was the *illusion of unanimity*: The mistaken belief that everyone other than oneself agrees with the (bad) decision being made. Even when the collective private opinion concerning a group’s pending decision is that is misguided, Janis contended, the group may nevertheless embrace it if its members believe that their misgivings are not shared by others (see also Harvey, 1974, 1988; Browne et al., 2018). A second sighting of pluralistic ignorance was in Latané and Darley’s (1970) account of the bystander effect.

According to them, one reason a group of bystanders are less likely than are sole bystanders to intervene on a victim’s behalf is the emergence of pluralistic ignorance. Individual bystanders, despite being alarmed and concerned about the victim themselves, assume that their fellow (non-acting) bystanders have concluded that it was not a situation that called for intervention.

In the spirit of the applications of Janis and Darley and Latané, Miller and McFarland (1987) invoked pluralistic ignorance to explain a classroom dynamic familiar to any lecturer: Students’ reluctance to ask questions during class. According to Miller and McFarland, bewildered students often hesitate to accept a lecturer’s encouragement to request clarification of material because they fear asking a stupid or ill-formed question. However, they infer from the fact that other students do not raise their hands that these individuals genuinely understand the material. They assume that they alone are confused. The manifestation of pluralistic ignorance in this case, and those described by Janis and Darley and Latané, functions not to maintain support for unpopular social norms but to render inaccurate face-to-face groups’ interpretations of consequential situations.

3. Two variants of the same phenomenon or different phenomena?

Extending the application of the concept of pluralistic ignorance to small face-to-face groups as Janis and Darley and Latané did was novel. Before these researchers, the application of the concept had focused almost exclusively on large groups and collectives. This focus is evident from the oft-cited observation made by sociologist Merton (1968) in his influential analyses of pluralistic ignorance: “This is a frequently observed condition of a group which is so organized that mutual observability of its members is slight” (p. 377).

Miller and McFarland (1987, 1991) challenged Merton’s designation of slight mutual observability as a *sine qua non* of pluralistic ignorance. Citing the examples of bystanders to emergencies and victims of groupthink, they contended that mutual observability rather than being slight was high in these contexts. The pluralistic ignorance that emerges in these contexts, they contended, arises precisely because of *mutual observability*. Without mutual observability, and the social comparison it affords, people would unlikely be led astray in these situations. A single bystander confronted with a potential emergency, based on the extensive research demonstrating the false consensus effect (Marks and Miller, 1987; Krueger, 1998), could be predicted to assume that any concerns he or she had would be shared by others were they there.

The high vs. low mutual observability distinction helps contextualize the fact that sociologists and public opinion researchers’ explanations have tended to focus on structural information channels (macro variables) while psychologists have tended to focus on psychological processes (micro variables) (Breed and Ktsanes, 1961; Shamir, 1986; Kitts, 2003). This difference does not reflect different accounts (*explanas*) for the same phenomena, as is sometimes suggested (Shamir and Shamir, 1997; Kitts, 2003) but different accounts for fundamentally different phenomena

(*explanadum*). Sociologists and public opinion researchers have focused on the low mutual observability variant, largely ignoring its high counterpart, whereas psychologists have largely done the opposite. I consider these two variants of pluralistic ignorance in turn.

4. The low mutual observability case

In large groups, people typically cannot physically observe all other members. They must infer the nature of the group's modal attitudes or practices from a sample of group members. If that sample, unbeknownst to them, is not representative of the broader group, they will misestimate the group norm (Merton, 1968; Greeley and Sheatsley, 1971; Kitts, 2003). This is true of online communities as well (Duggan and Smith, 2016; Arias, 2019; Chowdhury, 2021; Castioni et al., 2022; Huszár et al., 2022).

4.1. Accounts for observable samples being unrepresentative

The most prominent and visible members of a group will have a disproportionate influence on the group's perceptions of itself (Noelle-Neumann, 1993; Mendes et al., 2017). This can result in collective misperceptions when the most observable members of a group are not representative of it. There are two reasons this can occur. The first relates to which members of groups find themselves, either through their actions or those of others, the most highly observable. The second relates to how being in a group position of high visibility affects the occupants' behavior.

4.2. Who find themselves with high visibility?

The most prominent and visible members of a group tend to most strongly embody those norms and values of the group that most sharply distinguish it from those of other groups (Shamir and Shamir, 1997; Kitts, 2003). This is especially so when the group is part of a structured institutional setting, an example of which, and for a while a big favorite among institutional researchers, is the prison setting. Members of the prison culture (guards and inmates) tend to assume that their peers endorse their subculture's values more strongly than they do themselves (Wheeler, 1961; Akers, 1977; Kauffman, 1981; Toch and Klofas, 1984; Benaquisto and Freed, 1996). These studies indicated that both prison guards and inmates systematically underestimated the similarity of their attitudes to those of their peers, each assuming that their own position was more sympathetic toward the outgroup than was the position of their peers (Wheeler, 1961; Kauffman, 1981; Klofas and Toch, 1982). Researchers traced the observed pluralistic ignorance in these cases to the greater visibility of extreme group members. Klofas and Toch (1982), for example, found that prison guards and prisoners with the most hardline positions were likely to define themselves as spokespersons for the group, leading to the illusion that all prison guards and prisoners held more hardline positions than they did. Wheeler (1961) similarly noted "much of the strength

of the inmate culture may reside in the ability of anti-staff-oriented inmates to attain positions of influence" (p. 291).

Attaining high visibility within a group does not require occupying a formal position of prominence. It can derive from simply being willing to express one's opinion. However, this too can lead to unrepresentativeness and, in turn, pluralistic ignorance, as those most willing to express their beliefs are those whose beliefs most embody the norms and values of the group (Morrison and Miller, 2008; Miller and Morrison, 2009). This pattern was documented in a study of students at Vassar College (Korte, 1972), an institution with a liberal ethos and social identity (at least at the time of the study). In contrast to underestimating the progressiveness of their peers' attitudes as was typical in previous studies of pluralistic ignorance, this study found that students overestimated the liberalness of their peers relative to themselves on numerous social and political issues (for similar examples, see Taylor, 1982; Shamir, 1986; Van Boven, 2000; Glynn and Hoge, 2014; Brown et al., 2022). According to Korte (1972), this misperception was due to the presence of a vocal and conspicuous minority comprising the most liberal students and faculty on campus. Korte (1972) offered the following general summary of this process, "... the side of an issue representing a cultural (or subcultural) value is more prominent, more frequently and loudly advocated by its adherents. From the point of view of the individual, this source of bias constitutes an unrepresentative sampling of the relevant population" (p. 586).

Sometimes the high visibility of even a single individual can induce pluralistic ignorance in a group. In accounting for the pluralistic ignorance in a community vis-à-vis commitment to religious practices, Schanck (1932, 1934) pointed to the significant role played by one particularly vocal and devout community member. Kitts (2003) similarly attributed some of the pluralistic ignorance in a vegetarian college dormitory regarding support for strict eating practices to the prominence of one highly visible "vegan fascist".

4.2.1. The media's role in unrepresentative visibility

When Allport (1924) described how dependent social life was on individuals having knowledge of their peers' habitual feelings and practices, he could not have imagined how much of social life, or the provision of information about it a century later would occur online. Nor could Lippmann (1922) have realized how central social media would come to be in people's lives (Mutz, 1998) when he coined the term public opinion and noted the role of the media in shaping it. If the social information conveyed by the media was representative of the population, the capacity of people to know others' beliefs, feelings, and practices would seem greater than it has ever been (Katz et al., 1981). However, evidence suggests that the information conveyed by the media is often not representative and frequently creates pluralistic ignorance (Duggan and Smith, 2016; Arias, 2019; Chowdhury, 2021; Castioni et al., 2022; Huszár et al., 2022; Brady et al., 2023).²

² Intentionally misleading information on social media also can contribute to pluralistic ignorance (Yang and Stoddart, 2021; Castioni et al., 2022).

The unrepresentativeness found on mainstream and social media takes different forms, but its most common one is a bias toward extremity. An instructive case involves beliefs about climate change. People the world over underestimate others' concern for climate change and the commonness of the belief that climate protective actions need to be taken (Leviston et al., 2013; Mildenberger and Tingley, 2019). One important contributor to this false second-order belief is the disproportionate visibility that climate change deniers receive on the media landscape (Oreskes and Conway, 2010; Sparkman et al., 2022). This skewed representation reflects the general tendency of the media to give disproportionate airtime to minority views, especially when they generate engagement, fear, and anger (Berger and Milkman, 2012; Hendricks and Vestergaard, 2018).

Extreme minority views are also overrepresented by social media platform tools such as likes, shares, and user comments (Knobloch-Westerwick et al., 2005; Porten-Che  and Eilders, 2020). Those who communicate on social media generally tend to have more extreme positions on social issues and this is true for climate change as well (Juil and Ugander, 2021; Yang and Stoddart, 2021; Castioni et al., 2022). For example, Lewandowsky et al. (2019) noted that a disproportionate percentage of comments about climate change on social media come from a "loud fringe." Whatever direct influence the media has on first-order beliefs about climate change, its indirect influence on second-order beliefs may be even greater (Mildenberger and Tingley, 2019).

Sometimes, unrepresentativeness is fostered by social feedback delivery systems that employ algorithms to push evocative content that draws more engagement (Brady et al., 2023). The more extreme one's position, the more attention one receives and thus, the more reputationally enhancing it is to post an extreme position (Jordan and Rand, 2020). Whether driven by an algorithm or voluntary action, a minority of politically extreme social media users create most of the political content people see (Brady et al., 2023).³

4.2.2. How do people act when they are in visible positions?

When people are in visible positions as group representatives, they often embody the social identity of the group. According to social identity theory (Tajfel, 1978, 1981; Turner et al., 1987; Terry and Hogg, 1996), this does not involve dissembling or misrepresenting their personal views, but accessing the prototypical values of the groups to which they belong and with whom they share social identities, as would be expected among prison guards, schoolteachers, college students and others found to display pluralistic ignorance (Miller and Prentice, 1994; Prentice and Miller, 1996). Instead of being personally inauthentic, they are being true to their social identity. As Terry and Hogg (1996) stated: "When social identity is salient, depersonalization occurs, such that a person's feelings and actions are guided more by group prototypes and norms than by personal factors" (p. 790).

³ A further way the media renders unrepresentative depictions of groups salient, and hence contributes to pluralistic ignorance, is by promoting stereotypes of those groups. The media determines not only which person on the street they feature but how they feature the person on the street.

As a group prototype tends to embody those beliefs, attitudes, and behaviors that minimize ingroup differences and maximize intergroup differences, respectively (Tajfel, 1978, 1981; Turner et al., 1987), intergroup contexts are especially likely to produce discrepancies between public behavior and private attitudes.

Goffman's (1959, 1961) analysis of the performative nature of people's public behavior also emphasizes its closer fidelity to their institution's attitudes than to their private attitudes. In his words, "when the individual presents himself before others, his performance will tend to incorporate and exemplify the officially accredited values of the society, more so, in fact, than does his behavior as a whole" (Goffman, 1961, p. 35). The tendency to idealize one's group's values in one's public behavior provides an opening for pluralistic ignorance. If the institution's members do not recognize the extent of the gap between the on-stage and off-stage behavior of their peers, they may mistakenly perceive the former as conveying the latter as well.

Willower and Packard (1972) report this pattern of pluralistic ignorance in their investigation of schoolteachers' support for a *custodial pupil control ideology* (an emphasis on the maintenance of order, distrust of pupils, and a moralistic approach to pupil control). Although only a few teachers indicated that they supported this position, Packard and Willower found that most teachers believed that most their peers embraced it. They explained this case of pluralistic ignorance as follows:

Norms enjoining strictness toward students and the maintenance of social distance typically appear to mark the student subculture, and pressures for faculty members to exhibit a united front to guard against organizational problems resulting from pupil control breakdowns seem substantial. Thus, on stage behavior is likely to indicate support for the prevailing collective even if off stage behavior may reveal personalistic tendencies contrary to consensual social requirements. Teachers "may feel obligated to represent their views on pupil control so that they appear to support prevailing norms" (p. 80).

The dynamic described by Packard and Willower provides the spawning grounds not only for pluralistic ignorance but for false polarization, the tendency for partisan groups (e.g., pro-life vs. pro-choice) to see themselves as more different from one another than they are (Levendusky and Malhotra, 2016; Blatz and Mercier, 2018; Lees and Cikara, 2020; Fernbach and Van Boven, 2022). Reports of cross-group false polarization routinely find within-group pluralistic ignorance as well. Moreover, descriptions of the causes of false polarization frequently sound identical to those of pluralistic ignorance, as illustrated by Ross and Ward (1996) description of student partisans: "they rarely acknowledged to others the degree of ambivalence in their political beliefs—not in talking to their ideological allies and not in talking to their ideological adversaries (lest their concessions be exploited or misunderstood)" (p. 123).

Making incorrect inferences about a population from an unrepresentative sample would seem to implicate the structural flow of information more than psychology (Bicchieri and Yoshitaka, 1999). However, an unrepresentative sample would only hold sway if people either did not recognize that the sample they

saw was unrepresentative (an omission implicating psychological processes) or, despite recognizing it, insufficiently adjusted for it in drawing inferences about the population (a well-studied psychological process).

5. The high mutual observability case

The key to the pluralistic ignorance created through the processes discussed above is that people have limited access or exposure to the behavior of their fellow group members. If the structural flow of the information that people receive about one another is biased, this can yield pluralistic ignorance within the group. However, whereas the high observability of an unrepresentative sample is sufficient to produce pluralistic ignorance in some situations, it is not necessary to produce it in others.

If pluralistic ignorance only arises when one observes an unrepresentative sample of one's group, it seems impossible for it to arise in smaller face-to-face groups. This would certainly be the case if the group members acted in accordance with their authentic beliefs, perceptions, and preferences. However, people do not always act authentically and despite high mutual observability, small groups can experience pluralistic ignorance. The provenance of the pluralistic ignorance found in the situations discussed by Janis and Darley and Latané is not the unrepresentativeness of the people observed, it is the misleading nature of the behavior observed (Miller and McFarland, 1987). Latané and Darley (1970) describe how inauthentic behavior contributes to pluralistic ignorance in the bystander situation:

No member of a crowd wants to be the first to fly off the handle, the one to cry "Wolf!" when no wolf may really be present. Too great a show of concern may in itself be embarrassing, and it also may prematurely commit the bystander to a course of action he has not had a chance to think through. Until he decides what to do, each member of a crowd, however truly concerned he may be about the plight of a victim, may try to maintain a calm demeanor, an unruffled front (p. 40).

The unique aspect of the inference process that leads to pluralistic ignorance in the bystander situations is that it occurs among insiders rather than outsiders. It would not be surprising if witnesses to the bystander scene inferred that the bystanders who nonchalantly stood by as a fallen person yelled for help were unconcerned. However, those experiencing pluralistic ignorance are bystanders themselves. They know that their nonchalant, unconcerned behavior belies their private concerns, but assume that the identical public behavior of others corresponds to their private experience.

Demanding an explanation, then, is why people, themselves dissembling, assume others are authentically reflecting their internal states. Pluralistic ignorance in the bystander situation, as well as in many other situations that people make dubious collective decisions (Shaw and Blum, 1965; Janis, 1972, 1982), arises from people behaving like other people but assuming that the behavior of others, unlike their own, is genuine.

5.1. Why do people not recognize that their private thoughts and behaviors are like those of others?

People may conclude that the identical public behavior of themselves and others does not reflect similar private thoughts for two reasons. First, they may not recognize the degree of similarity between their public behavior and that of others. Second, despite recognizing the similarity, they may believe that the causal origins are different. The sources of divergence in the first and second cases are traceable to the encoding and decoding stages of information processing, respectively (Miller and McFarland, 1991).

5.1.1. Mistakenly thinking one's behavior differs in appearance from that of others

When pluralistic ignorance arises in contexts of high mutual observability, it typically occurs when group members' public behavior does not match their private thoughts and feelings. This mismatch can vary in extremity, from individuals simply not publicly displaying the same intensity of feeling that they feel privately, to individuals taking public stances that diametrically oppose their private positions. However, whether one is merely camouflaging their true belief (Frey, 2023) or explicitly falsifying it (Kuran, 1995) people may not recognize the similarity of their public behavior to that of those they are observing.

The challenge for people in comparing their public behavior to that of others (unless provided with a visual representation of it) is that they cannot do it directly. When publicly misrepresenting their private experience in group settings, people directly know only two things: What the others' public behavior looks like and what their private experience feels like. They must infer what their own behavior looks like and in doing so, people frequently fall victim to what Miller and McFarland (1987, 1991) called the "illusion of transparency"—the tendency to overestimate how closely their public behavior reflects their private experience. Examples include people's beliefs that their public anxiety is more evident than it is (Savitsky, 1997), that their lies are more detectable than they are (Gilovich et al., 1998), and that their efforts to disguise that they are drinking a disgusting liquid are less successful than they are (Gilovich et al., 1998).

If the illusion of transparency results in bystanders to an emergency thinking that they look more alarmed than they perceive other bystanders to be, it will lead them to infer that their concerns are not shared by other bystanders. Similarly, if the illusion leads students during an abstruse lecture to think that they look more confused than others do, it will lead them to infer that their confusion is not shared by other students. Despite people not wanting to embarrass themselves in these situations by expressing unwarranted and unshared alarm or confusion, the illusion of transparency will induce them to underestimate their success in achieving their goal. The facades that the individuals in these situations present to one another, contrary to their expectations, come across as highly authentic.

In many contexts in which pluralistic ignorance arises, people are not trying to completely conceal their true feelings, but rather to

express them subtly. This takes place when people pursue a trade-off between two goals: Signaling their true opinions while avoiding presenting themselves in a negative light (e.g., an over-reactor, a disloyal team member, a social prude). For example, people might seek to register their disapproval with a sexist or racist joke while not appearing to be overreacting and causing a scene. Economists describe navigating this compromise as attempting to optimize both expressive and reputational utility (Kuran, 1995). In these situations, people seek to emit a signal of their private experience that is strong enough to satisfy their quest for expressive utility, but not so strong as to compromise their quest to protect their reputational utility—by creating a scene or offending people with an “in your face” signal. In situations where they are striving to keep the net costs of this trade-off as low as possible, people are prone to think the resolution of the signal that they emit to denote their true feelings is higher than it is.

There are various lines of research showing people’s tendency to overestimate the success with which they communicate their intentions when they are faced with competing goals (Vorauer and Claude, 1998). For example, people think that others can detect their sarcasm more accurately than they can (Keysar, 1994), and can recognize the alarm they experienced over the unethical behavior of a confederate more accurately than they can (Gilovich et al., 1998). The more threatening people think a negative communication (signal) may be to their audience and their public and private image the more they overestimate its clarity (Holtgraves, 2021). For example, managers overestimate the clarity of their negative performance feedback, but not of their positive feedback (Schaerer et al., 2018).

People’s ability to recognize the similarity of their experience to others is compromised by their failure to appreciate how much their public behavior resembles the behavior of others. Pluralistic ignorance arises because people underestimate their skill at concealing their private experience while trying to do so and overestimate their skill at communicating it while trying to do so subtly (Vorauer and Miller, 1997; Gilovich et al., 1998).

5.1.2. Mistakenly thinking one’s behavior differs in its causal origins from that of others

Groups in which members are highly visible to one another can experience pluralistic ignorance even if the group members recognize their behavior is identical. All that is necessary is for them to attribute it to different causes. Consider how pluralistic ignorance can arise in bystander situations even when actors recognize that their public behavior shows a degree of bravado and nonchalance identical to that of others. All that is required is for bystanders, while recognizing that their behavior is the stuff of impression management posturing, to mistakenly assume that of others reflects their internal experience. Acknowledging that their own behavior cannot be taken at face value, they assume that that of others can (Monin and Norton, 2003).

A possible explanation for why people interpret their behavior differently than others in contexts producing pluralistic ignorance is that people think their public behavior is governed more by self-presentational motives than is that of others (Miller and McFarland, 1987, 1991; Sabini et al., 1999; Van Boven et al., 2005). According

to this argument, social motives (e.g., fear of embarrassment) are defined primarily by internal, unobservable cues to which people have more access within themselves than in others. Thus, individuals develop a general belief that they experience these social motives more strongly or more often than others do. Supporting this claim, Miller and McFarland (1987) found that confused research participants who acknowledged that they did not seek clarification on an assignment from an experimenter because of fear of embarrassment thought that it was lack of confusion, not fear of embarrassment that led the other participants not to seek her out.

The impact of the self’s greater access to internal cues may extend beyond those situations in which the public-private divergence is driven by fear of embarrassment. The feelings of belonging, social anxiety, and alienation that arise from group identification are also largely internal and unobservable. Thus, people may hold an enduring belief that they experience these states more strongly or more often than others do. For example, people might think that they are more motivated by fear of rejection than are others, leading them more often to cite that fear in explaining their behavior than the same behavior in others. This accounts for the tendency of people who attribute their own hesitancy to initiate a relationship to the fear of rejection but the hesitancy of others to their lack of interest (Vorauer and Ratner, 1996; Miller and Nelson, 2002; Shelton and Richeson, 2005).

One example of such a setting is the modern-day college campus, where racial and ethnic groups co-exist, and students interact much more with ingroup members than with outgroup members (Prentice, 2013). When asked why they do not interact more across racial boundaries, students typically say that they would like to have more contact and that they are dissatisfied with the status quo. However, they believe that members of other groups are not interested in having more contact with them. Black and White students alike attribute their own failure to cross group boundaries to a fear of being rejected, but they attribute the other group’s failure to cross group boundaries to a genuine lack of interest (Shelton and Richeson, 2005).

5.2. The sequencing of the two variants of pluralistic ignorance

Sociologists and public policy scholars often say that pluralistic ignorance need not depend on psychological processes (O’Gorman, 1986; Shamir and Shamir, 1997; Kitts, 2003). They acknowledge that cognitive shortcomings and perceptual distortion can contribute to group misperception but contend that the term pluralistic ignorance should be reserved for situations “involving the veridical perception of false or misleading information” (O’Gorman, 1986, p. 334).⁴

⁴ Cultural anthropologist Gil-White (2005) took the opposite position: “Note that pluralistic ignorance does not apply to situations where people miscalculate the majority opinion because of exposure to a small and therefore biased sample. Pluralistic ignorance results when you draw opposite conclusions about the internal states of self and others despite the fact that others are in fact reliably observed to behave similarly to you” (p. 210).

Pluralistic ignorance certainly can emerge through communication channels alone. However, even when this happens, its perpetuation may very much depend on psychological processes. It would be surprising if inferences drawn from a biased sample did not reverberate in people's subsequent face-to-face interaction with non-biased samples, thus amplifying the effect. Those who choose to conceal their true opinions based on exposure to an unrepresentative minority become purveyors, and not just recipients, of misinformation. Their decision to falsify their preferences reflects and augments pluralistic ignorance. It may be biased communication on the distribution of opinions that leads people to become insincere norm followers, but that is not what leads people to believe that other insincere norm followers are sincere—a psychological process does that.

The claim that the pluralistic ignorance that arises from low mutual observability can be extended and deepened through high mutual observability is central to Noelle-Neumann's (1974) concept of the *spiral of silence*. The sequence begins with members of a vocal minority creating the illusion that they are the majority. The members of the *silent majority*, thinking they are in the minority, conform to what they mistakenly perceive to be the majority position (Noelle-Neumann, 1974; Dyne et al., 2003). Once this happens, there is little hope that greater exposure to the silent majority can dispel the pluralistic ignorance because it is now acting like the vocal (previous) minority. The illusion of personal deviance that begins by misinterpreting the representativeness of a vocal minority is perpetuated by a misinterpretation of the conformity of an isolation-fearing majority (Elder et al., 2021). Persistent pluralistic ignorance, thus, whatever its origins, will generally reflect the failure of those acting inauthentically to recognize the inauthenticity of similarly acting others.

6. When pluralistic ignorance disappears

Given the deleterious effects of pluralistic ignorance, it is not surprising that considerable attention has been given to how it might be combatted. Before considering intentional efforts to undermine or dispel pluralistic ignorance, it is instructive to ponder how pluralistic ignorance may disappear organically. The two possibilities for the realignment of mismatched second- and first-order beliefs are: (1) first-order beliefs change in the direction of second-order beliefs and (2) second-order beliefs change in the direction of first-order beliefs.

6.1. First-order beliefs shifting in the direction of second-order beliefs

Pluralistic ignorance can disappear if it accelerates attitude change in the direction of initially false norms (Prentice and Miller, 1993; Miller and Prentice, 2016; Eisner et al., 2020). When this happens, what was previously mistakenly thought to be the position of the majority is now its actual position. The once illusory norm has become real; the once insincere norm followers have become sincere (Blair et al., 2022). This form of realignment is more likely

to take place when attitudes and behaviors have not yet caught up to illusory new norms than when they have broken free of old norms. For example, if college students' misperceptions of norms guiding their peers' sexual behavior led them to engage in sexual activity outside of their comfort zone, it may eventually shift their comfort zone in the direction of the misperceived norm (Reiber and Garcia, 2010; Sargent and Newman, 2021).

It is difficult to gauge how often pluralistic ignorance acts as an accelerant to attitude change. If the internalization of the false norm happened every time pluralistic ignorance emerged, the evidence of pluralistic ignorance would be fleeting and captured instances of it would greatly underestimate its occurrence. However, people do not invariably internalize false norms. Sometimes, they merely continue paying lip service to the norm that they do not support, and the enduring pluralistic ignorance produces alienation from the group rather than conformity to it (Prentice and Miller, 1993, 2002).

6.2. Second-order beliefs shifting in the direction of first-order beliefs

Among the common spawning grounds for pluralistic ignorance are those historical moments when attitudes have broken free from prevailing norms, such as when private attitudes no longer support discriminatory policies, health-threatening practices, or outgroup-demonizing postures. In these instances, one may expect that with the passage of time and the opportunity to sample more extensively—to talk to more people, to see them in a wider range of contexts—pluralistic ignorance would diminish (Kitts, 2003; Zhu and Westphal, 2011; Smerdon et al., 2020). Noelle-Neumann explicitly claimed that the spiral of silence that often under-girds pluralistic ignorance would “only hold sway over a society for a limited period of time” (Noelle-Neumann and Petersen, 2004, p. 350). The fact that people, initially rendered silent by pluralistic ignorance, eventually express their true opinions may also explain the finding (Eisner et al., 2020) that whereas pluralistic ignorance was associated with a new controversial policy about gender roles (same-sex female parenting) in Switzerland, it was not associated with an older controversial policy (working mothers).

There is no guarantee that greater exposure will diminish pluralistic ignorance. It depends on the relative contributions made to it by unrepresentative sampling vs. misrepresentation of true feelings or beliefs, as exposure to more people in more contexts will abate the former problem more than the latter. If the observed larger sample is dissembling or falsifying preferences, as in the tale of *The Emperor's New Clothes*, more exposure may strengthen not weaken pluralistic ignorance. Meeting more fellow subjects of the emperor will reduce pluralistic ignorance concerning “his beautiful new clothes,” only to the extent that those subjects are prepared to share their private beliefs or have an opportunity to share their views (Grant et al., 2009).

When norms catch up with changing attitudes, it is not always because the attendant pluralistic ignorance has been unmasked. Norms supporting discrimination, for example, may catch up with public attitudes, and thereby eliminate pluralistic ignorance, but not because pluralistic ignorance was first dispelled. New laws,

for example, represent an exogenous force that could result in both norms changing in the direction of recently changed attitudes and, consequently, pluralistic ignorance disappearing (Tankard and Paluck, 2017). Of course, when new laws are not seen to reflect the climate of opinion, they are unlikely to dissipate pluralistic ignorance (Miyajima and Yamaguchi, 2017; Eisner et al., 2020). In the case of the high mutual observability, the prospects of diminishing pluralistic ignorance over time are greater in some ways but lesser in others. In *The Emperor's New Clothes*, a single voice was able to “fix” pluralistic ignorance. However, in time-compressed situations, this may not matter. By the time someone stepped forward in a pluralistic ignorance-besotted group of bystanders to dispel the uncertainty, it might be too late for the victim. Similarly, if students who did not ask for clarification in a confusing lecture because of pluralistic ignorance were to find out after class that everyone was confused, it would be too late to get clarification.

7. Intervening to dispel pluralistic ignorance

Researchers, educators, social advocates, and others have all tried to reduce pluralistic ignorance by sharing information on the actual distribution of opinion or practices with the population experiencing pluralistic ignorance. This may seem like an effective way of reducing pluralistic ignorance. Katz and Schanck (1938) described a famously effective instance of this technique in the US in the 1930's:

“During the prohibition era the forces in favor of prohibition never wanted any objective check on public sentiment. They tried to kill off straw polls on the subject of prohibition. As a consequence of their tactics, even the politicians were fooled by an illusion of universality of opinion in favor of the Eighteenth Amendment. When an objective check was made, however, prohibition collapsed like a punctured balloon” (p. 175).⁵

Tufekci (2017) likewise contended that the effectiveness of “digitally networked movements” such as Egypt's Tahrir Square protests of 2011 and the Gezi Park protest of 2013 is due to their capacity to diminish pluralistic ignorance and disrupt the spiral of silence. As she put it,

“This is what the digitally networked public sphere can do in many instances: help people reveal their (otherwise private) references to one another and discover common ground. Street protests play a similar role in showing people that they are not alone in their dissent. But digital media make this happen in a way that blurs the boundaries of private and public, home and street, and individual and collective action” (p. 26).

⁵ Elster (2015) proposed that polls reporting the electorate's negative view of Norway's entry into the Common Market (European Union) similarly countered the pluralistic ignorance that had emerged.

Providing people with pluralistic ignorance-challenging data can lead them to update their perceptions (Mildenberger and Tingley, 2019; Burzstyn and Yang, 2022; Ecker et al., 2023) but it is not guaranteed to do so.⁶ There has been disappointingly little attention given to the question of the ease with which second-order beliefs can be recalibrated and when accomplishing this will be sufficient to change behavior.

7.1. Why people resist changing their perceptions in response to data

You may think that the message that others agree with you would be an easy sell—for example, that others too disagree with prohibition (Katz and Schanck, 1938), agree with progressive immigration (Mastroianni and Dana, 2022), support mandatory mask wearing to combat COVID 19 (Urminsky and Bergman, 2021), find the lecture confusing (Miller and McFarland, 1987), believe in the need to take action on climate change (Mildenberger and Tingley, 2019), believe that diversity and inclusion are important goals (Isenberg, 2023), or believe that invading Cuba to topple Castro is a bad idea (Janis, 1982). Complicating the selling of this message, and what makes it challenging to do, is that accepting it requires people to reconcile the data provided with their experience (Blanton et al., 2008). Overriding their experience, that is, denying what their eyes tell them about others, will not always be easy.

Expecting people to ignore the reality they perceive in response to distributional data on others will be especially problematic when their perception coheres with deeply ingrained cultural values and structural patterns (Shamir and Shamir, 1997). This is often the case while trying to convince people that their progressive views on race and gender are widely shared when the prevalent structural and institutional support suggests otherwise. Similarly, presenting college students with data suggesting that their peers are not comfortable with campus drinking practices when such practices are central to the social identity of the prototypical students will be a challenge for them to absorb (Schroeder and Prentice, 1998). Even when interventions succeed in leading people to update their second-order beliefs, they rarely move fully in the direction of the information provided and remain at least somewhat anchored on their initial misperceptions (Burzstyn and Yang, 2022).

To convince people that their perceptions of their peers' opinions or private practices are wrong requires them to accept that they were misled by either unrepresentative sampling or inauthentic behavior. Getting people to accept either version of this message will be easier if it is accompanied by an account of how they could have been led astray. Schroeder and Prentice (1998) did just this in a study in which they successfully changed college students' drinking behavior. Their intervention convened group discussions to give students the opportunity to talk about campus drinking norms, to express their views about excessive alcohol consumption, and to hear the views of their peers. The results showed that the group discussion did diminish excessive alcohol consumption,

⁶ See Dempsey et al. (2018) for a discussion on the lack of clarity in how social norm misperceptions are challenged.

particularly among students who were highly vulnerable to social influence, a finding that suggested that the discussions worked by reducing the strength of campus drinking norms.

7.2. Why people resist changing their behavior in response to updated perceptions

Once people have been successfully convinced that others share the private attitudes and update their beliefs accordingly, do they bring their public behavior into line with their private attitudes? Here too things may not be as simple as they would appear. The key is how conditioned the target behavior is on people's misperception of their group's behavior or beliefs.

Usually, people falsify or otherwise do not act upon personal preferences that they think are not shared because they are fearful of doing so. To change the behavior, then, you must reduce the relevant fear. The nature of the fear generated by pluralistic ignorance can vary. The fear most often tied to pluralistic ignorance is the fear of embarrassment or social disapproval. People worry that if they act on their private beliefs or perceptions, they will provoke social rejection from others. Other fears also emerge from identity concerns (Miller, 2020). For one, people can fear that acting on their private beliefs will challenge the legitimate right of the majority to determine the group's course of action. For another, people can fear that undertaking an action will make them a sucker or will be ineffective. These different fears will not be equally easily allayed by information about others' actual beliefs and opinions. For those who are refraining from some action (e.g., voting for their preferred government policy) because they think that the majority prefers another and they think that the majority's will should be respected, dispelling pluralistic ignorance may have a strong disinhibiting effect. The swift repudiation, following the release of poll data of the US constitutional amendment supporting prohibition, is a case in point. Disabusing citizens of their misconception about support for governmental policies generally may have liberating effects (Shamir and Shamir, 1997; Todorov and Mandisodza, 2004; Dixon et al., 2020; Castioni et al., 2022). Dispelling pluralistic ignorance within small decision-making groups similarly can be effective in breaking the spell of consensus and allaying concerns about thwarting the will of the majority (Scheufele and Moy, 2000; Chorus et al., 2020).

Correcting norm perception also may be effective in prompting people to act on their conviction when their previous reluctance to do so was based on their fear that they would be a sucker or ineffectual if they did so (Kerr, 1996; Lubell, 2002; Keohane and Victor, 2016; Abrams et al., 2021; Chen et al., 2022; Schwenkenbecher, 2022). One example of this is Wenzel's (2005) investigation of the role of pluralistic ignorance in tax compliance in Australia. He found that taxpayers believed that their fellow taxpayers were less supportive than they were of honesty in the reporting of deductions. To the extent that this perception left taxpayers feeling like suckers when they honestly reported their deductions, it could be predicted that an intervention that disabused them of the need to fear others' free riding would make them more comfortable honestly reporting their deductions. Evidence from tax documents showed that disabused taxpayers

claimed fewer deductions than did taxpayers whose misperceptions had not been disabused.

7.3. Dispelling pluralistic ignorance disinhibits some behaviors more easily than others

The (mis)perception that you feel differently than others can be a major barrier to acting on your own beliefs. Removing that barrier will make it psychologically easier to act on those beliefs but other barriers may still be in place. A common example of this arises in those situations that involve interventions to assist the victim of a hostile act, such as bullying or sexism. Pluralistic ignorance may exist in these situations and contribute to the failure of people to intervene, but it will not be the only cause for inhibition. Darley and Latané cited pluralistic ignorance as one of the processes inhibiting intervention in bystander situations, but they cited others as well, such as the belief that it was not their responsibility to intervene and that their intervention would not be effective (see also Ashburn-Nardo and Abdul Karim, 2019). De Souza and Schmader (2022) speculated that this may be why their successful efforts to disabuse men of their pluralistic ignorance concerning the appropriateness of providing allyship to women was not sufficient to induce men to intervene on behalf of women confronted by sexism. They remained uncomfortable doing that, though witnessing another intervene appeared to make them far more comfortable intervening.

When people do not undertake actions that they mistakenly think are disapproved of, it is often because they fear being publicly rebuked by others. Disabusing them of the commonness of this reaction may diminish their estimate of the number of others who might publicly rebuke them but not necessarily their estimate of the probability that *someone* will rebuke them or of the aversiveness of a less-than-unanimously endorsed rebuke. White parents, learning in the US in the 1950's that, contrary to their perception, most other White parents shared their view that it is acceptable to allow their children to play with Black children, may not have increased their willingness to do so if they thought that even a minority of their neighbors might disapprove of them. Similarly, while learning that most others share their view about the reality of climate change may be comforting, confronting a climate denier will still be aversive and may deter people from starting up conversations about climate change with others whose positions they do not know.

An interesting example of the differential ease with which interventions can change behavior is a study that corrected college students' misperceptions about their peers' engagement in high-risk activities for HIV and AIDS (Chernoff and Davison, 2005). The study found that correcting misperceptions led women to report having fewer sexual partners over the next 6 months and men to report using condoms more during sex, but it did not affect either women or men's reporting of conversations about safe sex with their partners. The latter finding is interesting because, along with the other modified behaviors, it was a goal that the participants set for themselves as part of the intervention. Using a condom while having sex for men and avoiding a sexual encounter for women appear to be much more actionable goals than having an uncomfortable conversation.

8. Taking stock at the century mark

Allport's (1924) claim that social life depends on people having knowledge of their peers' feelings and practices remains as true now as it was a century ago. Since Allport, we have learned that people, in the aggregate, are very good at estimating the prevalence of social beliefs and actions (Nisbett and Kunda, 1985). There are cases, however, where people grievously misestimate their peers, and against the backdrop of their general accuracy these cases compel our attention. When people misperceive the prevalence of their peers' attitudes and behaviors, they inhabit false social worlds where they find themselves influenced by pressures that do not exist. Over the last century, pluralistic ignorance has been accorded a prominent causal role in a staggering array of different social ills, including college binge-drinking (Prentice and Miller, 1996; Schroeder and Prentice, 1998), tax avoidance (Wenzel, 2005), school bullying (Sandstrom et al., 2013), climate change inaction (Geiger and Swim, 2014; Sparkman et al., 2022) risky sexual behavior (Lambert et al., 2003) and the lack of female labor force participation (Burzstyn et al., 2020).⁷ The typical study that reports pluralistic ignorance implicates its role in facilitating or inhibiting some meaningful behavior, though not always empirically supporting this claim. Studies designed to reduce pluralistic ignorance continue to be rare, especially those that look for intervention effects on perceptions and the behavior supposedly driven by those perceptions (e.g., Mandeville et al., 2016; Rinker et al., 2017).

Despite being extensive, the knowledge base generated on pluralistic ignorance does not include a comprehensive theory for it. The reason for this, in my view, is the breadth of phenomena that are encompassed under its conceptual umbrella. Formulating a single theory to explain the macro instances of pluralistic ignorance, such as Kuran (1995) found in authoritarian regimes, and micro instances, such as Latané and Darley (1970) found in emergency situations, seems untenable, even misguided.⁸

Attaching micro and macro prototypes to the same concept is not unique to pluralistic ignorance. A similar situation exists vis-à-vis the self-fulfilling prophecy concept. Both concepts have been around for many decades, have resonated widely within the social sciences, and have failed to yield a unifying theory. The term self-fulfilling prophecy was introduced by sociologist Merton (1948) who gave as his prototypical example of the phenomena, a case of insolvency concerning a bank: The false prophecy that the bank is running out of money leads people to rush to take their money out, which results in the prophecy coming true.

The concept of self-fulfilling prophecy received its defining micro instantiation in psychology in Rosenthal and Jacobson (1968) celebrated work on teacher expectancies. Rosenthal, and social psychologists who followed, focused on expectancies pertaining not to properties of the material world (e.g., the liquidity of a bank) but to the characteristics of individuals (e.g., students with the potential to be "late bloomers"). The sociological (macro) and psychological

(micro) prototypes of a self-fulfilling prophecy can be subsumed under the general umbrella of expectations becoming reality, but like the macro and micro phenomena that fly under the banner of pluralistic ignorance, they are very different in form and substance. The prospect of generating a common conceptual framework seems dim in both cases. With their surface features being so different, it seems unlikely that the constituent processes would be the same.

In neither the case of pluralistic ignorance nor that of self-fulfilling prophecy does the failure to produce a theory that bridged micro-macro manifestations mean that substantial conceptual progress has not been made. To the contrary, in both cases, the analytic focus generated by the concept has proven immensely fruitful. The legacy of work generated by the concept of self-fulfilling prophecies includes vast knowledge about the impact of stereotypes on information processing and behavior (Miller and Turnbull, 1986; Chen and Bargh, 1997; Stangor, 2016; Hinton, 2017). The legacy of pluralistic ignorance research is also impressive: Studying it has yielded a much deeper understanding of many aspects of group life and of the power residing in beliefs about fellow group members.

As substantial as the conceptual yield from a century of research on pluralistic ignorance has been, there remains much to be learned about the phenomenon and its variants. Most importantly, there is no broadly applicable recipe for its production. With few exceptions (e.g., Miller and McFarland, 1987) researchers have not sought to experimentally create pluralistic ignorance in the lab or to predict its occurrence in the field. Overwhelmingly, citations to pluralistic ignorance point to stumbled-upon effects rather than predicted ones. The concept of pluralistic serves primarily as an explainer of effects rather than a predictor of them. When researchers do predict pluralistic ignorance in the lab or in the field it usually is because they previously have found results in that context that bespoke the phenomenon's causal presence, not as a consequence of *a priori* hypothesis generation. But explaining how pluralistic ignorance arose in a situation does not require the degree of understanding that is entailed in specifying the conditions that predictably produce it. Until the field takes on the latter challenge, which would necessitate identifying relevant mediators and moderators, our understanding of the phenomenon will remain incomplete. With signs that interest in pluralistic ignorance is higher than ever, one hopes that this challenge will be front and center as the phenomenon enters its 2nd century of conceptual life.

Author contributions

DM: Writing—original draft.

Funding

The author(s) declare that no financial support was received for the research, authorship, and/or publication of this article.

Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

⁷ For a comprehensive review of the phenomena linked to pluralistic ignorance, see Sargent and Newman (2021).

⁸ The variety of phenomena classified as instances of pluralistic ignorance also complicates discussions of its rationality (Bjerring et al., 2014; Grosz, 2020).

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated

organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

References

- Abrams, D., Lalot, F., and Hogg, M. A. (2021). Intergroup and intragroup dimensions of COVID-19: a social identity perspective on social fragmentation and unity. *Group Proc. Int. Relat.* 24, 221–209. doi: 10.1177/1368430220983440
- Akers, R. L. (1977). Prisonization in five countries: types of prison and inmate characteristics. *Criminology* 14, 527–542. doi: 10.1111/j.1745-9125.1977.tb00042.x
- Allport, F. H. (1924). *Social Psychology*. Boston, MA: Houghton-Mifflin.
- Arias, E. (2019). How does the media influence social norms? Experimental evidence of the role of common knowledge. *Polit. Sci. Res. Methods* 7, 561–578. doi: 10.1017/psrm.2018.1
- Ashburn-Nardo, L., and Abdul Karim, M. F. (2019). "The CPR model: Confronting prejudice and discrimination." in *Confronting Prejudice and Discrimination: The Science of Changing Minds and Behaviors*, eds. R. K. Mallett and M. J. Monteith (Amsterdam: Elsevier), 29–47.
- Benaquisto, L., and Freed, P. J. (1996). The myth of inmate lawlessness: The perceived contradiction between self and other in inmates' support for criminal justice sanctioning norms. *Law Soc. Rev.* 30, 481–511. doi: 10.2307/3054126
- Berger, J., and Milkman, K. L. (2012). What makes online content viral? *J. Market. Res.* 49, 192–205. doi: 10.1509/jmr.10.0353
- Bicchieri, C. (2016). *Norms in the Wild: How to Diagnose, Measure, and Change Social Norms*. New York, NY: Oxford University Press.
- Bicchieri, C., and Yoshitaka, F. (1999). The great illusion: ignorance, informational cascades, and the persistence of unpopular norms. *Bus. Ethics Q.* 9, 127–155. doi: 10.2307/3857639
- Bjerring, J. C., Hansen, J. U., and Pedersen, N. J. L. L. (2014). On the rationality of pluralistic ignorance. *Synthese* 191, 2445–2470. doi: 10.1007/s11229-014-0434-1
- Blair, C. W., Chu, J. A., and Schwartz, J. A. (2022). The two faces of opposition to chemical weapons: sincere versus insincere norm-holders. *J. Conflict Resol.* 66, 677–703. doi: 10.1177/00220027211057057
- Blanton, H., Koblitz, A., and McCaul, K. D. (2008). Misperceptions about norm misperceptions: descriptive, injunctive, and affective 'social norming' efforts to change health behaviors. *Soc. Pers. Psychol. Compass* 2, 1379–1399. doi: 10.1111/j.1751-9004.2008.00107.x
- Blatz, C. W., and Mercier, B. (2018). False polarization and false moderation: political opponents overestimate the extremity of each other's ideologies but underestimate each other's certainty. *Soc. Psychol. Pers. Sci.* 9, 521–529. doi: 10.1177/1948550617712034
- Brady, W. J., McLoughlin, K. L., Torres, M. P., Luo, K., Gendren, M. C., Crockett, M. J., et al. (2023). Over perception of moral outrage in online social networks inflates beliefs about intergroup hostility. *Nat. Hum. Behav.* 10, 1–11. doi: 10.1038/s41562-023-01582-0
- Breed, W., and Ktsanes, T. (1961). Pluralistic ignorance in the process of opinion formation. *Pub. Opinion Q.* 25, 382–392. doi: 10.1086/267034
- Brown, G. D. A., Lewandowsky, S., and Huang, Z. (2022). Social sampling and expressed attitudes: authenticity preference and social extremeness aversion lead to social norm effects and polarization. *Psychol. Rev.* 129, 18–48. doi: 10.1037/rev0000342
- Browne, G. J., Appan, R., Safi, R., and Mellarkod, V. (2018). Investigating illusions of agreement in group requirements determinations. *Inf. Manage.* 55, 1071–1083. doi: 10.1016/j.im.2018.05.013
- Burzstyn, L., González, A. L., and Yanagizawa-Drott, D. (2020). Misperceived social norms: Women working outside the home in Saudi Arabia. *Am. Econ. Rev.* 110, 2997–3029. doi: 10.1257/aer.20180975
- Burzstyn, L., and Yang, D. Y. (2022). Misperceptions about others. *Ann. Rev. Econ.* 14, 425–452. doi: 10.1146/annurev-economics-051520-023322
- Castioni, P., Andrighetto, G., Galloti, R., Pollizi, E., and Domenico, D., e. M. (2022). The voice of few, the opinions of many: Evidence of social biases in Twitter COVID-19 fake news sharing. *R. Soc. Open Sci.* 10:220716. doi: 10.1098/rsos.220716
- Chambers, J. R. (2008). Explaining false uniqueness: why we are both better and worse than others. *Soc. Pers. Psychol. Compass* 2, 878–894. doi: 10.1111/j.1751-9004.2008.00076.x
- Chen, M., and Bargh, J. (1997). Nonconscious behavioral confirmation processes: The self-fulfilling consequences of automatic stereotype activation. *J. Exp. Soc. Psychol.* 33, 541–560. doi: 10.1006/jesp.1997.1329
- Chen, S., Wan, F., and Yang, S. (2022). Normative misperceptions regarding pro-environmental behavior: mediating role of outcome efficacy and problem awareness. *J. Environ. Psychol.* 84, 101917. doi: 10.1016/j.jenvp.2022.101917
- Chernoff, R. A., and Davison, G. C. (2005). An evaluation of a brief HIV/AIDS prevention intervention for college students using normative feedback and goal setting. *AIDS Educ. Prev.* 17, 91–104. doi: 10.1521/aeap.17.3.91.62902
- Chorus, C., Van Cranenburgh, S., Daniel, A. M., Sandorf, E. D., Sobhani, A., Szép, T., et al. (2020). Obfuscation maximization-based decision-making: theory, methodology and first empirical evidence. *Mathemat. Soc. Sci.* 109, 28–44. doi: 10.1016/j.mathsocsci.2020.10.002
- Chowdhury, R. (2021). *Examining Algorithmic Amplification of Political Content on Twitter*. Available online at: https://blog.twitter.com/en_us/topics/company/2021/rml-politicalcontent
- Chwe, M. (1998). Culture, circles, and commercials: publicity, common knowledge, and social coordination. *Ration. Soc.* 10, 47–75. doi: 10.1177/104346398010001002
- De Souza, D., and Schmader, L. (2022). The misjudgment of men: does pluralistic ignorance inhibit allyship? *J. Pers. Soc. Psychol.* 122, 265–285. doi: 10.1037/pspi0000362
- Dempsey, R. C., McAlaney, J., and Bewick, B. M. (2018). A critical appraisal of the social norms approach as an interventional strategy for health-related behavior and attitude change. *Front. Psychol.* 9, 2180. doi: 10.3389/fpsyg.2018.02180
- Dixon, G., Garrett, K., Susmann, M., and Bushman, B. J. (2020). Public opinion perceptions, private support, and public actions of US adults regarding gun safety policy. *JAMA Netw. Open.* 3, e2029571. doi: 10.1001/jamanetworkopen.2020.29571
- Duggan, M., and Smith, A. (2016). *The Political Environment on Social Media*. Pew Research Center: Internet, Science and Tech. Available online at: <https://www.pewresearch.org/internet/2016/10/25/the-political-environment-on-social-media/> (accessed October 25, 2016).
- Dyne, L. V., Ang, S., and Botero, I. C. (2003). Conceptualizing employee silence and employee voice as multidimensional constructs. *J. Manage. Stud.* 40, 1359–1392. doi: 10.1111/1467-6486.00384
- Ebbinghaus, H. (1908). *Psychology: An Elementary Textbook*. New York, NY: Arno Press. doi: 10.1037/13638-000
- Ecker, U. K., Sanderson, J. A., McIlhiney, P., Rowsell, J. J., Quekett, H. L., Brown, G. D., et al. (2023). Combining refutations and social norms increases belief change. *Q. J. Exp. Psychol. (Hove)*. 76, 1275–1297. doi: 10.1177/17470218221111750
- Eisner, L., Spini, D., and Sommet, N. (2020). A contingent perspective on pluralistic ignorance: when the attitudinal object matters. *Int. J. Pub. Opinion Res.* 32, 25–45. doi: 10.1093/ijpor/edz004
- Elder, J., Derreumaux, Y., and Hughes, B. (2021). Preference falsification: how social conformity as an interdependent, recursive, and multilevel process corrupts public knowledge. *PsyArXiv [Preprint]*. doi: 10.31234/osf.io/b2xkp
- Elster, J. (2015). *Explaining Social Behavior: More Nuts and Bolts for the Social Sciences*. Cambridge: Cambridge University Press.
- Fernbach, P. M., and Van Boven, L. (2022). False polarization: cognitive mechanisms and potential solutions. *Curr. Opin. Psychol.* 43, 1–6. doi: 10.1016/j.copsyc.2021.06.005
- Fields, J. M., and Schuman, H. (1976). Public beliefs about the beliefs of the public. *Pub. Opin. Q.* 40, 427–448. doi: 10.1086/268330
- Frey, B. S. (2023). Camouflage: a dominant reaction to worsening conditions. *Ration. Soc.* 5, 1–19. doi: 10.1177/10434631231157588
- Geiger, N., and Swim, J. K. (2014). Climate of silence: pluralistic ignorance as a barrier to climate change discussion. *J. Environ. Psychol.* 47, 79–90. doi: 10.1016/j.jenvp.2016.05.002
- Gilovich, T., Savitsky, K., and Medvec, V. H. (1998). The illusion of transparency: biased assessments of others' ability to read one's emotional states. *J. Pers. Soc. Psychol.* 75, 332–346. doi: 10.1037/0022-3514.75.2.332

- Gil-White, F. J. (2005). How conformism creates ethnicity creates conformism (and why this matters to lots of things). *The Monist* 88, 189–237. doi: 10.5840/monist200588211
- Glynn, C., and Hoge, M. E. (2014). “Speaking in spirals: An updated meta-analysis of the spiral of silence.” in *The Spiral of Silence: New Perspectives on Communication and Public Opinion*, eds. W. Donsbach, C. Salmon and Y. Tsafati (New York, NY: Routledge), 65–72.
- Goethals, G. R., Messick, D. M., and Allison, S. (1991). “The uniqueness bias: Studies in constructive social comparison,” in *Social comparison: Contemporary theory and research*, eds. J. Suls, and T. A. Wills (Hillsdale, NJ: Erlbaum), 149–176.
- Goffman, E. (1959). *The Presentation of Self in Everyday Life*. New York, NY: Doubleday.
- Goffman, E. (1961). *Asylums*. New York, NY: Anchor.
- Grant, D., O’Neil, K., and Stephens, L. (2009). Pluralistic ignorance among assembled peers. *Sociol. Persp.* 52, 55–79. doi: 10.1525/sop.2009.52.1.59
- Greeley, A. M., and Sheatsley, P. B. (1971). Attitudes toward racial integration. *Sci. Am.* 225, 13–19. doi: 10.1038/scientificamerican1271-13
- Grosz, D. (2020). The irrationality of pluralistic ignorance. *Episteme* 17, 195–208.
- Harvey, J. B. (1974). The Abilene paradox: the management agreement. *Org. Dyn.* 3, 63–80. doi: 10.1016/0090-2616(74)90005-9
- Harvey, J. B. (1988). *The Abilene Paradox and Other Meditations on Management*. London: Lexington Books.
- Hendricks, V. F., and Vestergaard, M. (2018). *Reality Lost: Markets of Attention, Misinformation, and Manipulation*. Cham: Springer.
- Hinton, P. (2017). Implicit stereotypes and the predictive brain: cognition and culture in “biased” person perception. *Palgrave Commun.* 3, 17086. doi: 10.1057/palcomms.2017.86
- Holtgraves, T. (2021). Understanding miscommunication: speech act recognition in digital contexts. *Cognitive Sci.* 45, e13023. doi: 10.1111/cogs.13023
- Huszár, F., and Ktena, S. I., O’Brien, C., Belli, L., Schlaikjer, A., and Hardt, M. (2022). Algorithmic amplification of politics on Twitter. *Proc. Nat. Acad. Sci.* 119, e2025334119. doi: 10.1073/pnas.2025334119
- Isenberg, N. (2023). *Misperceived Norms About Diversity and Inclusion*. Madison: The University of Wisconsin - Madison.
- Jachimowicz, J. M., Hauser, O. P., O’Brien, J. D., Sherman, E., and Galinsky, A. D. (2018). The critical role of second-order normative beliefs in predicting energy conservation. *Nat. Hum. Behav.* 2, 757–764. doi: 10.1038/s41562-018-0434-0
- Janis, I. L. (1972). *Groupthink: A Psychological Study of Foreign-Policy Decisions and Fiascoes*. Boston, MA: Houghton-Mifflin.
- Janis, I. L. (1982). *Groupthink: Psychological Studies of Policy Decisions and Fiascoes*. Boston, MA: Houghton-Mifflin.
- Jordan, J. J., and Rand, D. G. (2020). Signaling when no one is watching: a reputation heuristics account of outrage and punishment in one-shot anonymous interactions. *J. Pers. Soc. Psychol.* 118, 57–88. doi: 10.1037/pspi0000186
- Juul, J., and Ugander, J. (2021). Comparing information diffusion mechanisms by matching on cascade size. *Proc. Nat. Acad. Sci.* 118, 2100786118. doi: 10.1073/pnas.2100786118
- Katz, D., and Allport, F. H. (1931). *Student Attitudes: A Report of the Syracuse University Research Study*. Towson, MD: Craftsmen Press.
- Katz, D., and Schanck, R. L. (1938). *Social Psychology*. New York, NY: Wiley.
- Katz, E., Dayan, D., and Monty, P. (1981). Communications in the 21st century: In defense of media events. *Org. Dyn.* 10, 68–80. doi: 10.1016/0090-2616(81)90033-4
- Kauffman, K. (1981). Prison officer attitudes and perceptions of attitudes. *J. Res. Crime Delinq.* 18, 272–294. doi: 10.1177/002242788101800205
- Keohane, R. O., and Victor, D. G. (2016). Cooperation and discord in global climate policy. *Nat. Clim. Change* 6, 570–575. doi: 10.1038/nclimate2937
- Kerr, N. L. (1996). “Does my contribution really matter?”: Efficacy in social dilemmas. *Eur. Rev. Soc. Psychol.* 7, 209–240. doi: 10.1080/14792779643000029
- Keysar, B. (1994). The illusory transparency of intention: linguistic perspective taking in text. *Cogn. Psychol.* 26, 165–208. doi: 10.1006/cogp.1994.1006
- Kitts, J. A. (2003). Egocentric bias or information management? Selective disclosure and the social roots of norm misperception. *Soc. Psychol. Q.* 66, 222–237. doi: 10.2307/1519823
- Kjeldahl, E. M., and Hendricks, V. F. (2018). The sense of social influence: pluralistic ignorance in climate change. *EMBO Rep.* 19, e47185. doi: 10.15252/embr.201847185
- Klofas, J., and Toch, H. (1982). The guard subculture myth. *J. Res. Crime Delinq.* 19, 238–254. doi: 10.1177/002242788201900207
- Knobloch-Westerwick, S., Sharma, N., Hansen, D. L., and Alter, S. (2005). Impact of popularity indications on readers’ selective exposure to online news. *J. Broadcast. Electr. Media* 49, 296–313. doi: 10.1207/s15506878jobem4903_3
- Korte, C. (1972). Pluralistic ignorance about student radicalism. *Sociometry* 35, 576–587. doi: 10.2307/2786534
- Krueger, J. (1998). On the perception of social consensus. *Adv. Exp. Soc. Psychol.* 30, 163–239. doi: 10.1016/S0065-2601(08)60384-6
- Kuran, T. (1995). *Private Truths, Public Lies: The Social Consequences of Preference Falsification*. Boston, MA: Harvard University Press.
- Lambert, T. A., Kahn, A. S., and Apple, K. J. (2003). Pluralistic ignorance and hooking up. *J. Sex Res.* 40, 129–133. doi: 10.1080/00224490309552174
- Latané, B., and Darley, J. (1970). *The Unresponsive Bystander: Why Doesn’t he Help?* New York, NY: Appleton-Century-Crofts.
- Lees, J. M., and Cikara, M. (2020). Understanding and combating misperceived polarization. *Phil. Trans. R. Soc. B.* 4, 3762020014320200143. doi: 10.31234/osf.io/ncwez
- Levendusky, M. S., and Malhotra, N. (2016). (Mis) perceptions of partisan polarization in the American public. *Public Opinion Q.* 80, 378–391. doi: 10.1093/poq/nfv045
- Leviston, Z., Walker, I., and Morwinski, S. (2013). Your opinion on climate change might not be as common as you think. *Nat. Clim. Change* 3, 334–337. doi: 10.1038/nclimate1743
- Lewandowsky, S., Cook, J., Fay, N., and Gignac, G. E. (2019). Science by social media: attitudes towards climate change are mediated by perceived social consensus. *Mem. Cognit.* 47, 1445–1456. doi: 10.3758/s13421-019-00948-y
- Lippmann, W. (1922). *Public Opinion*. San Diego, CA: Harcourt, Brace.
- Lubell, M. (2002). Environmental activism as collective action. *Environ. Behav.* 34, 431–454. doi: 10.1177/00116502034004002
- Mackie, G. (1996). Ending foot binding and infibulation: a convention account. *Am. Sociol. Rev.* 61, 999–1017. doi: 10.2307/2096305
- Mandeville, A., Halbesleben, J., and Whitman, M. (2016). Misalignment and misperception in preferences to utilize family-friendly benefits: implications for benefit utilization and work-family conflict. *Pers. Psychol.* 69, 895–929. doi: 10.1111/peps.12124
- Marks, G., and Miller, N. (1987). Ten years of research on the false-consensus effect: An empirical and theoretical review. *Psychol. Bull.* 102, 72–90. doi: 10.1037/0033-2909.102.1.72
- Mastroianni, A. M., and Dana, J. (2022). Widespread misperceptions of long-term attitude change. *Proc. Nat. Acad. Sci.* 119, e2107260119. doi: 10.1073/pnas.2107260119
- Mendes, A., Lopez-Valeiras, E., and Joao Lunkes, R. (2017). Pluralistic ignorance: conceptual framework, antecedents and consequences. *Intang. Capital* 13, 781–804. doi: 10.3926/ic.1063
- Merton, R. K. (1948). The self-fulfilling prophecy. *The Antioch Rev.* 8, 193–210. doi: 10.2307/4609267
- Merton, R. K. (1968). *Social Theory and Social Structure*. Glencoe, IL: Free Press of Glencoe.
- Mildenberger, M., and Tingley, D. (2019). Beliefs about climate beliefs: The importance of second-order opinions for climate politics. *Br. J. Polit. Sci.* 49, 1279–1307. doi: 10.1017/S0007123417000321
- Miller, D. T. (2020). *The Power of Identity Claims: How We Value and Defend the Self*. New York, NY: Routledge. doi: 10.4324/9781003011590
- Miller, D. T., and Laurin, K. (2024). “History of social psychology: Four enduring tensions,” in *Handbook of Social Psychology*, eds. D. T. Gilbert, S. Fiske, E. Finkel, and W. Mendes (Princeton NJ: Princeton University Press).
- Miller, D. T., and McFarland, C. (1987). Pluralistic ignorance: when similarity is interpreted as dissimilarity. *J. Pers. Soc. Psychol.* 53, 298–305. doi: 10.1037/0022-3514.53.2.298
- Miller, D. T., and McFarland, C. (1991). “When social comparison goes awry: The case of pluralistic ignorance,” in *Social Comparison: Contemporary Theory and Research*, eds. J. Suls and T. Wills (London: Lawrence Erlbaum), 287–313.
- Miller, D. T., Monin, B., and Prentice, D. A. (2000). “Pluralistic ignorance and inconsistency between private attitudes and public behaviors,” in *Attitudes, Behavior, and Social Context: The Role of Norms and Group Membership*, eds. D. J. Terry and M. A. Hogg (London: Lawrence Erlbaum), 95–113.
- Miller, D. T., and Morrison, K. R. (2009). Expressing deviant opinions: Believing you are in the majority helps. *J. Exp. Soc. Psychol.* 45, 740–747. doi: 10.1016/j.jesp.2009.04.008
- Miller, D. T., and Nelson, L. D. (2002). Seeing approach motivation in the avoidance behavior of others: implications for an understanding of pluralistic ignorance. *J. Pers. Soc. Psychol.* 83, 1066–1075. doi: 10.1037/0022-3514.83.5.1066
- Miller, D. T., and Prentice, D. A. (1994). Collective errors and errors about the collective. *Pers. Soc. Psychol. Bull.* 20, 541–550. doi: 10.1177/0146167294205011
- Miller, D. T., and Prentice, D. A. (2016). Changing norms to change behavior. *Ann. Rev. Psychol.* 67, 339–361. doi: 10.1146/annurev-psych-010814-015013

- Miller, D. T., and Turnbull, W. (1986). Expectancies and interpersonal processes. *Ann. Rev. Psychol.* 37, 233–256. doi: 10.1146/annurev.ps.37.020186.001313
- Miyajima, T., and Yamaguchi, H. (2017). I want to but I won't: pluralistic ignorance inhibits intentions to take paternity leave in Japan. *Front. Psychol.* 8, 1–12. doi: 10.3389/fpsyg.2017.01508
- Monin, B., and Norton, M. I. (2003). Perceptions of a fluid consensus: Uniqueness bias, false consensus, false polarization, and pluralistic ignorance in a water conservation crisis. *Pers. Soc. Psychol. Bull.* 29, 559–567. doi: 10.1177/0146167203029005001
- Morrison, K. R., and Miller, D. T. (2008). Distinguishing between silent and vocal minorities: not all deviants feel marginal. *J. Pers. Soc. Psychol.* 94, 871–882. doi: 10.1037/0022-3514.94.5.871
- Munsch, C. L., Ridgeway, C. L., and Williams, J. C. (2014). Pluralistic ignorance and the flexibility bias: understanding and mitigating flextime and flexplace bias at work. *Work Occup.* 41, 40–62. doi: 10.1177/0730888413515894
- Mutz, D. C. (1998). *Impersonal Influence: How Perceptions of Mass Collectives Affect Political Attitudes*. Cambridge: Cambridge University Press.
- Nisbett, R. E., and Kunda, Z. (1985). Perception of social distributions. *J. Pers. Soc. Psychol.* 48, 297–311. doi: 10.1037/0022-3514.48.2.297
- Noelle-Neumann, E. (1974). The spiral of silence: a theory of public opinion. *J. Commun.* 24, 43–51. doi: 10.1111/j.1460-2466.1974.tb00367.x
- Noelle-Neumann, E. (1993). *The Spiral of Silence: Public Opinion – Our Social Skin*. Chicago, NY: Chicago University Press.
- Noelle-Neumann, E., and Petersen, T. (2004). “The spiral of silence and the social nature of man,” in *Handbook of Political Communication Research*, ed L. L. Kaid (London: Lawrence Erlbaum), 339–357. doi: 10.4324/9781410610584-23
- O’Gorman, H. J. (1975). Pluralistic ignorance and white estimates of white support for racial segregation. *Pub. Opin. Q.* 39, 313–330. doi: 10.1086/268231
- O’Gorman, H. J. (1986). The discovery of pluralistic ignorance: an ironic lesson. *J. History Behav. Sci.* 22, 333–347. doi: 10.1002/1520-6696(198610)22:4<333::AID-JHBS2300220405>3.0.CO;2-X
- O’Gorman, H. J. (1988). “Pluralistic ignorance and reference groups: The case of ingroup ignorance,” in *Surveying Social Life Papers in Honor of Herbert H. Hyman*, ed. H. J. O’Gorman (Middletown, CT: Wesleyan University Press), 145–173.
- Oreskes, N., and Conway, E. M. (2010). *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues From Tobacco Smoke to Global Warming*. London: Bloomsbury Press.
- Porten-Cheé, P., and Eilders, C. (2020). The effects of likes on public opinion perception and personal opinion. *Communications* 45, 223–239. doi: 10.1515/commun-2019-2030
- Prentice, D. A. (2013). “The psychology of social norms and the promotion of human rights,” in *Understanding Social Action, Promoting Human Rights*, eds. R. Goodman, D. Jinks, and A. K. Woods (Oxford: Oxford Academic).
- Prentice, D. A., and Miller, D. T. (1993). Pluralistic ignorance and alcohol use on campus: some consequences of misperceiving the social norm. *J. Pers. Soc. Psychol.* 64, 243–256. doi: 10.1037/0022-3514.64.2.243
- Prentice, D. A., and Miller, D. T. (1996). Pluralistic ignorance and the perpetuation of social norms by unwitting actors. *Adv. Exp. Soc. Psychol.* 28, 161–209. doi: 10.1016/S0065-2601(08)60238-5
- Prentice, D. A., and Miller, D. T. (2002). The emergence of homegrown stereotypes. *Am. Psychol.* 57, 352–359. doi: 10.1037/0003-066X.57.5.352
- Prentice, D. A., and Paluck, E. L. (2020). Engineering social change using social norms: lessons from the study of collective action. *Curr. Opin. Psychol.* 35, 138–142. doi: 10.1016/j.copsyc.2020.06.012
- Reiber, C., and Garcia, J. R. (2010). Hooking up: gender differences, evolution, and pluralistic ignorance. *Evol. Psychol.* 8, 390–404. doi: 10.1177/147470491000800307
- Rinker, D. V., Young, C. M., Krieger, H., Lembo, J., and Neighbors, C. (2017). Evaluations and perceptions of others’ evaluations of negative alcohol-related consequences predict negative alcohol-related consequences among college drinkers. *J. Stud. Alcohol Drugs.* 78, 249–257. doi: 10.15288/jsad.2017.78.249
- Rosenthal, R., and Jacobson, L. (1968). *Pygmalion in the Classroom: Teacher Expectation and Pupils’ Intellectual Development*. Holt, Rinehart & Winston.
- Ross, L., and Ward, A. (1996). “Naive realism in everyday life: implications for social misunderstanding,” in *Values and Knowledge*, eds. E. S. Reed, E. Turiel, and T. Brown (London: Lawrence Erlbaum Associates), 103–135.
- Sabini, J., Cosmas, K., Siepmann, M., and Stein, J. (1999). Underestimates and truly false consensus effects in estimates of embarrassment and other emotions. *Basic Appl. Soc. Psychol.* 21, 223–241. doi: 10.1207/S15324834BASP2103_6
- Sandstrom, M. J., Makover, H., and Bartini, M. (2013). Social context of bullying: do misperceptions of group norms influence children’s responses to witnessed episodes? *Soc. Inf.* 8, 196–215. doi: 10.1080/15534510.2011.651302
- Santos, F. P., Levin, S. A., and Vasconcelos, V. V. (2021). Biased perceptions explain collective action deadlocks and suggest new mechanisms to prompt cooperation. *iScience* 24, 102375. doi: 10.1016/j.isci.2021.102375
- Sargent, R. H., and Newman, L. S. (2021). Pluralistic ignorance research in psychology: a scoping review of topic and method variation and directions for future research. *Rev. Gen. Psychol.* 25, 163–184. doi: 10.1177/1089268021995168
- Savitsky, K. K. (1997). Perceived transparency and the leakage of emotional states: Do we know how little we show? *Dissertation Abstr. Int. Sci. Eng.* 58, 3371.
- Schaerer, M., Kern, M., Berger, G., Medvec, V., and Swaab, T. I. (2018). The illusion of transparency in performance appraisals: when and why accuracy motivation explains unintentional feedback inflation. *Org. Behav. Dec. Proc.* 144, 171–186. doi: 10.1016/j.obhdp.2017.09.002
- Schanck, R. L. (1932). A study of a community and its groups and institutions conceived of as behaviors of individuals. *Psychol. Monograph.* 43, 1–133. doi: 10.1037/h0093296
- Schanck, R. L. (1934). A study of change in institutional attitudes in a rural community. *J. Soc. Psychol.* 5, 121–128. doi: 10.1080/00224545.1934.9921592
- Scheufele, D. A., and Moy, P. (2000). Twenty-five years of the spiral of silence: a conceptual review and empirical outlook. *Int. J. Publ. Opin. Res.* 12, 3–28. doi: 10.1093/ijpor/12.1.3
- Schroeder, C. M., and Prentice, D. A. (1998). Exposing pluralistic ignorance to reduce alcohol use among college students. *J. Appl. Soc. Psychol.* 28, 2150–2816. doi: 10.1111/j.1559-1816.1998.tb01365.x
- Schwenkenbecher, A. (2022). How we fail to know: Group-Based ignorance and collective epistemic obligations. *Political Stu.* 70, 901–918. doi: 10.1177/00323217211000926
- Shamir, J. (1986). Pre-election polls in Israel: Structural constraints on accuracy. *Pub. Opin. Q.* 50, 62–75. doi: 10.1086/268959
- Shamir, J., and Shamir, M. (1997). Pluralistic Ignorance across and over time: information cues and biases. *Public Opin. Q.* 61, 227–260. doi: 10.1086/297794
- Shaw, M. E., and Blum, J. M. (1965). Group performance as function of task difficulty and the group’s awareness of member satisfaction. *J. Appl. Psychol.* 49, 151–154. doi: 10.1037/h0022099
- Shelton, J. N., and Richeson, J. A. (2005). Intergroup contact and pluralistic ignorance. *J. Pers. Soc. Psychol.* 88, 91–107. doi: 10.1037/0022-3514.88.1.91
- Smerdon, D., Offerman, T., and Gneezy, U. (2020). “Everybody’s doing it”: on the persistence of bad social norms. *Exp. Econ.* 23, 392–426. doi: 10.1007/s10683-019-09616-z
- Sparkman, G., Geiger, N., and Weber, E. U. (2022). Americans experience a false social reality by underestimating popular climate policy support by nearly half. *Nat. Commun.* 13, 4779. doi: 10.1038/s41467-022-32412-y
- Stangor, C. (2016). “The study of stereotyping, prejudice, and discrimination within social psychology: a quick history of theory and research,” in *Handbook of Prejudice, Stereotyping, and Discrimination*, eds. T. D. Nelson (London: Psychology Press), 3–27.
- Suls, J., and Wan, C. K. (1987). In search of the false-uniqueness phenomenon: Fear and estimates of social consensus. *Journal of Personality and Social Psychology*, 52, 211–217.
- Tajfel, H. (1978). “Social categorization, social identity and social comparison,” in *Differentiation between Social Groups: Studies in the Social Psychology of Intergroup Relations*, ed. H. Tajfel (London: Academic Press), 61–76.
- Tajfel, H. (1981). *Human Groups and Social Categories—Studies in Social Psychology*. Cambridge: Cambridge University Press.
- Tankard, M. E., and Paluck, E. L. (2017). The effect of a Supreme Court decision regarding gay marriage on social norms and personal attitudes. *Psychol. Sci.* 28, 1334–1344. doi: 10.1177/0956797617709594
- Taylor, D. G. (1982). Pluralistic ignorance and the spiral of silence: a formal analysis. *Pub. Opinion Q.* 46, 311–335. doi: 10.1086/268729
- Terry, D. J., and Hogg, M. A. (1996). Group norms and the attitude-behavior relationship: a role for group identification. *Pers. Soc. Psychol. Bull.* 22, 776–793. doi: 10.1177/0146167296228002
- Toch, H., and Klofas, J. (1984). “Pluralistic ignorance, revisited,” in *Progress in Applied Social Psychology*, eds. G. M. Stephenson and J. H. Davis (New York, NY: Wiley), 129–159.
- Todorov, A., and Mandisodza, A. N. (2004). Public opinion on foreign policy: the multilateral public that perceives itself as unilateral. *Pub. Opin. Q.* 68, 323–348. doi: 10.1093/poq/nfh036
- Tormola, Z., and Rucker, D. (2024). “Attitude structure and function,” in *Handbook of Social Psychology*, eds. D. Gilbert, S. Fiske, E. Finkel, and W. Mendes (Princeton, NJ: Princeton University Press).
- Tufekci, Z. (2017). *Twitter and Tear Gas: The Power and Fragility of Networked Protest*. New York, NY: Yale University Press.

- Turner, J. C., Hogg, M., Oakes, P., Reicher, S., and Wetherell, M. (1987). *Rediscovering the Social Group: A Self-Categorization Theory*. England: Basil Blackwell.
- Urminsky, O., and Bergman, A. (2021). The masked majority: underprediction of widespread support for Covid-19 safety policies. *PsyArXiv [Preprint]*. doi: 10.31234/osf.io/hdkv
- Van Boven, L. (2000). Pluralistic ignorance and political correctness: the case of affirmative action. *Polit. Psychol.* 21, 267–276. doi: 10.1111/0162-895X.00187
- Van Boven, L., Loewenstein, G., and Dunning, D. (2005). The illusion of courage in social predictions: Underestimating the impact of fear of embarrassment on other people. *Organ. Behav. Hum. Decis. Process.* 96, 130–141.
- Van Grootel, S., Van Laar, C., Meeussen, L., Schmader, T., and Sczesny, S. (2018). Uncovering pluralistic ignorance to change men's communal self-descriptions, attitudes, and behavioral intentions. *Front. Psychol.* 9, 1–12. doi: 10.3389/fpsyg.2018.01344
- Vandello, J. A., Ransom, S., Hettinger, V. E., and Askew, K. (2009). Men's misperceptions about the acceptability and attractiveness of aggression. *J. Exp. Soc. Psychol.* 45, 1209–1219. doi: 10.1016/j.jesp.2009.08.006
- Váradí, L., Barna, I., and Németh, R. (2021). Whose norms, whose prejudice? The dynamics of perceived group norms and prejudice in new secondary school classes. *Front. Psychol.* 7, 524547. doi: 10.3389/fpsyg.2020.524547
- Vorauer, J. D., and Claude, S. (1998). Perceived versus actual transparency of goals in negotiation. *Pers. Soc. Psychol. Bull.* 24, 371–385. doi: 10.1177/0146167298244004
- Vorauer, J. D., and Miller, D. T. (1997). Failure to recognize the effect of implicit social influence on the presentation of self. *J. Pers. Soc. Psychol.* 73, 281–295. doi: 10.1037/0022-3514.73.2.281
- Vorauer, J. D., and Ratner, R. K. (1996). Who's going to make the first move? Pluralistic ignorance as an impediment to relationship formation. *J. Soc. Pers. Relation.* 13, 483–506. doi: 10.1177/0265407596134001
- Wenzel, M. (2005). Misperceptions of social norms about tax compliance: From theory to intervention. *J. Econ. Psychol.* 26, 862–883. doi: 10.1016/j.joep.2005.02.002
- Wheeler, S. (1961). "Role conflict in correctional communities," in *The Prison: Studies in Institutional Organization and Change*, ed. D. R. Cressey (New York, NY: Holt, Rinehart and Winston) 75–98.
- Willower, R. J., and Packard, J. S. (1972). School counselors, pupil control ideology, and pluralistic ignorance. *J. Stu. Pers. Assoc. Teacher Educ.* 10, 100–110. doi: 10.1002/j.2164-6171.1972.tb00014.x
- Yang, Y., and Stoddart, M. C. J. (2021). Public engagement in climate communication on China's Weibo: network structure and information flows. *Polit. Gov.* 9, 146–158. doi: 10.17645/pag.v9i2.3754
- Zhu, D. H., and Westphal, J. D. (2011). Misperceiving the beliefs of others: How pluralistic ignorance contributes to the persistence of positive security analyst reactions to the adoption of stock repurchase plans. *Org. Sci.* 22, 869–886. doi: 10.1287/orsc.1100.0575
- Zou, X., Tam, K. P., Morris, M. W., Lee, S. L., Lau, I. Y., Chiu, C. Y., et al. (2009). Culture as common sense: perceived consensus versus personal beliefs as mechanisms of cultural influence. *J. Pers. Soc. Psychol.* 97, 579–597. doi: 10.1037/a0016399