

## Social Norms and Persuasion

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**Abstract:** Social norms, what most people do or approve of, can be leveraged as a powerful tool for gaining compliance. This chapter reviews the behavioral intervention literature to describe and summarize the different ways that social norms can be operationalized to obtain compliance, the underlying motivations and mechanisms driving these effects, and possible delivery mechanisms. Best practices are highlighted for ensuring maximum compliance. The chapter also explores theoretical and empirical literature to review and characterize the behavioral domains in which social norm techniques are effectively implemented, including large-scale applications. The chapter concludes with a general discussion of research findings and suggestions for future research.

### 28.1 INTRODUCTION: GAINING COMPLIANCE WITHOUT ASKING

A college student using the bathroom learns from a sign on the back of the stall door that 62.5 percent of women and 56.3 percent of men had between zero and three alcoholic drinks the last time they socialized and decides to have one fewer drink at a party that night. A homeowner opens their electricity bill and sees that they are using more energy than their “most efficient neighbors” and decides to take steps to conserve energy. A registered voter opens their Facebook account on election day and sees that many of their friends have voted and decides to head to the polls. What each of these scenarios has in common is that social norms are being leveraged to promote beneficial behaviors.

The term *social norm* is commonly used interchangeably to refer to behaviors enacted or approved of by others and to the beliefs or perceptions that support conformity to those behaviors (Schultz et al. 2008). However, it is helpful to distinguish between behavior and belief and is suggested that the term social norm be used in reference to actual behavior and normative beliefs in reference to beliefs (Farrow et al. 2017; Wallen and Romulo 2017). In practice, the distinction between behavior and belief is helpful as social norm interventions do not necessarily require direct observation or interaction with others or their behavior to be persuasive. That is, when properly operationalized, the normative information used as part of an intervention implies that a behavior or belief is the social norm. Here, we use social norm interchangeably but distinguish between behaviors and normative beliefs when applicable.

Sherif (1936: 3) defined social norms as “criteria of conduct which are standardized as a consequence of the contact of individuals.” Pepitone (1976: 642) suggested that “social behavior is more characteristic of some sociocultural collective unit than of individuals observed at random.” Though formative, these abstract definitions do not provide useful

operational guidance toward empirical measurement and application. A more useful definition comes from Cialdini and Trost (1998: 152): “rules and standards that are understood by members of a group, and that guide and/or constrain social behavior without the force of laws.” A variant from van Kleef et al. (2019: 1) suggests “implicit or explicit rules or principles that are understood by members of a group and that guide and/or constrain behavior without the force of laws to engender proper conduct.” More simply, Paluck and Ball (2010) define a social norm as the perception that certain attitudes and behaviors are considered *typical* or *desirable* in a person’s community. A synthesis of these from Nolan (2017: 148) offers some necessary specificity: “rules and standards that are understood by members of a group, and that guide morally relevant social behavior by way of social sanctions, instead of the force of laws.”

These definitions highlight a common dimensionality associated with social norms, that is, *typical* and *desirable*, and the importance of social sanctions. The two-dimensional social norm framework distinguishes between information (typical) and normative (desirable) influence – the *is* and *ought* (Deutsch and Gerard 1955). In the 1990s, Cialdini et al. (1990) mainstreamed these dimensions, which they termed descriptive (typical) and injunctive (desirable). The descriptive norm provides information on what *is* typical, common, or normal, that is, what most people do, while descriptive normative *beliefs* refer to what one thinks most people do. The injunctive norm provides information on what *ought* to be done, referring to a social rule that proscribes or prescribes (un)desirable behavior, while injunctive normative *beliefs* refer to the perception that a behavior is approved or disapproved of.

Since the 1990s, social norm research and interventions have been predominately based on the descriptive/injunctive framework. More recently, Bicchieri (2017) suggests an operationalization based on the ideas of social expectations and preferences (see also Mackie et al. 2015). Here, a social norm is defined as a pattern of behavior such that an individual prefers to conform to it on the condition that they believe that most people in the relevant social network conform to it and/or that most people in the relevant social network believe that they ought to conform to it. Said another way, you are most likely to be persuaded to behave in a certain way if you hold the expectations that (1) enough people conform to the behavioral rule (*empirical expectation*; typical/descriptive), (2) enough people think that you should conform to the rule and will sanction you for nonconformity (*normative expectation*; desirable/injunctive), and (3) you prefer to conform to the rule based on those empirical and normative expectations (*conditional preference*). In this framework, two orders of normative beliefs/expectations exist; a first-order belief about what others do and what others should do and a second-order belief about what others believe /others do and what others believe /others should do, the latter of which is assumed to be most persuasive. In general, the idea that we hold beliefs about others’ expectations of a typical or desirable behavior or belief is the predominant principle.

With social norms defined, there are a few things that are worth noting about social norms interventions. First, unlike other popular compliance techniques such as the door-in-the-face (Cialdini et al. 1975), the foot-in-the-door (Freedman and Fraser 1966), and the even-a-penny techniques (Cialdini and Schroeder 1976), social norms interventions do not require a face-to-face interaction or that an explicit request is made of the target. Instead, the request is implied by the normative information “everyone is (not) doing X, so you should (not) do it too.” Although some interventions do attach a specific request to the normative information, such requests are not required for social norms interventions to be effective.

In this chapter we focus on experimental research conducted in the past two decades that investigated deliberate attempts to leverage social norms to promote beneficial attitudes and behaviors. While naturally existing social norms can also be a source of persuasion, investigations of such norms are typically correlational and do not allow for conclusions to be drawn about social norms as a causal influence. In the remainder of the chapter, we discuss the behavioral domains that have utilized and tested social norms interventions, how social norms have been operationalized and delivered across these domains, best practices for ensuring an effective intervention as well as discussion of the underlying motivations and mechanisms driving these effects.

## 28.2 EVIDENCE FOR EFFECTIVENESS ACROSS BEHAVIORAL DOMAINS

Social norms interventions have been used successfully to change a wide variety of behaviors including health-related behaviors such as problematic drinking and eating, proenvironmental behaviors such as energy and water conservation, and prosocial behaviors such as donating to charities.

**Problematic Drinking.** Research on social norms marketing began in the 1980s with interventions designed to reduce problematic drinking on college campuses (Perkins and Berkowitz 1986; Perkins 2003). Since then, the field has seen a surge in research exploring social norms as a tool for reducing both the rate and the frequency of alcohol consumption among college students, particularly those high users who are most at risk for alcohol-related problems such as blacking out. The typical intervention advertises that alcohol consumption by peers is less than many people expect. A recent meta-analysis of 44 studies comprising 17,445 participants found that social norms interventions targeting alcohol consumption produce substantial changes in normative beliefs (in the direction of the advertised norm) which then led to smaller, but not insignificant, changes in behaviors such as alcohol intake and binge drinking (Prestwich, et al. 2016). These results are especially impressive given that most of the social norms interventions were brief single-exposure communications that were not delivered face-to-face. Importantly, social norms interventions were found to be more effective than social influence interventions that relied on other techniques, such as social support.

The effectiveness of social norms marketing campaigns to address problematic drinking is not limited to college campuses. A statewide social norms marketing campaign targeting young adults in Montana successfully changed normative beliefs about drinking and driving (Perkins et al. 2010). The social norms campaign included TV, radio, and print ads that advertised that most young adults in Montana (four out of five) do not drink and drive and portrayed designating a driver as a normative activity. Following the intervention, young adults in counties exposed to the social norms campaign reported a 2 percent decrease in driving after drinking, while those in the control condition saw a 12 percent *increase*.

**Healthy Eating.** While most research on social norms marketing for problematic drinking has been conducted in field settings, research on social norms interventions for healthy eating has been primarily conducted in the laboratory. Although conducted in what might be considered an artificial setting, a strength of this research is that it typically measures actual eating behavior, operationalized either as choice or as quantity of one or more target foods. A meta-analysis of interventions that manipulated eating norms showed that participants who were led to believe that past participants had eaten a lot of cookies (or other unhealthy food)

consumed more of the high-calorie food themselves, compared to a control condition, while the reverse was true when participants were told that most previous participants had consumed a small quantity of the food (Robinson et al. 2014). Descriptive normative information can also be used successfully to promote healthy food options, such as eating fruits and vegetables, but seem to be more effective among low consumers of such healthy snacks (Stok et al. 2016).

**Other Health Behaviors.** Other health-related behaviors, such as indoor tanning and sedentary behavior, may be suitable targets for social norms interventions. Office workers reported walking more, sitting less, and using the stairs more after receiving an email telling them that other employees were more active than they were during the workday (Priebe and Spink 2015). Similarly, providing students who engage in indoor tanning with a personalized feedback message highlighting their self-reported indoor tanning behavior, their estimate of the norm for indoor tanning, and the actual norm reduced future tanning intentions, particularly among high-frequency tanners who grossly overestimated the norm (Carcicoppolo et al. 2019). Though promising, this study did not include a control group and so further research is required to increase confidence in the results.

Social norms interventions can influence private as well as public behaviors. College students were more likely to wash their hands after using the restroom when they saw signs indicating that members of their in-group washed their hands (Lapinski et al. 2013). The normative messages were more effective than a control message both when a confederate was present in the bathroom *and* when the student was alone.

Most recently, the social norms approach has been adopted by researchers and practitioners working in the field of adolescent and youth sexual and reproductive health. This work is carried out globally to address problems such as child marriage, teen pregnancy, and condom use. Addressing many of these behaviors requires a multi-component approach that incorporates but does not rely solely on social norms interventions (Bingenheimer 2019).

**Energy and Water Conservation.** In a recent review of the literature on social norms and proenvironmental behavior, most studies targeted water and energy conservation or related behaviors such as reusing towels and turning off unused lights (Farrow et al. 2017). Results showed that social norms interventions are an effective way to motivate proenvironmental behavior. For example, bathroom goers in Poland were over three times as likely to turn the light off when leaving a public restroom when they saw a descriptive norm sign above the light fixture that read “the vast majority of people turn off the light when leaving a restroom.” They were over eight times as likely when they saw an injunctive norm sign that read “it is commonly approved that the light should be turned off when leaving a restroom,” compared to a no-sign control (Leoniak and Cwalina 2019: 3). These effects were even more pronounced when the lights were initially off when the participant entered the single stall bathroom and, thus, the contextual cues affirmed the message in the sign.

Attempts to reduce energy and water consumption lend themselves well to the social norms approach: households can be provided with regular feedback about their consumption via utility bills, and information about aggregate energy usage for a given area is readily available to the utility. Perhaps the best-known large-scale application of the social norms approach is via the Opower program. Opower has partnered with more than 100 utility districts to provide households with customized reports about how their energy consumption compares to their neighbors'. Over a ten-year period these reports were found to reduce home energy consumption by an average of 2 to 5 percent (Allcott 2011). In a large-scale field experiment, Ferraro

et al. (2011) found that even a single “dose” of comparative normative feedback reduced home water consumption by approximately 4.8 percent compared to the control group in the summer following treatment. Importantly, social norms interventions to reduce both energy (Allcott and Rogers 2014) and water (Ferraro and Price 2013) consumption have effects that last beyond the life of the intervention.

It is worth noting that the social norms approach has worked to reduce energy consumption where more traditional approaches have failed. For example, in a study that provided participants in southern California with doorhangers once a week for four weeks, only those who saw messages indicating that a majority of their neighbors did things to conserve energy (e.g., taking shorter showers, using fans instead of air-conditioning) reduced their energy consumption in the weeks following the intervention (Nolan et al. 2008). Interestingly, those who received appeals to “save money,” “protect the environment,” and “do your part for future generations” perceived these messages to be more motivating than those in the social norms condition, even though they failed to actually conserve energy. Similarly, hotel guests who were told that 75 percent of guests participated in the hotel’s towel reuse program were significantly more likely to reuse their towels compared to those who received the standard environmental message imploring them to “help save the environment” (Goldstein et al. 2008). Follow-up research showed that the social norms message was especially effective when it referenced “other guests who stayed in this room.” This was true even though guests identified other tested reference groups, such as “citizens” or “men and women,” as being more important to their identities.

While most research has focused on adoption of curtailment behaviors, social norms interventions may also be used to promote uptake of efficiency behaviors such as purchase of energy-efficient home appliances. In both a scenario study measuring hypothetical consumer choices and a survey study that asked homeowners about their intentions to purchase an efficient home heating pump, providing normative information indicating that a majority of neighbors had installed the efficient heat pump increased choices and intentions in that direction, compared to a control condition (Hafner et al. 2019). Similarly, households who received a social norms message were almost twice as likely to sign up for a utility sponsored program to install water-saving devices compared to those who received a standard appeal (Lede et al. 2019).

**Other Environmental Behaviors.** Surprisingly, only one study has looked at intervening with social norms to promote recycling behavior. Schultz (1999) found that providing normative feedback about the recycling behavior of neighbors increased both the frequency of participation in the curbside recycling program and the amount recycled.

Social norms interventions can also be designed to promote proenvironmental behaviors that are not yet descriptively normative. For example, Sparkmann and Walton (2017) used *dynamic norms* to reduce meat consumption. Specifically, they emphasized how three in ten people were making an effort to eat less meat in recent years and found that this decreased the likelihood of the participant ordering a meal with meat for their lunch, compared to a control group that read about changes in people’s hobbies.

When designing a social norms message, it may be more powerful to provide people with information about what a majority of people *don’t* do. For example, participants in a simulated online shopping environment were more likely to choose (reject) an organic (low-priced) peanut butter jar when told “other people avoid” the low-priced peanut butter versus “want” the organic version (Bergquist and Nilsson 2019).

**Donating to Charity.** Individuals are more likely to donate to charitable causes when given social proof that those who have previously been approached have complied with the request. This social proof can be provided via written information (e.g., Agerström et al. 2016) or a visual display. For example, store customers in France were more likely to donate money to build a school in the Congo when the experimenter making the request carried a transparent collection box that contained twelve coins versus one that contained no coins (Jacob et al. 2018). Similar results were found in a bakery setting when the request was made passively via a sign on the collection box located next to the register. Providing visual proof of previous donations also worked to increase donations of clothing in a door-to-door campaign.

When only a minority of people donate to charity, trending norms can be used to increase donations (Mortenson et al. 2017). Participants who were told that a minority of previous participants (48 percent) had donated to a charitable group in the past year, but that this represented a 17 percent increase, expected more participants to make a financial contribution in the coming years, and were more likely to donate their time to help the organization compared to those provided only with the minority norm or no normative information.

**Other Prosocial Behaviors.** Participants were more willing to sign a series of six online petitions related to international issues, such as climate change and whaling, when they believed that a large number of others (>1 million people) had already signed (Margetts et al. 2011). Additional research has shown that information about the absolute number of people who have engaged in a given behavior can be further enhanced by showing them that this number includes some of their close friends. For example, in a massive online experiment on Facebook, users who saw a message reporting how many people on Facebook voted that included profile pictures of their friends were more likely to self-report voting, to search for their polling place, and to *actually* vote (Bond et al. 2012). Furthermore, this increase in voting behavior then spread to close friends and close friends of close friends, showing that social norms interventions can have powerful ripple effects across social networks.

### 28.3 THE OPERATIONALIZATION OF SOCIAL NORMS

Experimental research has operationalized social norms along several lines of inquiry: descriptive and injunctive, prescriptive and proscriptive, reference group, dynamic and trending.

#### 28.3.1 Descriptive and Injunctive

Descriptive norms are perhaps the most common way in which social norms are operationalized to persuade compliance. In this form, the social norm is quantified, which stems from the idea that if a person knows a belief or behavior is common, it provides social proof that an action or thought is adaptive or beneficial. Operationalization is achieved via (a) a reference to the majority of others (not) doing the target behavior or holding the belief, (b) highlighting how frequently others (do not) do the target behavior, or (c) emphasizing in some manner that (not) doing the target behavior is common. For example, Agerström et al. (2016: 149) operationalized the descriptive norm with a majority percentage to encourage prosocial behavior by stating that “73% of [students] who were asked for a contribution have donated,” whereas Demarque et al. (2015: 169), to nudge proenvironmental behavior, used the statement “70% bought at least one ecological product.” Others have simply used a majority

descriptor: “[T]he majority of the people who used this soap helped the environment by turning off the tap while soaping hands” (Richetin et al. 2014: 7). The use of a percentage, frequency, average, or amount is a standard operationalization of a descriptive norm (see also Goldstein et al. 2008).

Experiments operationalize the descriptive norm by manipulating the physical and social environment, real or imagined, in which a target behavior occurs. For instance, to make salient a pro-litter or anti-litter descriptive norm, Cialdini et al. (1990) varied the amount of litter that participants were exposed to and observed if participants littered or not in the manipulated environment. Relatedly, Heywood and Murdock (2002) manipulated the descriptive norm, that is, the amount of litter within a park, using digitally altered images to measure participants’ responses to the perceived social norm.

The injunctive norm, as complementary to the descriptive norm, has a similar operationalization within the experimental research literature. Semantically, that tends to include the words or phrases: should, ought, accept, approve, endorse, expect, will, believe, support, certify, must, would. For example, “[S]hoppers in this store believe that re-using shopping bags is a useful way to help the environment” (de Groot et al. 2013: 1837); “[Most] students indicated that participants should be willing to stay for the full hour and complete extra surveys” (Jacobson et al. 2011: 440); “[Texans] expect you to clean, drain, dry [your boat]” (Wallen and Kyle 2018: 7).

### 28.3.2 *Aligned Descriptive and Injunctive*

Though distinct, the interplay between descriptive and injunctive norms can affect how norms influence behavior, and the two dimensions can have a greater impact together than either alone. The combination of descriptive and injunctive is also crucial to assure congruence between the normative information communicated – for example, a behavior is common and approved by others (Smith et al. 2012). Experimental research has operationalized descriptive and injunctive alignment to increase efficacy, prevent unintended behavior, and as a component of comparative feedback. In contrast, the misalignment of descriptive and injunctive norms may actually lead to spillover from one undesirable behavior to another (see also Chapter 29 in this volume)

In practice, to improve efficacy, an operationalized alignment of descriptive and injunctive norms follows individual formats. For example, in the context of conservation and proenvironmental behavior, Schultz et al. (2008: 8) used the combined message “Many of our hotel guests have expressed to us their approval of conserving energy. When given the opportunity, nearly 75% of hotel guests choose to reuse their towels each day” to significantly increase the target behavior, above and beyond individual norm messages. Similarly, Smith et al. (2012: 355) combined “82% of the student sample engaged in energy conservation” with “85% of the student sample approved of other students who engaged in energy conservation” to significant effect, as well.

The alignment of descriptive and injunctive norms has also been operationalized to serve as a stopgap to prevent unintended behavior. Cialdini (2003: 1) explains the need for alignment by suggesting that “within the statement ‘many people are doing this undesirable thing’ lurks the powerful and undercutting normative message ‘many people are doing this.’” That is, drawing attention to an undesirable behavior – littering, heavy drinking, unhealthy eating, etc. – as common only serves to reinforce its normativeness and cause an increase in the undesirable behavior. In cases where the desirable behavior is uncommon and an

undesirable one “regrettably frequent,” the addition of a supportive injunctive norm is beneficial (Blanton et al. 2001). For example, Schultz et al. (2007) found that households given normative feedback showing below-average energy usage (i.e., they consumed less energy compared to their neighbors) increased their energy consumption in subsequent weeks. To increase compliance with the well-intended descriptive norm, a supportive injunctive norm was added to doorhangers – a smiley-face for below-average use, which indicates approval, and a frowny-face communicating disapproval for above-average use. This operationalization, in addition to aligning descriptive and injunctive norms, is a form of personalized social norm feedback (Burchell et al. 2013; Schultz 1999; Schultz et al. 2014).

### 28.3.3 *Prescriptive and Proscriptive*

Another useful operationalization is to alter the prescriptive, positive (what should be done, e.g., please turn off the lights) or the proscriptive, negative (what should not be done; e.g., do not leave the lights on) framing of the social norm, typically the injunctive norm. Experimental evidence suggests, in general, that proscriptive or negative frames are more effective (Farrow et al. 2017). For example, in a prosocial health behavior context, Blanton et al. (2001) found that people were more concerned with avoiding negative social consequences of not using condoms than attaining positive social consequences of using them. In the context of proenvironmental behavior, Cialdini et al. (2006) found negative framing – “Don’t remove the petrified wood from the park” – to be more effective than positive “Leave petrified wood in the park.” A common explanation for these results is that proscriptions tend to attract more cognitive attention as people attend more readily to information that will help them avoid social disapproval (Bergquist and Nilsson 2019).

### 28.3.4 *Reference Groups*

The expectations of others are a primary mechanism that contributes to the persuasiveness of social norms. By operationalizing social norms to reference a social group relevant to or that influences the target audience, behavioral interventions leverage the phenomenon that people are more likely to adhere to the expectations of others like themselves. This approach to social norms has many operationalizations: subjective (Ajzen 1991), group or in-group (Smith and Louis 2008), peer (van de Bongardt et al. 2014), local or provincial (Agerström et al. 2016; Goldstein et al. 2008), and proximal (Borsari and Carey 2003). The purpose is to operationalize normative information in reference to a relevant social group (not) doing, (dis)approving, and/or punishing/rewarding the (un)desired behavior or belief. For instance, a subjective norm would reference “close friends,” “family members” (Ajzen 1991), local norms “fellow guests” or “guests stayed in this room” (Goldstein et al. 2008), and group norms “students at your university” (Smith and Louis 2008).

### 28.3.5 *Dynamic and Trending*

A recent development in social norm operationalization is the use of dynamic and trending norms. A dynamic social norm references information about how others’ behavior is changing over time. A recent application used the statement “[I]n the last 5 years, 30% of Americans have now started to make an effort to limit their meat consumption. That means that, in recent years, 3 in 10 people have changed their behavior and begun to eat

less meat than they otherwise would” and found that participants expressed significantly more interest in reducing meat consumption compared to a standard descriptive norm statement (Sparkman and Walton 2017: 3). Relatedly, a trending norm is used to emphasize that a behavior or belief that a minority of people engaged in previously is currently becoming more common. For example, Mortensen et al. (2017: 204) used “In July [previous year], 48% of the MTurk workers who took our surveys donated funds to the SEAA. This increased from 17% in July (2 years previous). Please help if you can” and found that it performed significantly better than a minority norm statement and control.

#### 28.4 COMMON NORM DELIVERY MECHANISMS

The delivery of social norms interventions primarily occurs via written and verbal communication modes and print, digital/technological, or confederate media. These include the use of signage (viz. flyers, billboards, etc.), vignettes, print ads, commercials, mailers, and billing statements, which can vary in their degree of active or passive interaction with participants. In addition to analog methods, digital mass and social media are also widespread delivery mechanisms. More direct and active forms of social norm delivery include face-to-face interaction, the use of confederates, and real-time feedback.

Many of the examples in Section 28.3 are representative of interventions that use signage or print delivery methods. For example, Schultz et al. (2007) printed their social norm messages on doorhangers, Cialdini et al. (2006) placed signage in the area in which the desired behavior was to be enacted, and de Groot et al. (2013) printed social norm messages on grocery bags used by participants. In the context of proenvironmental and conservation behavior, the efficacy of these and other delivery methods has been extensively reviewed and critiqued (see Abrahamse et al. 2005; Abrahamse and Steg 2013; Miller and Prentice 2016). In the context of health behavior, interventions use similar communication methods. Examples of these include many of the signs, brochures, and posters designed to reduce problematic drinking on college campuses (i.e., Perkins and Berkowitz 1986; Perkins 2003).

The development of digital and technological delivery mechanisms has been a boon for social norm interventions. For example, as health and medical fields tend to incorporate technology more readily (e.g., tele-medicine), digital delivery is becoming more common. Thus, remote interactions among providers, caregivers, and patients are becoming more common wherein impersonal computer-delivered interventions occur more often at a patient’s home, health care facilities, or other settings. In these contexts, though, the efficacy of social norm interventions has been mixed (see Rodriguez et al. 2015). Another interesting use of digital delivery and technology is for real- or relatively real-time feedback. For instance, in the age of social media networks, interventions can use Facebook, Instagram, and Snapchat as tools to enact social transmission of the norm. For example, Bond et al. (2012) used the Facebook News Feed to encourage voting with an intervention that provided local polling station information, an “I Voted” button, a counter of the number of other users who reported voting, and profile pictures of the participant’s friends who clicked the “I Voted” button. Another example of technological delivery is the use of smart meters, which provide real-time feedback of users’ energy and water consumption (e.g., Schultz et al. 2015).

A less common delivery mode is via confederates. With this method, experiments use individuals who seem to be participants but are actual research team members. For example, Cialdini et al. (1990) instructed confederates to litter or not as actual participants

witnessed their action and whose subsequent actions were observed by researchers as the dependent variable (see also Aronson and O'Leary 1983). Jacob et al. (2018) similarly used social proof, as it is a chief mechanism of compliance, to increase the salience of the social norm in real-time. In two experiments – one using a passive method, a transparent monetary donation collection box, and the other an active method, a face-to-face interaction with partially filled clothing donation bags – researchers found that providing real-time evidence that the desired target behavior is common is efficacious. In health behavior contexts, a variation called a remote confederate design has been used to persuade healthy eating. Here, as participants enter the research setting, they are told that prior participants did or did not engage in a certain level of a behavior, for example “ate X amount of food” (Robinson et al. 2014; see also Asch 1955). Examples of a confederate design being used in a real-world social norm intervention are those that employ active, face-to-face interactions using influencers or block leaders (see Abrahamse and Steg 2013). These delivery modes use a significant or influential other as an active deliverer of the social norm, which can provide descriptive and injunctive normative information, comparative feedback, and an appropriate reference group.

### 28.5 LARGE-SCALE IMPLEMENTATION EXEMPLARS

The relatively small-scale and cross-sectional examples of the previous sections beg the question: can the persuasion and compliance proffered by social norm interventions be scaled up (see review in Nguyen et al. 2019)? To that end, various large-scale initiatives have been implemented over the past two decades. Prominent examples are found in the domains of problematic drinking, various prosocial behaviors, and energy and water conservation.

Under the social norms approach framework, several large-scale problematic drinking interventions have been implemented across the USA. For example, Perkins et al. (2010) implemented a statewide social norms media marketing campaign over an eighteen-month period. Their findings suggest that a social norm intervention can reduce normative misperceptions, increase use of designated drivers, and decrease drink-driving among target audiences. Though many large-scale interventions to reduce alcohol consumption have noted success, others have not (Wechsler et al. 2003) and a meta-analysis by Foxcroft et al. (2015) cautions that several large-scale social norm interventions yield limited benefits for the prevention of alcohol misuse among target audiences.

In the context of prosocial behavior, large-scale interventions become more common. For example, Paluck (2009) implemented a countrywide social norm intervention in Rwanda using radio programs designed to successfully encourage more frequent prosocial behaviors, such as, intra- and intergroup cooperation and communicating with others about traumatic or sensitive issues. Similar mass-media methods are developed and implemented at large scales by organizations like the Population Media Center. From radio to today's interconnected world of social media, interventions have become broader in scope and reach. For instance, Bond et al. (2012) implemented a large-scale randomized controlled trial (RCT) of 61 million participants in the USA to encourage voting behavior. Their finding showed the social norm treatment to perform significantly better than one without. Similar large-scale persuasion and compliance interventions are likely to continue being developed, particularly with social media and big data facilitating implementation.

Modern challenges of environmental sustainability have ushered in large-scale social norm campaigns to conserve energy and water. A well-known example from Allcott (2011) examined the effect of a social norm intervention – a personalized comparative social norm feedback message – on 600,000 participant households receiving energy utilities from the company Opower (see also Ayres et al. 2012). Similar to Schultz et al. (2007), this study examined the effect that an aligned descriptive and injunctive norm can have on persuading households to reduce their energy usage or continue their below-average usage. Results suggest a small but significant effect of the social norm intervention. In another large-scale example, Jachimowicz et al. (2018) synthesized the results of 211 independent Opower RCTs in 27 states from 16 million participants to examine the effect of social norm feedback on energy conservation behavior. Their work observed second-order normative beliefs – that is, their belief that their neighbors or community approved of energy conservation – to have a significant effect on energy conservation behavior (see also Bicchieri 2017). In the context of water conservation, Ferraro et al. (2013) conducted a countywide intervention encompassing 100,000 water utility customers. Those results found that a social norm intervention can have a significant effect on behavior, particularly on high-use customers, but that the effectiveness of the intervention wanes over time.

Overall, these large-scale examples have implemented social norm interventions using similar conceptual and operational foundations, which, likewise, have similar underlying motivations and mechanisms. Yet, many of the above examples, in general, have scaled up their social norm interventions spatially (geographically) rather than temporally (over time), with results highlighting that the long-term robustness of social norm interventions varies.

## 28.6 UNDERLYING MOTIVATIONS AND MECHANISMS

Social norms interventions harness the power of people's tendency to conform to social norms. Conformity that is motivated by a desire to be accurate was labeled as informational social influence by Deutsch and Gerard (1955) and is most strongly connected to descriptive norms (i.e., norms of "is"), while conformity that is motivated by a desire to receive approval or to avoid disapproval is referred to as normative social influence and is most strongly connected to injunctive norms (i.e., norms of "ought"). However, in order to be motivating, social norms must be made salient and/or must correct a misperception about the prevalence of the behavior (descriptive norms) or the extent to which it is approved (injunctive norms). In addition, according to goal-framing theory, when a normative goal is activated it "creates feelings of obligation to act appropriately" (Chapter 29 in this volume). Furthermore, goal-framing theory proposes that the felt obligation to comply with norms increases when rule-following is widespread, and decreases when norms are disrespected, particularly by in-group members.

Several mechanisms have been proposed for how the need for accuracy and the need for approval work to persuade people to conform to social norms (e.g., Nolan et al. 2020). First, it is possible that people use social norms in a heuristic fashion, assuming that what most people do is both what is right (accurate) and what will earn them the approval of the group, or at least allow them to avoid disapproval. Evidence for the heuristic nature of conformity to social norms comes from research showing that participants are more likely to conform to a descriptive norm message when under cognitive load (Jacobson et al. 2011) and less likely to conform when they are encouraged to elaborate on the message (Kredentser et al. 2012) or are personally involved with the target behavior (Göckeritz et al. 2010).

Alternatively, social norms may change behavior by first changing individuals' normative beliefs. For example, in their meta-analysis of social norms marketing, Prestwich et al. (2016) found that normative beliefs mediate the relationship between social norms interventions and changes in problematic drinking. Interestingly, other research shows that social norms interventions can have a "cognitive ripple effect" whereby communicating descriptive normative information about one behavior and one referent group can spill over to change normative beliefs about both more proximal and more distal referents as well as related behaviors (Nolan 2011).

Most recently, research in social neuroscience has explored the neural mechanisms underlying conformity to the behavior of others. For example, individuals who showed greater activation of the nucleus accumbens (a reward center) when told that their judgments agreed with those of the group were more likely to make conforming judgments in a subsequent task (Nook and Zaki 2015). The posterior medial frontal cortex (pmFC) has also been implicated. Experimental research using transcranial magnetic stimulation (TMS) shows that individuals are less likely to conform when the pmFC has been downregulated via TMS (Klucharev et al. 2011). Other areas of the brain, such as the right lateral prefrontal cortex (rLPFC) are involved in regulating compliance to social norms when there is a clear threat of punishment for norm violations (Ruff et al. 2013).

### 28.7 BEST PRACTICES

As our review of the recent literature suggests, social norms interventions can be a relatively low-cost, adaptable, scalable, and highly effective way to change behavior. Here we offer four best practices for optimizing success:

- 1) **Use a credible source and data.** Like most persuasive messages, social norms communications will be most effective when the source of the message is perceived to be credible and the information presented is believable. Message sources that are perceived as having a vested interest or that convey false information may arouse doubt, suspicion, or even reactance in the target audience. For example, social norms messages promoting purchase of sustainable seafood failed in Norwegian supermarkets and backfired in German supermarkets (Richter et al. 2018). This could be because the supermarket was perceived as having a vested interest in the customer purchasing a more expensive seafood option (Germany) or because they became aware that the social norms messages did not convey accurate information about the local norm (signs conveying seven different percentages were rotated each day in the same supermarket).
- 2) **Know your audience.** Social norms interventions tend to be more effective at changing the behavior of those who engage in more of an undesired behavior (e.g., problem drinking) or less of a desired behavior (e.g., recycling). If possible, it is helpful to establish baseline behavior among a target audience so that high users/low adopters can be targeted. When it is not possible to target only those whose behavior needs to change then care should be taken in how descriptive norms are operationalized. For example, households that received normative feedback indicating that they were below-average energy consumers actually *increased* their daily energy consumption (Schultz et al. 2007). This is because people conform to social norms, regardless of whether the norm is helpful or harmful.
- 3) **Know your context.** Practitioners should be mindful of the context in which social norms messages are delivered. Social norms messages promoting desirable behaviors

can be undermined by contextual cues that suggest the opposite. For example, a sign suggesting that most people don't litter in an area that is heavily littered or that most students drink responsibly on a campus with plentiful alcohol outlets are likely to have little to no effect on behavior (e.g., Scribner et al. 2011). After all, normative beliefs are constructed from observed behavior (or traces of behavior) as well as explicit communications about how common or approved a behavior is.

- 4) **Keep it subtle.** Recall that social norms interventions work via a heuristic mechanism, providing social proof of what constitutes appropriate or desirable behavior. The success of the social norms approach, like other “wise” interventions, may be due, in part, to the fact that it is “minimally directive” (Walton and Wilson 2018). That is, normative messages can often appear to simply be providing information, thus minimizing feelings of coercion. Conversely, social norms, and injunctive norms in particular, that are communicated too forcefully (e.g., suggesting that peers think that one should eat healthier) may backfire if they are construed as an attempt to restrict freedom (Stok et al. 2016). The minimally directive nature of social norms interventions may also help to explain why they are underestimated, even by experts (Nolan et al. 2011).

## 28.8 FUTURE DIRECTIONS

Providing people with information about the behaviors and beliefs of others is an increasingly common strategy to gain compliance. As our review highlights, the effect that social norms interventions have on a suite of prosocial, health, and proenvironmental behaviors is robust. Yet, within these contexts, a needed future direction is to further substantiate the magnitude and persistence of compliance – behavior change – generated by social norm interventions, particularly as interventions attempt to scale up (Bingenheimer 2019). There is also a need to better understand the interplay between descriptive and injunctive norms and the extent to which one norm inherently communicates the other.

While these contexts covered in our review are not inclusive of all the social norm intervention contexts (e.g., regulatory or tax compliance), a positive trajectory for social norm research would include broadening the scope of behavioral domains, delivery modes, and scales of implementation. This would also facilitate researchers' ability to “give psychology away” and put the persuasive power of social norms to leverage compliance in the hands of people who can use it for positive social change (Nolan et al. 2011). Broadening the contexts in which social norms are applied would also alleviate and disabuse faulty commonsense psychology of persuasion assumptions that lead to erroneous or suboptimal intervention techniques. Future research should continue to investigate how best to transfer knowledge to those positioned to use it, so that they are armed with the best tools available.

A final consideration for the future of social norms and persuasion is to better understand and investigate interactions with policy. That is, how do policies impact social norm interventions in the real world, and how do preexisting or intended changes to social norms impact policy outcomes? These interactions will likely have tremendous impact on both the magnitude and the persistence of compliance that social norm interventions are able to generate. Better linking the academic research that predominates the social norm intervention domain to real-world scenarios and policy instruments via our research questions and experimental designs is an essential first step.

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