

A Focus Theory of Normative Conduct: Recycling the Concept of Norms to Reduce Littering in Public Places

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Past research has generated mixed support among social scientists for the utility of social norms in accounting for human behavior. We argue that norms do have a substantial impact on human action; however, the impact can only be properly recognized when researchers (a) separate 2 types of norms that at times act antagonistically in a situation—injunctive norms (what most others approve or disapprove) and descriptive norms (what most others do)—and (b) focus Ss' attention principally on the type of norm being studied. In 5 natural settings, focusing Ss on either the descriptive norms or the injunctive norms regarding littering caused the Ss' littering decisions to change only in accord with the dictates of the then more salient type of norm.

Although social norms have a long history within social psychology, support for the concept as a useful explanatory and predictive device is currently quite mixed. Some researchers have used and championed the concept as important to a proper understanding of human social behavior (e.g., Berkowitz, 1972; Fishbein & Ajzen, 1975; McKirnan, 1980; Pepitone, 1976; Sherif, 1936; Staub, 1972; Triandis, 1977). Others have seen little of value in it, arguing that the concept is vague and overly general, often contradictory, and ill-suited to empirical testing (e.g., Darley & Latané, 1970; Krebs, 1970; Krebs & Miller, 1985; Marini, 1984). In addition, a parallel controversy has developed within academic sociology where ethnomethodological and constructionist critics have faulted the dominant normative paradigm of that discipline (Garfinkel, 1967; Mehan & Wood, 1975).

The effect of these criticisms has been positive in pointing out problems that must be solved before one can have confidence in the utility of normative explanations. One such problem is definitional. Both in common parlance and academic usage, *norm* has more than one meaning (Shaffer, 1983). When considering normative influence on behavior, it is crucial to discriminate between the *is* (descriptive) and the *ought* (injunctive) meaning of social norms, because each refers to a separate source of human motivation (Deutsch & Gerard, 1955). The descriptive norm describes what is typical or *normal*. It is what most people do, and it motivates by providing evidence as to what will likely be effective and adaptive action: "If everyone is doing it, it must be a sensible thing to do." Cialdini (1988) has argued that such a presumption offers an information-process-

ing advantage and a decisional shortcut when one is choosing how to behave in a given situation. By simply registering what most others are doing there and by imitating their actions, one can usually choose efficiently and well. Researchers have repeatedly found that the perception of what most others are doing influences subjects to behave similarly, even when the behaviors are as morally neutral as choosing a consumer product (Venkatesan, 1966) or looking up at the sky (Milgram, Bickman, & Berkowitz, 1969). The injunctive meaning of norms refers to rules or beliefs as to what constitutes morally approved and disapproved conduct. In contrast to descriptive norms, which specify what is done, injunctive norms specify what ought to be done. That is, rather than simply informing one's actions, these norms enjoin it through the promise of social sanctions. Because what is approved is often what is typically done, it is easy to confuse these two meanings of norms. However, they are conceptually and motivationally distinct, and it is important for a proper understanding of normative influence to keep them separate, especially in situations where both are acting simultaneously.

A second source of confusion surrounding the concept of social norms is that, although they are said to characterize and guide behavior within a society, they should not be seen as uniformly in force at all times and in all situations. That is, norms should motivate behavior primarily when they are activated (i.e., made salient or otherwise focused on); thus, persons who are dispositionally or temporarily focused on normative considerations are most likely to act in norm-consistent ways (Berkowitz, 1972; Berkowitz & Daniels, 1964; Gruder, Romer, & Korth, 1978; Miller & Grush, 1986; Rutkowski, Gruder, & Romer, 1983; Schwartz & Fleishman, 1978). Of course, salience procedures should be effective for both descriptive and injunctive norms. In fact, in situations with clear-cut descriptive and injunctive norms, focusing individuals on *is* versus *ought* information should lead to behavior change that is consistent only with the now more salient type of norm.

One purpose of this research was to test this assertion as it

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applies to individuals' decisions to litter in public places. The choice of littering behavior for this study occurred for several reasons: (a) it provides a clearly observable action that is governed by a widely held injunctive norm (Bickman, 1972; Heberlein, 1971; Keep America Beautiful, Inc., 1968) and (b) it constitutes a growing social problem of considerable aesthetic, financial, and health-related costs to the culture. In California alone, for example, litter has increased by 24% over a recent span of 15 years, requiring \$100 million annually in cleanup costs (California Waste Management Board, 1988) and posing health threats to humans and wildlife through water pollution, fire hazards, rodent and insect infestations, highway accidents, and thousands of injuries suffered from discarded cans and broken bottles (Geller, Winett, & Everett, 1982). Thus, a better understanding of the normative factors moderating deliberate littering would be of both conceptual and practical value.

A common finding in the literature on littering is that the act is significantly more likely in a littered setting than in a clean setting (e.g., Finnie, 1973; Geller, Witmer, & Tusso, 1977; Heberlein, 1971; Krauss, Freedman, & Whitcup, 1978; Reiter & Samuel, 1980). Although this finding is congruent with the normative view that, in most settings, individuals tend to act in accordance with the clear behavioral norm there (Krauss et al., 1978), it is also consistent with other motivational accounts. For example, it might be argued that the tendency to litter more in a littered environment is due to simple imitation. Or, it might be argued that individuals are more likely to litter into a littered environment because they perceive that their litter will do less damage to the state of the environment than if it were clean.

Study 1

In our first experiment, subjects were given the opportunity to litter into either a previously clean or a fully littered environment after witnessing a confederate who either littered into the environment or walked through it. By varying the state of the environment (clean vs. littered), we sought to manipulate the perceived descriptive norm for littering in the situation. By manipulating whether the confederate dropped litter into the environment, we sought to affect the extent to which subjects were drawn to focus attention on the state of the environment and, consequently, on the relevant descriptive norm there.

We had two main predictions: First, we expected that subjects would be more likely to litter into an already littered environment than into a clean one. This expectation is consistent with the findings of prior research on littering (e.g., Krauss et al., 1978; Reiter & Samuel, 1980) and with the view that, in most settings, individuals are at least marginally aware of the existing norms and tend to act in accordance with them. Second, and more important, we expected the effect of the descriptive norm for littering in the situation (as indicated by the state of the environment) to be significantly enhanced when subjects' attention was drawn to the environment by a littering other. This expectation was predicated on considerable prior evidence (see Fiske & Taylor, 1984, for a review) indicating that substantial psychological impact can result from salience procedures involving simple shifts in the visual prominence of stimulus information, including normative information (Feldman, Higgins, Karlovac, & Ruble, 1976; Ferguson & Wells, 1980; Manis,

Dovalina, Avis, & Cardoze, 1980; Ruble & Feldman, 1976; Trope & Ginnosar, 1986). Specifically, then, we predicted an interaction such that subjects who saw the confederate litter into a fully littered environment would litter more than those who saw no such littering; whereas subjects who saw the confederate litter into a clean environment would litter less than those who saw no such littering.

Should we obtain this interaction, we would have good support for our focus model of normative conduct. It should be noted that the second component of this predicted interaction adds important conceptual weight to our test in that it is contrary to what would be anticipated by rival accounts. It is opposite to what would be expected if subjects were motivated simply by a greater reluctance to litter into a clean versus littered environment because of the greater relative damage to the respective environments that such littering would cause; by that account, subjects should be more likely to litter after observing littering in a clean environment because the environment will have already been damaged. Similarly, the second component of our predicted interaction pits the norm focus/salience interpretation against a straightforward imitation formulation, in which an unpunished litterer would be expected to increase the littering tendencies of observers in either type of environment. By postulating that a littering other will concentrate attention on evidence of what the majority of people have done, thereby highlighting normative considerations, only the (descriptive) norm focus/salience account predicts that observed littering will reduce subsequent littering in a clean environment.

Method

Subjects and Procedure

Norm salience. Subjects were 139 visitors to a university-affiliated hospital who were returning to their cars in an adjacent, multilevel parking garage during the daylight hours of 5 days within a period of 8 consecutive days. Approximately 5 s after emerging from an elevator, subjects encountered an experimental confederate of college age walking toward them. In half of the instances, the confederate appeared to be reading a large, 21.6 × 35.6 cm (8½ × 14 in.) handbill, which he or she dropped into the environment approximately 4.5 m (5 yd) before passing the subjects (high norm salience). A second confederate judged whether a subject had noticed the littering incident and, consequently, had deflected his or her attention at least momentarily to the parking garage floor. The great majority (93%) were judged to have done so, and only they were examined as to their subsequent littering behavior. In the other half of the instances, the confederate merely walked past the subject without carrying a handbill, so as to provide an equivalent degree of social contact (low norm salience).

Existing descriptive norm. For some of the subjects, the floor of the parking structure had been heavily littered by the experimenters with an assortment of handbills, candy wrappers, cigarette butts, and paper cups (existing pro-littering norm). For the remaining subjects, the area had been cleaned of all litter (existing anti-littering norm). The state of the environment (littered or clean) was alternated in 2-hr blocks, with the initial state determined randomly at the start of each day. On arriving at their cars, subjects encountered a large handbill that was tucked under the driver's side windshield wiper so as to partially obscure vision from the driver's seat. The handbill, identical to that dropped by the confederate, carried a stenciled message that read, "THIS IS AUTOMOTIVE SAFETY WEEK. PLEASE DRIVE CAREFULLY." A similar handbill had been placed on all other cars in the area as well.

Measure of littering. From a hidden vantage point, an experimenter noted the driver's sex, estimated age, and whether the driver littered the handbill. Littering was defined as depositing the handbill in the environment outside of the vehicle. Because there were no trash receptacles in the area, all subjects who failed to litter did so by taking and retaining the handbill inside their vehicles before driving away.

Analyses

Analyses in this and subsequent studies were conducted using the SPSS-X loglinear program, wherein tests for effects within dichotomous data are examined through the nesting of hierarchical models. This technique allows the testing of individual parameters by comparing the differences in the likelihood ratio chi-square of a pair of nested models. The differenced likelihood ratio is reported as a chi-square.

Results and Discussion

Gender and age differences in littering have sometimes been found in past research (see Geller et al., 1982, for a review). Therefore, before proceeding to tests of our theoretical hypotheses, we explored the data for gender or age differences. None were found; consequently, neither variable was included in subsequent analyses.

Figure 1 depicts the amount of littering that occurred in each of the four experimental conditions. Loglinear analysis of those data produced a set of results that conforms to that predicted by our norm focus model. First, as expected, there was a main effect for the existing descriptive norm, in that subjects littered more in a littered environment than in a clean environment (41% vs. 11%), $\chi^2(1, N = 139) = 17.06, p < .001$. Second, this effect occurred to a much greater extent under conditions of high norm salience, when subjects' attention was drawn to the existing descriptive norm for the environment. That is, the size of the existing descriptive-norm effect when the confederate littered (6% vs. 54%), $\chi^2(1, N = 55) = 16.52, p < .001$, was significantly greater than when the confederate did not litter (14% vs. 32%), $\chi^2(1, N = 84) = 3.99, p < .05$; the resultant interaction was tested as a planned comparison that proved highly reliable, $\chi^2(1, N = 139) = 20.87, p < .001$. The significant interaction provides confirmation of our hypothesis that procedures designed to shift attention within a setting to just one type of operative norm—in this case, the descriptive norm—will generate behavior change that is consistent only with that type of norm. Apparently, this is so even when the behavior in question is governed by an injunctive norm—in this case, the antilittering norm—that is strongly and widely held in the society (Bickman, 1972; Heberlein, 1971; Keep America Beautiful, Inc., 1968).

The pattern of results also supported the directional predictions made from our model. That is, under conditions of high (descriptive) norm salience, subjects littered more in a littered environment (54% vs. 32%) but less in a clean one (6% vs. 14%), although neither simple effect was statistically significant, $\chi^2 s = 2.76$ and 1.18 , respectively.

It is this latter finding, showing the least littering among subjects in the high norm salience/clean environment condition, that seems the most provocative of our study and, therefore, worthy of pursuit. After all, from an applied standpoint, we should be principally interested in strategies for litter abate-

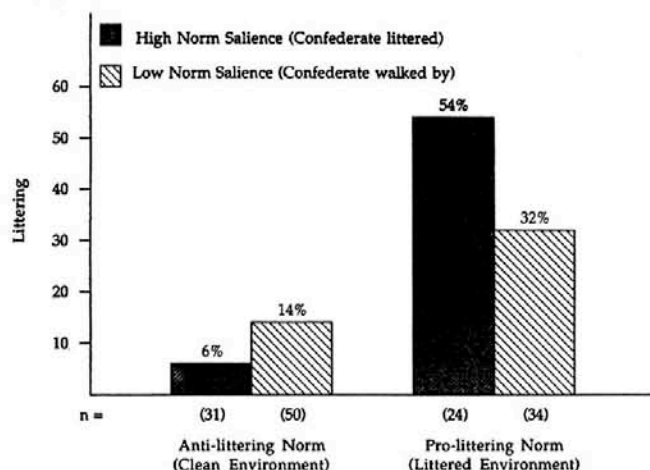


Figure 1. Percentages of subjects littering as a function of norm salience, and the direction of the descriptive norm regarding littering: Study 1.

ment. Moreover, the fact that the least littering occurred among subjects who observed prior littering into a clean environment is of considerable conceptual interest, as it supports norm focus predictions over those that spring from a straightforward imitation or environmental damage account. Good reason exists, however, for caution in drawing strong conceptual conclusions from this finding. Although part of a theoretically predicted, significant interaction, the drop in littering due to high norm salience in the clean environment was far from significant by itself. Of course, this lack of significance might well have occurred because of a floor effect, owing to the low level of littering (14%) in the low norm salience/clean environment condition; nonetheless, in the interest of enhanced statistical confidence, a replication seemed warranted.

Study 2

In planning to replicate and extend our initial study, we recognized a pair of testable implications that flowed from our earlier analysis. First, consistent with the outcomes of Study 1, a subject who witnessed evidence of littering in an otherwise clean environment should litter less as a result; however, the evidence would not have to take the form, as it did in Study 1, of observed littering action. That is, the consequence of such action—a single piece of litter lying in an otherwise clean environment—should have the same effect, because of its conspicuousness, by drawing attention to an environment whose descriptive norm (except for one aberrant litterer) was clearly antilitter. Second, as the amount of litter increases progressively in a setting, so should the likelihood that a subject will litter into it because, by definition, that litter will change the descriptive norm for the setting. The upshot of this pair of implications of our normative analysis is a nonintuitive prediction: The likelihood that an individual will litter into an environment bearing various pieces of perceptible, extant litter will be described by a checkmark-shaped function. Little littering should occur in a clean environment; still less should occur with a sole piece of litter in

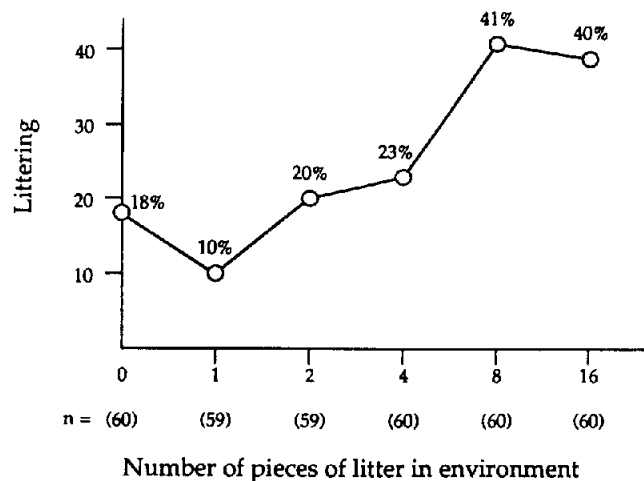


Figure 2. Percentages of subjects littering as a function of the number of pieces of litter in the environment: Study 2.

an otherwise clean environment, but progressively greater littering should occur as litter accumulates and the descriptive norm for the situation changes from antilitter to pro-litter.

Method

Subjects and Procedure

Subjects were 358 visitors to an amusement park in a large southwestern city during the evening hours of a pair of weekends in early summer. Immediately before turning a particular corner on a park walkway, subjects encountered a college-age experimental confederate passing out handbills that read "DON'T MISS TONIGHT'S SHOW," which referred to an entertainment program sponsored by the park on weekend nights. The confederate was instructed to give a handbill, at 1-min intervals, to the first passing adult walking alone or to one adult (the physically closest) in the first passing group. On turning the walkway corner, subjects, who were no longer visible to the confederate, faced a path of approximately 55 m (60 yd) from which no exit was possible except at its ends.

State of the environment. All litter had been removed from the path except for varying numbers of handbills of the sort that subjects had just been given by a confederate. Depending on the experimental condition, the path contained 0, 1, 2, 4, 8, or 16 handbills that were visible from the path entrance.

Measurement of littering. Because no litter receptacles were available on the path, a subject who deposited a handbill into the environment at any point along the path's length was considered a litterer. Subjects' littering behavior was covertly observed by a hidden, second experimental confederate, who also timed subjects' latency to litter (failure to litter was given a score of 100 s) and who removed any newly littered handbills from the path. On exiting the path, subjects turned a corner to find a pair of previously unseen litter receptacles; virtually all subjects who had not littered to that point dropped their handbills into one of the receptacles.

Results and Discussion

As in Study 1, we first examined the littering data for age and gender differences. No significant effects were obtained because of subject age. However, we did find a significant ten-

dency for men to litter more frequently than women (31% vs. 19%), $\chi^2(1, N = 358) = 7.41, p < .01$.

Figure 2 depicts the percentage of litterers in each of the experimental conditions of Study 2. The data pattern closely reflects the predicted checkmark shape of our normative analysis. The checkmark function hypothesis was tested in a two-step process. First, we constructed a planned comparison using trend weights that modeled the checkmark shape $(-2, -4, -1, 1, 2, 4)$. It proved significant, $\chi^2(1, N = 358) = 21.80, p < .01$. A second planned comparison was then performed to test whether a difference in littering occurred between the zero littering condition and the one-piece-of-environmental-litter condition. No significant difference was found, $\chi^2(1, N = 229) = 1.64, p < .20$. Comparable analyses were conducted on the latency to litter data shown in Figure 3. As with frequency to litter, the first contrast proved significant, $F(1, 352) = 20.65, p < .01$, whereas the second did not ($F < 1$). There was no significant interaction between any of these contrasts and gender.

Study 3

Even though the general form of the findings of Study 2 confirmed our predictions, one crucial feature of the results offered only ambiguous support. The hypothesized decline in littering from the clean environment condition to the one-piece-of-litter condition of the study, although present (18% vs. 10%), was not conventionally significant, allowing the possibility that it may have been the overall linearity of the checkmark pattern, rather than its elbow-like bend, that accounted for the significance of our general planned comparison. This ambiguity is especially frustrating because, as in Study 1, it appears that a floor effect in the data may have prevented a clear demonstration of reduced littering under the circumstances predicted by our formulation. It is difficult to generate significantly less littering than that of a clean environment when the clean environment generates so little littering itself.

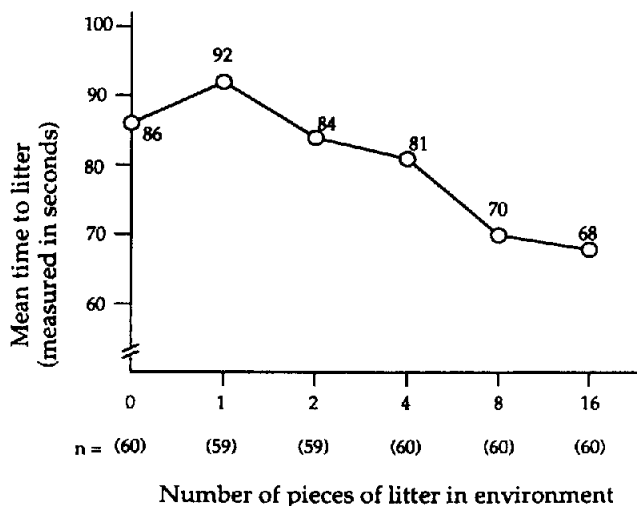


Figure 3. Mean latency to litter as a function of the number of pieces of litter in the environment: Study 2.

Consequently, we decided to conduct a conceptual replication of the theoretically relevant conditions of Study 2 that was designed to overcome the floor-effect problem. One way to deal with a floor effect of the sort that faced us is to increase the statistical power associated with our significance tests by increasing the number of subjects run in each condition. Thus, we used an experimental setting that would allow us to record the littering decisions of large numbers of subjects in a relatively short period of time. Additionally, in an attempt to sharpen the impact of our single-piece-of-litter manipulation, we chose a more conspicuous single piece of litter than we had used in Study 2.

Specifically, subjects were college dormitory residents who found a public service flier in their mailboxes. The environment in front of the mailboxes had been arranged so that it contained (a) no litter, (b) one piece of highly conspicuous litter (a hollowed-out, end piece of watermelon rind), or (c) a large array of various types of litter, including the watermelon rind. The dependent variable was subjects' tendencies to litter with the fliers. On the basis of our normative analysis and the pattern of results of Studies 1 and 2, we made a pair of predictions. First, we anticipated that subjects would litter more into a fully littered environment than into a clean one. Second, we expected that they would litter least into an otherwise clean environment that contained a single, attention-focusing piece of litter.

Method

Subjects

Subjects were 484 residents of a densely populated, high-rise women's dormitory on the campus of a large state university.

Procedure

The residents' mailboxes were located in rows at one corner of the dormitory's main lobby. The mailbox area was cut off visually from most of the lobby by a translucent partition. Once past the partition, subjects encountered an open area that fronted the mailboxes. During a 10 a.m. to 4 p.m. schoolday period, residents who opened their mailboxes to find a public service flier placed there as part of the experiment were counted as subjects, provided that no one else was simultaneously in the area getting her mail.

Depending on the experimental condition, subjects passing through the open area in front of their mailboxes encountered an environment that contained no litter or a single piece of litter (a hollowed-out, heel section of watermelon rind), or a large number of pieces of litter of various kinds (e.g., discarded fliers, cigarette butts, paper cups, candy wrappers, and soft drink cans), including the watermelon rind. A subject was considered to have littered if she deposited the flier anywhere in the environment (all waste containers had been removed) before exiting the lobby onto an elevator or through a set of doors leading to the campus. Of those subjects who littered, the great majority were observed by an unobtrusively placed experimenter to do so in the area in front of the mailboxes.

Results and Discussion

The percentages of littering in the three experimental conditions are presented in Figure 4. Their pattern accords well with predictions based on our normative perspective; indeed, the

expected quadratic trend was highly significant, $\chi^2(1, N = 484) = 23.12, p < .001$. Moreover, planned contrast tests of our two experimental predictions were supportive at conventional levels of significance. First, subjects were more likely to litter into a fully littered environment than into an unlittered one (26.7% vs. 10.7%), $\chi^2(1, N = 291) = 12.62, p < .001$. Second, subjects were less likely to litter into an environment when it contained a single, salient piece of litter than when it was unlittered (3.6% vs. 10.7%), $\chi^2(1, N = 335) = 6.79, p < .01$.

Theoretical Implications

To this point, we have reported data from three experiments in three different natural settings that seem to converge sufficiently to allow the generation of statements about the conceptual and pragmatic value of those data. On the conceptual side, it appears that norms can be influential in directing human action; however, in keeping with the spirit of prior criticism of normative explanations, it is necessary for norm theorists to be specific about both the type of norm (injunctive or descriptive) thought to be acting in a situation and about the conditions under which it is likely to act. Distinguishing between injunctive and descriptive norms is crucial, because both types can exist simultaneously in a setting and can have either congruent or contradictory implications for behavior. For example, in Study 1 we showed that through procedures designed to highlight differing descriptive norms, we could enhance or undermine compliance with the societywide injunctive norm against littering. Such a finding should not be interpreted to mean that descriptive norms are, in this instance or in general, more powerful than injunctive norms. Rather, it is the differential focusing of attention on one or the other sort of norm that is the key. Indeed, even within the same type of norm, it seems to be the case from our findings that focus of attention is an important component. In all three experiments, exposing subjects to a single piece of litter in an otherwise clean environment—a procedure designed to draw subjects' attention to what most people had done in the setting (i.e., the descriptive norm)—reduced littering there.

Practical Applications

Because littering is a social problem, it is appropriate to consider the potential practical applications of our data as well. The finding of greatest applied value appears to be that subjects in three different settings littered least after encountering a single piece of litter in an otherwise unlittered place. At first glance, such a result might seem to suggest that individuals seeking to retard the accumulation of litter in a particular environment might affix a single, prominent piece of litter there. On closer consideration, however, it becomes clear that such an approach would be inferior to beginning with a totally clean environment. Examination of Figures 2 and 3, showing the average likelihood and latency of littering among subjects in our amusement park study, illustrates the point. Subjects who encountered a perfectly clean environment tended not to litter there, resulting in long delays before anyone despoiled it with a handbill. Once a single handbill appeared in the setting, subjects were even less likely to litter, generating even longer laten-

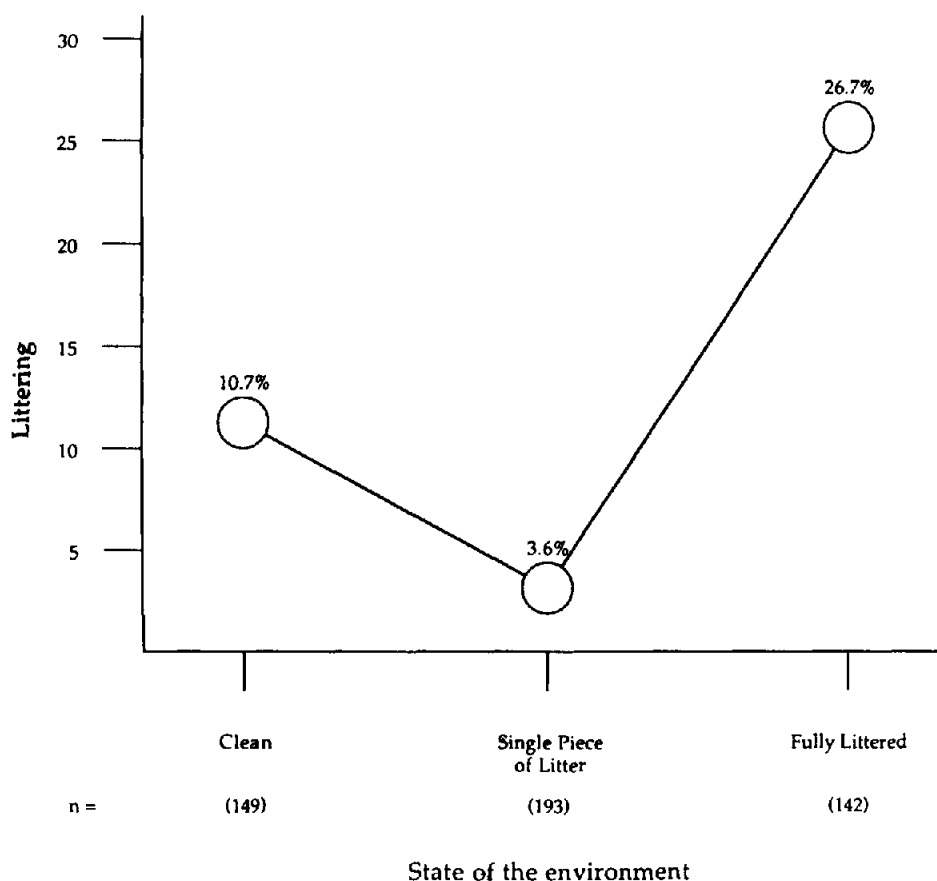


Figure 4. Percentages of subjects littering as a function of the amount of litter in the environment: Study 3.

cies before the second piece of litter appeared. At that point, with two pieces of litter visible in the environment, the descriptive norm began to change, and subjects' reluctance to litter into the setting began to deteriorate steadily, leading to shorter and shorter littering latencies with increasing accumulations of litter. Anyone wishing to preserve the state of a specific environment, then, should begin with a clean setting so as to delay for the greatest time the appearance of two pieces of litter there, because those two pieces of litter are likely to begin a slippery-slope effect that leads to a fully littered environment and to a fully realized perception that "everybody litters here." This logic further suggests that environments will best be able to retard littering if they are subjected to frequent and thorough litter pickups that return them to the optimal litter-free condition.

In considering the practical implications of our data, we recognized a weakness in our decision to focus subjects' attention on the descriptive rather than injunctive norm for littering: Procedures that focus subjects on the descriptive norm will only reduce littering when the environment is wholly or virtually unspoiled. Indeed, as was suggested in the data of Study 1, a descriptive norm focus when the environment is substantially littered will tend to increase littering there—hardly a desirable outcome for any but theory-testing purposes. A descriptive norm-focusing procedure, then, should only have socially beneficial effects in environments that do not need much help. The

circumstances are different, however, when the injunctive norm is made salient and when, consequently, individuals are focused on what people typically approve and disapprove rather than on what they typically do in a situation. By making the injunctive norm against littering more prominent, we should expect reduced littering even in a heavily littered environment.

A test of this hypothesis seemed instrumental to a pair of potentially valuable goals. First, on the practical level, it might establish norm focus procedures that could be used for litter abatement in a variety of environments. Second, on the conceptual level, it would generate evidence for or against our contention that focusing attention on either *is* or *ought* information will lead to behavior change that is consistent only with the now more salient type of norm; to this point in the research program, we had examined only half of that contention by concentrating just on descriptive norms.

Study 4

Recall that in Study 1, we argued that a confederate's act of dropping a flier into the environment would draw subjects' attention to that environment and to clear evidence (that we had manipulated) concerning whether people typically littered there. In this way, we sought to manipulate focus of attention to

the existing descriptive norm regarding littering in the setting. Presumably, if instead the environment were to give clear evidence of what is societally approved or disapproved there, the same attention-focusing device would function as an injunctive norm activator, because societally based approval or disapproval is the distinguishing characteristic of injunctive norms (Birnbaum & Sagarin, 1976; Marini, 1984; Sherif & Sherif, 1969).

The question of what clear approval/disapproval cue could be placed effectively in a natural environment to test our formulation was answered serendipitously while conducting Study 1. That study was run in a parking garage whose walls rose only halfway from the floor to the roof at each level. On one especially windy day, the litter we had distributed all around the garage floor in the fully littered environment condition was blown against an inside wall, as if someone had swept it there in a neat line. When a confederate dropped a handbill into that environment, virtually no subjects littered, whereas, on previous days the majority of subjects in that experimental condition had littered. In the course of puzzling over the discrepancy, we realized that the littering tendency of windy-day subjects may have declined when attention was called to the considerable litter in the environment because that litter gave the (mistaken) impression of having been swept—a clear disapproval cue.

Armed with this potential insight, we decided to conduct a partial replication and extension of Study 1, in which subjects saw a confederate who either did or did not drop a handbill into an environment that contained a large amount of either swept or unswept litter. In the case of unswept litter, we expected to replicate the data pattern of Study 1 for the comparable experimental cells; that is, we anticipated that by dropping a handbill, the confederate would focus subjects' attention on the environment and its evidence that people typically litter there, which should cause littering to increase. By dropping a handbill into a setting where prior litter had been swept (into piles), we anticipated that the confederate would once again focus subjects' attention on the environment. But in this instance, subjects would encounter a mixed message, composed of a descriptive norm cue (abundant litter) that would incline them toward littering and an injunctive norm cue (swept litter) that would incline them against it. Accordingly, we predicted that the difference in littering found in the unswept conditions would be reversed or at least reduced. Statistically, then, we expected an interaction between our two independent variables of whether a confederate dropped a handbill into the environment (high or low norm salience) and whether the environment contained swept or unswept litter (presence or absence of an injunctive norm cue). Furthermore, we expected a specific form for that interaction, such that any difference in littering found between the swept and unswept litter conditions under low-norm salience procedures would be significantly enhanced under high-norm salience procedures. That is, it was our belief that, under the low salience conditions, the normative forces present would be registered only minimally by subjects, resulting in only a minimal swept/unswept difference. However, under high salience conditions with normative issues now focal, the effect would be magnified.

Method

Subjects and Procedure

Norm salience. Subjects were 127 visitors to a university-affiliated hospital during the late afternoon and early evening hours of 6 days within a 13-day period. They underwent the same norm salience procedures as subjects in Study 1. That is, after emerging from a parking garage elevator, they encountered a college-age confederate who either dropped a distinctively colored handbill onto the floor in subjects' view or simply walked past without carrying a handbill.

Presence of an injunctive norm cue. For some subjects, the floor of the parking structure had been heavily littered by the experimenters, with the litter distributed across the environment in a fashion identical to that of Study 1. For the remaining subjects, all of this ambient litter had been swept into three large piles situated approximately 9 m (10 yd) apart in a line. In the high-norm salience/swept litter condition, the confederate dropped a handbill onto the floor approximately 1.5 m (5 ft) after passing the piles of litter. It was decided to have the confederate drop the handbill immediately in front, but in full view, of the litter piles to avoid an imitation explanation for our predicted effect. That is, if subjects had seen the confederate drop a handbill into one of the piles, then the predicted reduction in subjects' subsequent littering could be interpreted as simple modeling of a decision not to litter. The swept or unswept litter conditions were run in alternating 2-hr blocks, with the first run of the day determined randomly.

Measure of littering. Littering was assessed as it was in Study 1.

Results and Discussion

The influence of age and gender on littering rates was examined in an initial analysis; no significant effects occurred. Thus, these variables were not included in further analyses.

The percentage of subjects who littered in each of the experimental conditions of our design is displayed in Figure 5. Those percentages occurred in a pattern consistent with the form of the interaction that we were led to anticipate from our norm focus formulation. Using loglinear analyses, we tested that interaction with a planned comparison that contrasted the difference between the two low-norm salience cells (29% vs. 33%), $\chi^2(1, N = 68) = 0.18, ns$, against the difference between the two high-norm salience cells (18% vs. 45%), $\chi^2(1, N = 59) = 5.19, p < .02$. That interaction test proved significant, $\chi^2(1, N = 127) = 4.91, p < .03$.

Looking at the interaction pattern in another way, we can see that it is composed of two opposing trends—neither significant by itself, but significantly different in contrast to one another—both instigated by the same attention-focusing procedure. That is, when a dropped handbill drew attention to an unswept environment that, by its fully littered nature, gave evidence of a clear descriptive norm favoring littering there, littering tendencies rose (33% vs. 45%). However, when the same device drew attention to an environment that included a clearly conflicting injunctive norm cue as well, littering tendencies were reversed (29% vs. 18%). This pattern of effects accords well with each of the goals we set for Study 4. First, it supports our theoretical assertion that both descriptive and injunctive norms can elicit behavior change, with the prominence of one or the other type of norm accounting for the direction of the change. Second, it offers grounds for hope that certain kinds of undesirable action (littering, drinking and driving, tax cheating, highway speeding, etc.) can be restrained by the use of procedures that tempo-

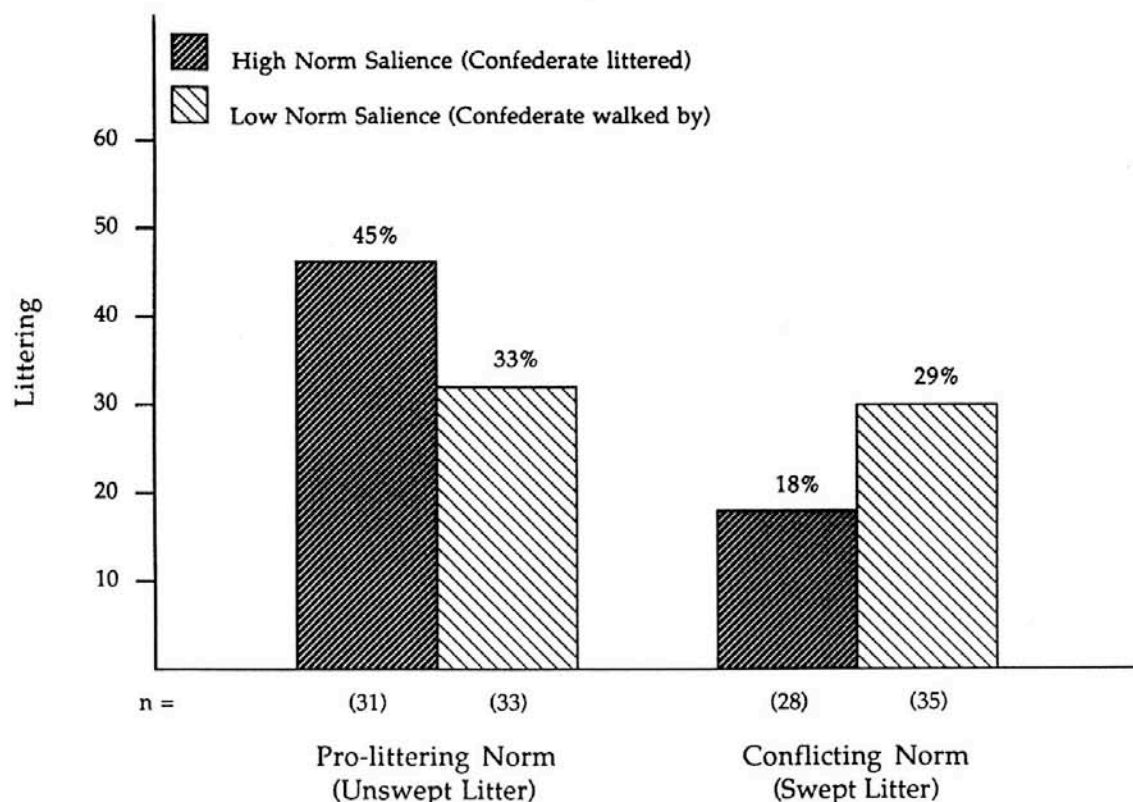


Figure 5. Percentages of subjects littering as a function of norm salience, and the configuration of litter in the environment: Study 4.

rarily focus individuals on injunctive norms in the settings where the action is most likely to take place.

Study 5

To this point in our research program, we have examined the validity of our norm focus formulation by using an attention-focusing procedure designed to make subjects mindful of a specific descriptive norm (Studies 1–3) or of conflicting descriptive and injunctive norms (Study 4) governing littering in a situation. The first three studies found resultant behavior changes wholly in line with the descriptive norm. The fourth study, which added evidence of a contradicting injunctive norm to the perception of the existing descriptive norm, broke the dominance of the descriptive norm over subjects' behavior; it actually produced a (nonsignificant) reduction of littering in an environment where a clear, pro-littering descriptive norm existed. It seemed to us that the logical next step in this progression was to conduct one additional study that removed any pro-littering descriptive norm focus and that concentrated subjects exclusively on the injunctive, antilittering norm. It was our expectation that such an uncontaminated, injunctive norm focus would then lead to a significant reduction in littering.

We saw another reason for conducting an additional experiment. In Studies 1 through 4, our norm-focusing manipulation involved the dropping of a noticeable piece of litter into an environment (either by a seen or an unseen individual) so as to

draw subjects' attention to the normative information present in that environment. There were several advantages of using that particular attention-focusing device, including the ability to make certain nonintuitive predictions that would not have flowed from rival theoretical accounts. We also recognized, however, that there would be certain drawbacks to using the same procedure yet again. First, the generality of our conceptual argument could be seen as untested beyond the range of our specific norm salience manipulation. More important, though, using littering to highlight the norms related to littering could create interpretational ambiguities. That is, the littering act itself is not neutral. It carries social meanings (depending on the situation in which it occurs) that are likely to generate various kinds of perceptions of the littering agent. It is possible that one or another of these perceptions could have acted to incline subjects to follow or reject the litterer's lead. For instance, although it is unlikely that someone who littered into a fully littered environment, as occurred in Study 4, would be seen positively by subjects, someone who littered into an environment of neatly swept litter might be seen in an especially negative light; it is possible that this more negative view may have accounted for the reduction in littering among such subjects in Study 4. Similarly, it is conceivable that subjects in Studies 1 through 3 may have had an unpleasant reaction to any litterer who would litter into a previously clean setting and, hence, may have failed to litter so as to distance themselves from such an unsavory person.

To avoid interpretations of this sort, which are based on subjects' perceptions of a litterer, it was necessary to design a focus shift manipulation that would draw subjects' attention to the injunctive norm against littering but would do so without the action of a littering agent. To this end, in Study 5 we relied on the device of cognitive priming, wherein one concept can be activated in an individual by focusing that individual's attention on a related concept (see Higgins & Bargh, 1987, for a review). Most, although not all (cf. Ratcliff & McKoon, 1988), explanations of priming effects incorporate the notion of spreading activation, which posits that similar concepts are linked together in memory within a network of nodes and that activation of one concept results in the spreading of the activation along the network to other related concepts (Anderson, 1976, 1983; Collins & Loftus, 1975; McClelland & Rumelhart, 1981). A key determinant of whether the presentation of one concept will cause activation of another is their semantic or conceptual proximity.

If, as research by Harvey and Enzle (1981) indicates, norms are concepts stored in a network format, then focusing subjects on a particular norm should activate other norms that are perceived to be semantically close to it. Moreover, the greater the semantic proximity, the stronger should be the resultant activation. To test this possibility, we first had a large number of norms rated as to their similarity to the antilittering norm. Next, on the basis of those ratings, we selected three norms that, although alike in rated normativeness, differed in their perceived similarity (conceptual proximity) to the antilittering norm. Finally, we included reference to one or another of the norms on handbills that we placed on car windshields in a local library parking lot. We expected that the handbills containing a message reminding subjects of the most distant norm from the antilittering norm (voting) would be littered relatively often but that as the handbill messages referred to norms rated closer (energy conservation) and closer (recycling) to the antilittering norm, fewer and fewer subjects would litter them. We also expected that handbills containing no normative message would be littered most of all, whereas handbills containing the target, antilittering message would be littered least.

Method

Preliminary Ratings Study

A list of 35 norms that had been generated by the researchers and their colleagues (e.g., "Driving at a safe speed," "Recycling," "Paying taxes," and "Not littering") were shown to 95 undergraduate psychology students during a class session at a large state university. The students were asked to indicate the extent to which they found each item on the list to be normative or nonnormative on 9-point scales, anchored by the labels *extremely normative* (1) and *not at all normative* (9); the scale midpoint was labeled *somewhat normative* (5). A definition of norms was provided at the top of the list that read "Norms are shared beliefs within a culture as to what constitutes socially appropriate conduct."

A second list was shown to a different class of 87 undergraduate psychology students at the same university during a meeting of their class. In addition to the definition of norms at the top of the list, this list contained comparisons of each of the selected norms with the norm against littering. Subjects were asked to "indicate how closely related you believe each of the pairs of norms are" on 9-point scales

anchored by the labels *identical* (1) and *unrelated* (9); the scale midpoint was labeled *somewhat close* (5). Examples of the comparison items are "The norm against littering and the norm for recycling" and "The norm against littering and the norm for returning library books on time."

Selection of the experimental norms. Means for both types of ratings were computed. The norm for not littering was rated as 4.25 on the 9-point normativeness scale. We then limited our choices for the additional experimental norms to those that had means for both male and female subjects within one scale point of 4.25 on rated normativeness. From this pool and on the basis of the similarity scale ratings, we selected three norms to be close to, moderately close to, and far from the norm against littering. Those three norms and their rated distances from the norm against littering were, respectively, the norm for recycling (3.57), the norm for turning off lights when last to leave a room (5.74), and the norm for voting (7.12).

Generating the normative messages. For each of the four experimental norms, a message was constructed that was suitable for presentation on a handbill. For the antilittering norm (identical to the target norm), it read, "April is Keep Arizona Beautiful Month. Please Do Not Litter." For the recycling norm (close to the target norm), it read, "April is Preserve Arizona's Natural Resources Month. Please Recycle." For the turning off lights norm (moderately close to the target norm), it read, "April is Conserve Arizona's Energy Month. Please Turn Off Unnecessary Lights." For the voting norm (far from the target norm), it read, "April is Arizona's Voter Awareness Month. Please Remember That Your Vote Counts." Finally, a control message was constructed that carried no injunctive norm; it read, "April is Arizona's Fine Art's Month. Please Visit Your Local Art Museum."

Subjects and Procedure

Participants were 133 female patrons and 126 male patrons of a municipal public library branch who parked their cars in the library lot. After leaving the library and returning to their cars, subjects found on the driver's side of the windshield a handbill that had been placed there by an experimenter. The handbill carried one of the five experimental messages designed to focus subjects differentially on the norm against littering. Drivers' decisions to litter the handbill were recorded by an unobtrusively placed observer. Typically, subjects who littered did so immediately after reading the handbill message and virtually always within 5 s of having done so. Consequently, we felt confident that the priming-like effects we anticipated were well within the range of priming-effect durations found by other investigators (see Higgins & Bargh, 1987, for a review). No efforts were made to change the moderate amount of naturally occurring litter on the library grounds and parking lot, which consisted of a variety of cigarette butts and an occasional paper cup or soft drink can.

Results and Discussion

In tests for gender effects within the data, only the main effect was significant, $\chi^2(1, N = 259) = 3.92, p < .05$, indicating that men littered more frequently than women (22% vs. 14%). To examine our hypothesis that as the conceptual distance between the antilittering norm and the handbill messages increased, littering rates would increase commensurately, we conducted a trend analysis. Only the predicted, linear trend (displayed in Figure 6) proved significant, $\chi^2(1, N = 259) = 5.48, p < .02$. Within the five experimental message means, only one comparison was significant, that between the target, antilittering norm (10%) and the no-norm control message (25%), $\chi^2(1, N = 118) = 4.87, p < .03$.

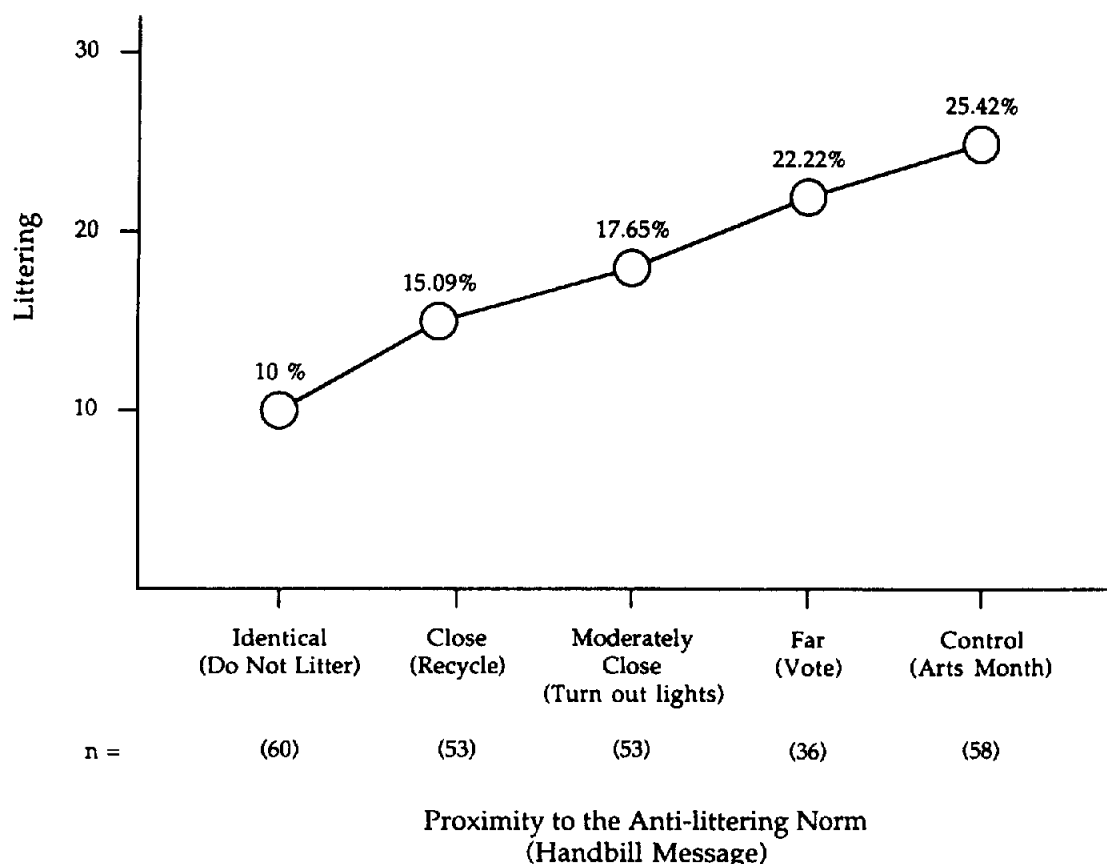


Figure 6. Percentages of subjects littering a handbill message as a function of its proximity to the injunctive norm against littering: Study 5.

As in Study 4, focusing subjects differentially on the injunctive norm against littering, this time through the processes of priming and spreading activation, led to littering rates corresponding to the predicted degree of injunctive norm focus. Thus, as expected, subjects in Study 5 (a) littered least after encountering a message focusing them directly on the antilittering norm, (b) littered progressively more frequently as the encountered (equally normative) messages directed focus progressively away from the antilittering norm, and (c) littered most when the encountered message was not normative.

General Discussion

We began this article by reporting the mixed support for the utility of social norms in accounting for much of human behavior; the claim that the concept, as traditionally conceived, possesses great explanatory power currently has strong proponents and equally strong opponents. From the perspective of the research we have presented, it would appear that both camps are right. Norms clearly do have a considerable impact on behavior, but the force and form of that impact can only be usefully understood through conceptual refinements that have not been traditionally or rigorously applied. That is, to predict properly the likelihood of norm-consistent action requires, first, that one specify the type of norm—descriptive or injunctive—said

to be operating. Second, one must take into account the various conditions that would incline individuals to focus attention on or away from the norm.

We have argued that our experimental manipulations worked to focus subjects on descriptive norms in Studies 1 through 3, on descriptive and injunctive norms in Study 4, and on injunctive norms in Study 5. Although the patterns of results in those studies are consistent with that argument, there is certainly room for alternative views. For example, it could be contended that, for subjects in Studies 1 through 3, seeing litter in an otherwise clean environment did not simply engage the descriptive norm against littering but engaged the injunctive norm as well. That is, a single piece of litter may have reminded subjects of societal objections to littering, and thus it may have been the activation of the injunctive norm that produced reduced littering in those studies. Alternative accounts of this sort for specific segments of our data, although not parsimonious in explaining the overall pattern of results, remain conceivable nonetheless.

That is so in part because our work was conducted in naturally occurring field settings where it was not possible to assess the precision and effectiveness of our norm-focus manipulations through the methods typically available to laboratory investigators. Detailed checks on the strength, specificity, and functional impact of a subject's attentional focus could not have

been practicably administered in our research situations. The consequent absence of such measures allows questions to arise as to whether our experimental manipulations worked as planned. Without the corroboration of these measures, one may have less confidence that the type of norm we intended to be functional actually mediated our findings. Fortunately, the effectiveness of injunctive social norms, about which there has been doubt in the scientific community (Darley & Latané, 1970; Garfinkel, 1967; Krebs, 1970; Krebs & Miller, 1985; Marini, 1984), has the clearest support in our data. That is, although it does seem possible to explain our data patterns without recourse to the well-established concept of descriptive norms, it does not seem plausible to do so without recourse to the more disputed and interesting concept of injunctive social norms, especially in Studies 4 and 5. Nonetheless, future research should be done in ways that allow direct assessments of the mediating processes presumed to be active in the present work.

Throughout this research program, we have exposed subjects to acute situational conditions designed to focus them on or away from particular norms. We recognize, however, that enduring cultural and dispositional conditions may also influence one's normative focus. This distinction among cultural, situational, and dispositional factors strikes us as important in the realm of norms. In thinking about the concept, we have been led to speculate that norms function at the cultural/societal level, the situational level, and the individual level. Although they may not have developed such a tripartite conceptualization, norm theorists have recognized normative influences at each of these levels. At the first (cultural/societal) level, the influence of global norms on behavior within a culture or social group has often been noted (Birnbaum & Sagarin, 1976; Paicheler, 1976; Pepitone, 1976; Triandis, 1977; Triandis, Marín, Lisansky, & Betancourt, 1984). Indeed, many definitions of norms refer exclusively to this level. For example, Ross (1973) considered norms to be "cultural rules that guide behavior within a society" (p. 105). At the second level, others have recognized that cultural norms may not apply equally to all situations (Peterson, 1982). Consequently, definitions of norms often include an explicit situational component. For example, Popenoe (1983) defined social norms as expectations "of how people are supposed to act, think, or feel in specific situations" (p. 598). Finally, other social scientists have evidence that norms exist at the individual level as well. Most notable in this regard is the groundbreaking work of Schwartz (1973, 1977) on the concept of personal norms.

Our view is that what is normative (i.e., most often done or approved or both) in a society, in a setting, and within a person will, in each case, have demonstrable impact on action, but that the impact will be differential depending on whether the actor is focused on norms of the culture, the situation, or the self. Research is planned to test the implications of this conception.

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