Research Reports

Automatic Influences of Priming on Prosocial Behavior

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Abstract

Literature on the automaticity of social behavior indicates that, in some circumstances, priming a concept automatically activates related behavioral schemas. Previous research studies have used priming techniques to increase willingness to help, but most of these have simply measured intention to engage in prosocial behavior rather than real helping behavior. Two different studies investigated the effect of priming the concept of prosocial behavior on real helping behavior. After priming prosociality through a scrambled sentences test, participants were shown to increase their donation rate after a direct request coming from an experimenter's confederate (Study 1) and to spontaneously help to a greater extent a girl whose books had fallen on the floor (Study 2). The implications of this automatic behavior priming effect are discussed within the theoretical framework of the automatic effect of social perception on prosocial behavior.

Keywords: prosocial behavior, automaticity, priming, helping, situational features

Social psychologists have conducted a vast amount of research over the past three decades demonstrating that social knowledge is automatically activated in people's memory while they are exploring the social environment. This means that while people are seeing and listening to what is happening around them, social knowledge that corresponds to perceived stimuli may be spontaneously and immediately activated in memory without people's awareness or intention. Researchers have also shown that automatically activated information may then shape and guide people's impressions, judgments, feelings, and intentions (Bargh & Chartrand, 1999; Fazio, Sanbonmatsu, Powell, & Kardes, 1986; Ferguson & Bargh, 2004). For example, Zajonc, Pietromonaco, and Bargh (1982) randomly exposed participants to words that were either related to hostility or were neutral. The words were presented outside of the subjects' conscious awareness. In a second task, all subjects were asked to read an ambiguous story about a man and rate him on various measures. Those subjects that were subliminally exposed to words related to hostility rated the man more negatively than those subjects in the control condition.

It is now being demonstrated that such automatic affect need not be limited to social perception. Indeed, over the past two decades, researchers have documented that attitude and other affective reactions can be produced automatically by the simple occurrence of pertinent objects and events. Fazio, Sanbonmatsu, Powell, and Kardes (1986) verified that subjects were capable of evaluating adjectives faster when adjectives were preceded by attitude objects of analogous valence, compared with when adjectives were preceded by attitude objects of opposed valence (e.g., a negative word preceded by a positive word). Nevertheless, it has also now been verified that

stereotypes become active automatically in the mere presence of physical features associated with the stereotyped group (Carlston & Skowronski, 1994; Devine, 1989; Perdue & Gurtman, 1990).

Researchers in social psychology have also proposed that social behavior is often triggered automatically in the mere presence of relevant situational features; this behavior is unmediated by conscious perceptual or judgmental processes (Bargh, Chen, & Burrows, 1996). Their argument builds on previous theory and research suggesting that behavioral representations can be automatically activated in memory during perception and, once activated, can guide actual behavior. For instance, just as a stereotype presumably becomes associated with a group after repeated group-stereotype pairings, a behavior that a person repeatedly performs in a particular situation or in response to a particular other person might become associated in memory with the features of that situation or person. In both cases, the mere perception of the group member or situation might automatically activate the respective stereotype or behavior (Ferguson & Bargh, 2004).

Several lines of research supporting this hypothesis have been discussed in the literature (for a review, see Dijksterhuis & Bargh, 2001). For example, the principle of ideomotor action is longstanding in this domain of research, dating back to James (1890) and earlier (Carpenter, 1874): simply thinking about an action is sufficient to drive the appearance of that movement unless the person consciously interferes to avoid it (Wegner, 2002). Knuf, Aschersleben, and Prinz (2001) gave the example of people watching sports from their armchairs: they often move their limbs and tense their muscles in response to watching the sport. Knuf et al. (2001) created a paradigm for testing ideomotor actions. They concluded that perceptual induction is possible from viewing the ball and that intentional induction can occur from both viewing the ball and previously learned actions. James's perspective is similar to the modern notions of accessibility, namely that the activation of a mental representation increases its accessibility and the likelihood that this representation will enter a subsequent process or behavior (Tversky & Kahneman, 1973; Wyer & Srull, 1989). The increasing accessibility — or likelihood of use of a concept — increases the likelihood of an associated behavioral response. Cognitions about a type of behavior may come from both internal and external sources, as shown in the studies in which participants' actions resulted from perceiving the same type of behavior enacted by others (Knuf et al., 2001; Thomaschke, 2012).

Another reason for postulating an automatic link between the representations used to perceive behavior and those used to engage in that behavior comes from literature on imitation. Much contemporary work on human mimicry has suggested that the perception of certain actions can lead to the performance of those actions. There is abundant evidence that people exhibit imitative behavior from an early age, mimicking everything from facial expressions to the speech of their conversation partners (Bock, 1986; Smeets & Brenner, 1995). The chameleon effect refers to the automatic imitation of the postures, mannerisms, facial expressions, and other behaviors of one's interaction partners. This phenomenon seems to indicate a direct-link mechanism between perception and behavior (Chartrand & Bargh, 1999).

The behavioral schema model (Carver, Ganellen, Froming, & Chambers, 1983) proposed that the origin of automatic behavior can be explained via schemas. When one observes behavior, an interpretive schema is activated that makes the schema more accessible. If the schema contains action plans, they also become more accessible. Action plans are information specifying when and how a specific behavior should be elicited.

Perhaps the best known studies about the influence of perception on behavioral tendencies are those by Bargh, Chen, and Burrows (1996). In their first experiment, participants were primed with rudeness or politeness via a scrambled sentence test. The participants were then instructed to go find the experimenter in another room upon

completion of the test. On the way to meet the experimenter, they all found him engaged in a conversation with another supposed participant (in actuality, a confederate). The amount of time it took for the participant to interrupt was taken as the dependent variable. Results showed that significantly more of the rude-primed group interrupted the experimenter compared to the polite-primed group.

In the second experiment, participants were again subjected to a Scrambled Sentence Test. This time, they were either primed for old age or neutral. Upon leaving the experiment, the time it took participants to walk down the hall was measured by a confederate. A significant effect was found wherein participants primed with old age took significantly longer to walk the length of corridor.

Priming Helping Behavior

As discussed above, a growing subset of findings has indicated that subtle priming techniques can cause behavior without conscious regulation. Priming has been shown to impact a wide range of behaviors, from intellectual performance (Dijksterhuis & van Knippenberg, 1998) to conformity (Epley & Gilovich, 1999) and walking speed (Bargh, Chen, & Burrows, 1996).

It seems reasonable to expect that even prosocial concepts and consequently prosocial behavioral schemas may be activated through priming. In this field, only a few studies have shown an impact of situational priming on helping behavior. Garcia, Weaver, Moskowitz, and Darley (2002) merged the priming paradigm with the bystander apathy literature and demonstrated that merely priming participants with a social situation in which either a single individual or a group of people was involved leads to more or less helping behavior on a subsequent, completely unrelated task. Nelson and Norton (2005) used priming techniques to modify commitment to and engagement in future helping behavior.

However, these studies are problematic because of the operationalization of helping behavior used in the experimental setting. In fact, Garcia et al.'s (2002) measure of helping behavior was the willingness to contribute an annual donation (Study 1 and Study 2) and to agree to participate in a second experiment (Study 3). The authors assessed participants' behavioral intentions rather than actual behavior. There still may be a disconnection between willingness to help and giving help. Nelson and Norton (2005) operationalized helping by asking participants to evaluate their behaviors in some hypothetical situations (Study 1a and Study 1b)[1] and by asking them to participate in a second experiment (Study 2). In Study 3, Nelson and Norton (2005) showed that initial commitment impacted volunteering behavior up three months after initial exposure (future behavior). In Pichon, Boccato, and Saroglou's study (2007), the aim was to provide evidence of the nonconscious influences of religion on prosociality. Nevertheless, these authors have essentially tested the impact of subliminal priming of religious concepts on prosocial behavioral intentions, not on actual behavior. One of the exceptions is a study by Macrae and Johnston (1998) that used a measure of actual helping behavior. The authors, in fact, recorded how many leaking pens participants picked up.

In sum, we believe that these studies have highlighted that even prosocial concepts, and consequently prosocial behavioral schemas, may be activated through priming. In fact, through smart and elegant experiments, the impact of situational priming has also been verified on helping behavior. On the other hand, we believe that further efforts should be made to better operationalize the dependent variable helping behavior with a real helping behavior and not with a mere intention to help, since intended helping does not always result in actual helping (Scaffidi Abbate, Isgró, Wicklund, & Boca, 2006).

Overview of the Studies

The aim of the present line of study was to test the effects of priming the concept of prosocial behavior on helping behavior. The purpose of our research was twofold. First, we explored the effect of priming on helping behavior assessing a real helping behavior, unlike most of the research on automaticity in the study of prosocial psychology that essentially tested the impact of priming on helping intentions (Garcia et al., 2002; Pichon et al., 2007; Scaffidi Abbate & Ruggieri, 2008). In addition, unlike most research on priming helping behavior, in which participants were given the explicit goal of engaging in the behavior that was affected by the priming manipulation (Garcia et al., 2002; Greitemeyer, 2009; Nelson & Norton, 2005; Pichon et al., 2007), in the second study we measured a spontaneous behavior triggered by priming.

Two studies we have described used a behavioral measure. In Study 1, participants were primed with words of prosociality (or not) with Srull and Wyer's (1979) Scrambled Sentence Test and were given explicit conscious instructions to offer some money for a hypothetical student association. The act of making the donation and the amount of money given by the participants were recorded and used as the dependent variable. In Study 2, the same priming procedure was employed, but the study involved a different assessment of helping behavior. Participants were not given any explicit instructions, and the dependent behavioral measure was taken at times when participants believed they were not currently engaged in an experimental task at all. At the end of the experiment, when the participant was already out of the lab, a confederate who was walking along the corridor accidentally dropped some books she was carrying. We recorded whether participants helped the girl or simply walked away. Thus, this time, spontaneous helping behavior was used as the dependent variable.

Study 1

Method

Participants and Design — A total of 110 undergraduate students (57 women, 53 men; mean age 24 years), who were not studying psychology, participated in the experiment as partial fulfillment of course requirements. Students were randomly assigned to one of the two priming conditions (Prime: help vs. control).

Stimulus Material — The priming manipulation took the form of a Scrambled Sentence Test (Srull & Wyer, 1979), presented to participants as a test of language ability. The test consisted of a series of trials. In each trial, the participant must build a sentence that makes sense using a set of words arranged in random order. Some of the built phrases refer to the same concept. The reconstruction of the sentences, in reality, is just an expedient to ensure that the participant mentally develops content related to a certain construct without realizing that the researcher is interested in this construct. Several studies have shown that participants in the experiments were unaware of the interest of researchers to construct critical issues and actually believed that it was a test of verbal ability (Chartrand & Bargh, 1996). The sentences proposed in the task are related to the construct to be activated. By virtue of this relationship, mental access to the meaning of the phrases or words in question may cause an increase in the rate of activation of the recurring concept in the mind of the participant. The mnestic activation of concepts thus obtained should persist for a certain amount of time, temporarily increasing the probability that they will also be used in different contexts for tasks other than those in which they have been activated (Bargh, 1994; Higgins & King, 1981). In our case, the phrases and words were related to the construct of "helping".

For each of the 30 items, the participants were instructed to use four or five words presented on a computer in a scrambled order to build a sentence as quickly as possible. Two versions of a scrambled sentence were arranged

to prime prosociality in the experimental condition and no particular construct in the neutral condition. In the experimental condition, 15 of the 30 items contained words related to prosociality (i.e., "to give," "aid," "to lend"); in the neutral condition, words unrelated to prosociality were used (i.e., "piano," "to read," "landscape").[2]

Procedure — Participants took part in the experiment one at a time. They were informed that the purpose of the study was to investigate language proficiency and that, to fulfill this purpose, they had to complete a Scrambled Sentence Test. After participants completed the test, they were approached by a confederate asking them if they were willing to offer some money to a student association that provides books for disadvantaged undergraduates. Afterward, the confederate left the room. To avoid self-presentation bias, participants could leave money in an envelope on the table next to the computer screen.[3]

Afterward, the experimenter caught up with the participant near the elevator and asked participants whether they thought the Scrambled Sentence Test might have affected them in any way, and if they knew that the task contained help-related words. No participant noted the relationship between help-related words and the request for money, and no participant believed that the words had any impact on his or her own behavior.

Behavioral Measure — As a dependent variable, we considered a dichotomous variable (whether or not participants offered money) and the amount of money offered.

Results and Discussion

We analyzed the frequency of participants giving a contribution as a function of priming condition, predicting that people would be more likely to help when primed with prosocial stimuli than when primed with neutral stimuli. As shown in Figure 1, considerably more subjects in the priming condition (84.3% of the 51 participants) gave a donation than subjects in the neutral condition did (62.7% of the 58 participants), χ^2 (1, 109) = 3.95, $p < .05$.
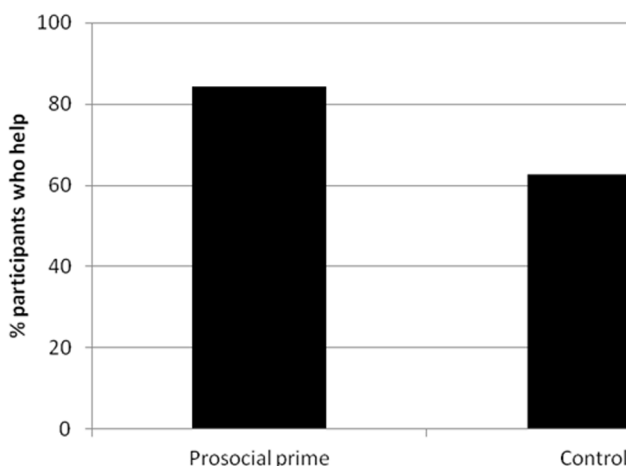

Figure 1. Participants who helped in control and prosocial prime conditions.

As mentioned above, we also recorded the amount of money offered under the two different conditions. Given that 30 subjects did not give any money, we considered this event a zero-money offer instead of eliminating these subjects from analysis. A one-way ANOVA showed that the difference was not significant: Participants exposed

to the prosocial priming condition ($M_{pros.\ prime}$ = .87, SD = .891) did not give more than subjects primed with neutral stimuli ($M_{neut.\ prime}$ = .62, SD = .697), F(1, 109) = 2.76, *p = ns*).

The fact that the participants were all students who might have a similar budget range leads us to think that it is not the budget that affects the willingness to donate but most likely the kind of priming influenced the willingness to donate. In fact, the results indicated that participants were more likely to give when primed with help-related words. At the same time, we found no significant difference in the amount of money that people gave. Perhaps the spontaneous helping behavior primed was making or not making a donation (yes/no), while how much money donated to the association is not an automatic behavior. How much people give depends on several factors taken into reasonable consideration by the subjects at the time. For example, someone may give more (or less) on the basis of how much change the giver has in his or her wallet. In addition, a giver might consider already planned activities such as getting coffee after the experiment.

It must be noted that in this study, participants were given the explicit conscious instruction to engage in the behavior that was shown to be affected by the priming manipulation.[4] This feature is common to several studies that analyzed the effect of priming participants with help-related words on helping behavior (Garcia et al., 2002; Greitemeyer, 2009; Nelson & Norton, 2005; Pichon et al., 2007). In all these studies aimed at demonstrating the perception-behavior link, the target behavior was explicitly requested. The participants were explicitly invited to help, and their acceptance or refusal of the invitation was shown to be affected by the manipulation of priming.[5] But to understand more deeply the extent to which participants' responses are activated automatically by the mere presence of relevant features in the environment by the same mechanism that produces automatic trait attribution and automatic attitude activation (Blair & Banaji, 1996; Fazio, Jackson, Dunton, & Williams, 1995), participants should not receive any explicit conscious instructions about what to do. Thus, as Bargh et al. (1996) suggested, the behavior expected upon priming should emerge spontaneously. For this reason, we designed a second experiment to test the impact of prosocial priming on helping behavior produced spontaneously in the absence of an explicit request. As suggested by Bargh et al. (1996), in the next study, participants were not given any explicit conscious instructions to act in line with any of the trait dimensions being primed or measured.

Study 2

Method

Participants and Design — A total of 67 undergraduate students (37 women, 30 men; mean age 23.5 years) who were not studying psychology participated in the experiment to fulfill course requirements. Students were randomly assigned to one of four between-participant conditions. The experiment had a 2 (Prime: help or control) x 2 (Cognitive load: yes or not) between-subjects design.

Stimulus Material and Procedure — The priming manipulation was basically a replication of Study 1 and took the form of a Scrambled Sentence Test (Srull & Wyer, 1979). Participants arrived at the laboratory individually and were randomly assigned to one of the experimental conditions. Up until the completion of the scrambled sentence test, the procedure was identical to Study 1 (i.e., helping prime vs. control prime). In addition, half of the participants of both conditions were instructed to memorize as many sentences as possible of the test. They were also told that once the task was completed, they should go to another lab room and write down all the sentences they could remember. We will call this condition the cognitive load condition. Participants in the no-load (control) condition were not instructed to memorize any sentences.

When each participant indicated that he or she had completed the Scrambled Sentence Test, the experimenter explained that the participant could leave the room and move to the exit or to the other lab room, depending on the experimental condition. The experimenter then opened the laboratory door so that the participant could leave. As the participant walked along the corridor, he or she encountered a girl (a confederate) who accidentally stumbled and dropped all the books she was carrying.[6] The dependent variable was whether participants helped the girl to pick up the books.

A series of pilot trials was carried out to identify that experimental situation so that the priming effect on prosocial behavior could be evidenced. In particular, we did not want to plug participants into a serious emergency situation, a situation that probably would have pushed most of the participants to intervene. When the urge to help is pervasive, the effect of the prime would be difficult to grasp because of a sort of ceiling effect. In fact, when an emergency situation occurs and people are alone, they were likely to help anyhow (Fischer et al., 2011). At the same time, a very weak need for help would have been equally useless to our purpose: priming would not boost a behavior that is not required by the situation.

We finally settled on a situation in which we had found that about 25-30% of people decided to intervene. This proportion seemed appropriate to detect any increase due to the effect of priming.

Upon completion of the experiment, participants were debriefed, thanked, and dismissed. No participant noticed the connection between the Scrambled Sentence Test and the stumbling girl.

Behavioral Measure — We had two dependent measures. The first was whether participants helped the girl or simply walked down the corridor without picking up any books. The second was the number of sentences correctly recalled (which could only be measured in the cognitive load condition).

Cognitive load would drain attention resources needed for a rational decision about whether to help, but would be ineffective if the link between situation appraisal and helping behavior is automatic. In light of this assumption, it could be interesting to observe whether cognitive load decreased helping behavior. Furthermore, it is essential to control for whether actual helping behavior interfered with sentences recalled.

Results and Discussion

To evaluate our prediction, we analyzed the participants' helping rates as a function of priming condition and cognitive load. Figure 2 reports the frequency of participants who helped the girls to pick up books she had dropped on the floor in all four conditions.

Considerably more subjects in the priming condition (51.5% of 33 participants) stopped and helped collect books than subjects in the neutral priming condition (18.2% of 33 participants), χ^2 (1, 66) = 8.08, p = .004. As expected, considering only subjects in the prosociality prime condition, results did not reveal any significant difference due to cognitive load, χ^2 (1, 33) = .029, p = ns. These effects clearly demonstrate the impact of priming manipulation on helping behavior.

When a girl carrying a large pile of books dropped them on the floor, participants' helping rate was significantly higher in the prime than in the control condition. In addition, no main effect emerged for cognitive load manipulation. People rehearsing in their mind the sentences of the scrambled sentences test (cognitive load condition), walking
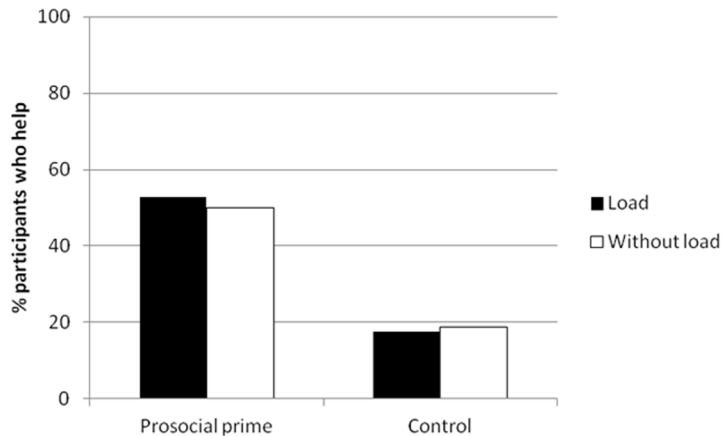
Figure 2. Percentage of participants who helped in all four conditions.

to what they believed was a second experiment room, had the same probability of stopping and helping the girl as the participants who believed their task was over (no cognitive load condition).

As mentioned above, it is crucial to observe the effect of helping behavior on memory tasks. A 2 (Prime: help or control) X 2 (Behavior: helping or not helping) between-subjects analysis of variance (ANOVA) was carried out on the number of correctly recalled sentences. This analysis revealed a main effect of prime type $F (1, 30) = 5.93$, $p < .05$. Sentences with helping-related words (M $_{help\ prime}$ = 3.35, SD = 1.06) were generally recalled better than sentences with neutral meaning (M $_{neut.\ prime}$ = 1.47, SD = .88). A significant prime x behavior interaction also appeared, $F(1, 30) = 4.88$, $p < .05$. Sentences with helping-related words were recalled better, particularly by those who helped. In contrast, when participants were primed with neutral words, an insignificant effect of helping behavior on recall emerged, $F(1, 30) = .49$, $p = ns$. When the participants in the cognitive load condition exited the laboratory, they were all trying to keep in mind the phrases they had seen. When they met the girl in need of help, some of them gave that help and others did not. Perhaps the helping behavior reminded the participants that they were behaving like the sentences they had seen earlier and, in turn, made it easier to retrieve the sentences and to report them successfully.

General Discussion

Helping behavior has been often conceptualized by sociologists and economists as the result of a complex evaluation where individuals accurately weigh pros and cons before taking action (Axelrod, 1984; Lehmann & Keller, 2006; Nowak, 2006; Olson, 1965; Taylor, 2002). Psychological models have described a wide number of steps between discovering that someone is in need and actual helping. The decision model of bystander intervention created by Latané and Darley (1970) proposed that whether or not a person helps depends on the results of a series of sequential decisions. There clearly are circumstances in which helping is the result of an accurate weighing of possible outcomes, such as when some people plan to make a donation to charity. A donor may evaluate whether or not make the donation, how much money to donate, and choose to whom the money is given. In this decision-making process, aspects such as tax deductions and the acquisition or maintenance of a positive public image are probably considered. On the contrary, interviews offered by people who actually helped in critical situations often reported an immediate, almost involuntary, urge to intervene. They often talked about an urge to

intervene. For instance, in September 2011, a motorcycle driver crashed and was trapped beneath a burning car. Good Samaritans jumped into action and were likely the sole reason the young man survived. As Anvar Suyundikov said after he pulled the motorcyclist out from under the burning car, "I don't not think I am a hero, I was just in the right moment to help him"[7] . But also in less critical and less dangerous circumstances people often help instantly, without thinking (i.e. through a more automatic behavior).

This puzzle can be disentangled by postulating the existence of a dual route between cognition and helping behavior. Similar to the theories of other models (Gawronski & Bodenhausen, 2006; Greenwald & Banaji, 1995; Strack & Deutsch, 2004; Wilson, Lindsey, & Schooler, 2000), we believe helping can be the result either of a planned action or of an activation of a strong link between cognitions activated by environmental features and behavior. If helping behavior can be automatically triggered by the mere presence of relevant situational features, the probability of helping may be experimentally increased through a priming paradigm. Activating the opportune set of cognitions in someone's mind should influence the person to be more sensitive to requests for help coming from the social environment. Activated cognitions become more accessible, more ready to play a role in a subsequent cognitive process. Only a handful of studies have shown an impact of situational priming on helping behavior. Nevertheless, it seems reasonable to expect that even prosocial concepts and consequently prosocial behavioral schemas may be activated through priming.

The studies presented in this paper provide evidence of the existence of a direct link between cognition and helping, a link that can be experimentally activated by priming. In fact, the main finding of the present studies is that social behavior can be triggered automatically. Similar to previous experiments on automaticity in social behavior (Brown, Croizet, Bohner, Fournet, & Payne, 2003; Dijksterhuis & Bargh, 2001), a prosocial prime was introduced in experimental conditions, and its effect was evaluated on actual helping behavior. Across two studies, the activation of help-related concepts produced an increase in helping rates in a subsequent apparently unrelated situation. In particular, the exposure to help-related primes affected the participants' willingness to give to a student association upon a direct request from someone (Study 1), and increased the percentage of participants who stopped and spontaneously helped the girl pick up books (Study 2).

It is also important to stress two aspects of these studies. First, the helping behavior observed here is an actual behavior and not simply behavioral intentions, unlike a large number of studies on automaticity. It is important to stress this difference since intended helping does not always result in actual helping (Scaffidi Abbate, Isgró, Wicklund, & Boca, 2006). Certainly, a wider use of behavioral measures of pro-social behavior would make data collection more complicated. Nevertheless, this is a necessary option for attaining a better understanding of helping.

Second, the helping behavior measure we considered was not only the response to a direct request (Study 1), but also spontaneous prosocial behavior in the absence of an explicitly given instruction (Study 2). As Bargh et al. (1996) posited, the hypothesis is that social behavior should be capable of automatic activation by the mere presence of features of the current environment as is the case of social perceptions and attitudes. By "mere presence of environmental features," we mean that the activation of the behavioral tendency and response must be shown to be preconscious, that is, not dependent on the person's current conscious intentions (see Bargh, 1989). In most of the research regarding the impact of priming on helping behavior, participants were given the explicit, conscious goal to engage in the behavior that was shown to be affected by the priming manipulation (Garcia et al., 2002; Greitemeyer, 2009; Nelson & Norton, 2005; Pichon et al., 2007). Thus, in attempting to

overcome these problems, in the present studies, we observed spontaneous helping behavior triggered by the situation.

Limitations and Future Research

Questions worthy of future investigation arise from these studies. As all the research conducted in the laboratory the findings reported in this paper could have limited generalizability. Although the situations that have been created may seem to be situations that we may encounter in everyday life, further research testing the effects of priming on prosocial behavior in field experiments would be desirable.

A matter to be explored more deeply is which types of activated knowledge mediate effects on behavior. Assuming that the mere perception of a stimulus activates trait, context, goal, affective and behavioral information (Ferguson & Bargh, 2004), the types of knowledge that mediate the variety of effects shown in this research remain unidentified. Questions now arise regarding the boundaries between automatic and conscious behavior and the possibility of overriding automatic behaviors or suppressing them (see Macrae & Johnston, 1998).

Bargh, Schwader, Hailey, Dyer, and Boothby (2012) described a set of possible moderators of the effect of activation of behavioral schemas. One among them could be particularly interesting in the field of automatic prosocial behavior: self-focused attention (Duval & Wicklund, 1972). They explained that increased self-focus, that is, increased attention to the self, is known to activate action tendencies (Carver & Scheier, 2000; Duval & Wicklund, 1972; Gibbons, 1990). Increased attention to the self can override external influences (priming) because it makes schemas for norms, behavioral standards, and important goals more salient and accessible. On the other hand, it is true that in the arena of prosocial action, self-awareness should move a person to help more, to manifest altruism, a thesis that has some empirical support (Duval, Duval, & Neely, 1979; Gibbons & Wicklund, 1982; Scaffidi Abbate & Ruggieri, 2008, 2011).

Therefore, future research into spontaneous helping behavior might investigate this phenomenon outside the laboratory to assess to what extent situational features can prime prosocial behaviors that occur in real life.

Notes

1) The critical measure of planned helping behavior was, "An elderly woman gets on a crowded subway on which you are riding. Although all the seats are taken and many people are standing, you have a seat. Relative to the average Princeton student how likely is it that you would offer your seat to this woman?" (1: much less likely, 8: same, 15: much more likely).

2) To select the experimental material, a pre-test was conducted with 50 participants from the same population (they did not take part in the main experiment) who were asked to say instantly three words related to the concept of prosociality. The 15 words most frequently used were employed.

3) Several tests were conducted before the experiment was carried out so that the entire procedure was standardized in a way that would not influence the participants' responses. To do this, the confederate (who was the same person for the entire duration of the experiment) was trained to say the same identical phrase as he approached each participant. The words used by the confederate were: "My name is Lucia and I am a volunteer for a Students Charity Association. One of our aims is to provide books for disadvantaged undergraduates. I ask you if you want to contribute offering some money. Thank you."

4) This criticism has been pointed out by Bargh et al. (1996): The authors noted that in Berkowitz and LePage's (1967) and Carver et al.'s (1983) studies, for example, participants were instructed to take the role of teacher and give shocks to a learner. Accordingly, these studies showed that intentional behavior could be affected in intensity or duration by aggression-priming manipulation (the presence of guns or prior exposure to synonyms of aggression), but they did not show the behavior was produced automatically in the absence of that explicitly given intention.

5) As mentioned above, in studies by Macrae and Johnston (1998), the dependent measure in this experiment was whether or not participants helped the experimenter pick up any of the dropped items without any explicit instructions.

6) As in Study 1, various tests were conducted before the experiment was carried out to make sure that the entire procedure is nearly identical for all the participants. Thus, the confederate who accidentally stumbled and dropped all the books she was carrying was the same girl for the entire duration of the experiment. In so far as possible, the girl always dropped the books in the same way and always at a distance of five meters after passing the participant.

7) Source of information:
http://www.abc4.com/content/news/state/story/Heroes-save-a-young-Logan-man-trapped-beneath-a/VheH0jS0L0iEdgpHDT0xFg.cspx

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