

# Acts of Benevolence: A Limited-Resource Account of Compliance with Charitable Requests

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Across six field and lab experiments, we found that impaired self-control fosters compliance with charitable requests. Experiments 1 and 2 showed that self-regulatory resource depletion was induced when participants yielded to the initial requests of a foot-in-the-door script aimed at procuring volunteer behavior. Experiment 3 demonstrated that self-regulatory resource depletion mediated the effects of yielding to the initial requests of a foot-in-the-door technique on compliance with a charitable target request. Experiments 4–6 demonstrated that weak temporary and chronic self-control ability fostered compliance through reliance on compliance-promoting heuristics (i.e., reciprocity, liking, and consistency).

Compliance with charitable requests has fascinated scholars for over 40 years. What makes consumers sign a petition, donate money, or volunteer to invest time and effort supporting a cause on behalf of a nonprofit organization that they may have never heard of before? Previous research asking this question has examined such factors as the type of motivations related to endorsing a charity (e.g., Clary et al. 1994; Stukas, Snyder, and Clary 2008), individual differences in altruism and volunteering orientation (Mowen and Sujan 2005), and the role of incentives used to promote charitable contributions (Briers, Pandelaere, and Warlop 2007; Burger and Caldwell 2003). In this article we examine the internal process that takes place when consum-

ers are approached by a fundraiser or social marketer who asks for a contribution to a charitable cause. These professionals typically do not bluntly ask for a donation of time or money but will embed the target request in a scripted social influence technique, which is a tactic specifically designed to increase the odds of yielding to a charitable request (Abrahams and Bell 1994; Wang, Brownstein, and Katzev 1989). The current study tests how and why social influence techniques promote charitable behavior.

Decades of studies on social influence confirm that consumers are induced to comply with a charitable request at much higher rates when approached with a social influence technique than when the request is made without a scripted warm-up period (Burger 1999; Cialdini and Goldstein 2004). This intriguing fact suggests that there is something special about the preliminary stage of social influence techniques that makes consumers especially willing to invest money, time, or effort—oftentimes without expecting a return on their investment. In six experiments, we hypothesized and found that a key reason that the preliminary stage of a scripted influence tactic is so effective is that it induces a state of self-regulatory resource depletion. This weakened volitional state then enhances compliance with a subsequent request, but only when the request contains heuristics aimed at promoting compliance (e.g., reciprocity)—which nearly all scripted influence techniques naturally embed in the process.

The variety of social influence techniques and their potential to change people's behavior is remarkable. The foot-in-the-door effect began the scholastic examination of scripted

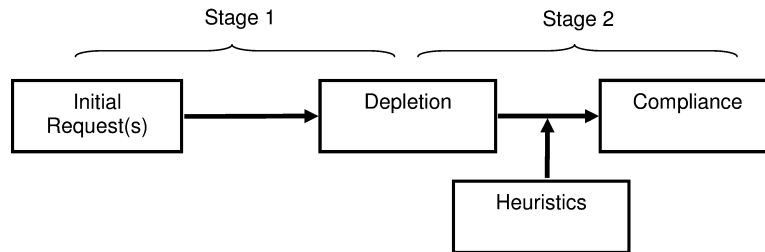
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*John Deighton served as editor and Jennifer Aaker served as associate editor for this article.*

*Electronically published October 9, 2008*

**FIGURE 1**  
 A SELF-REGULATORY RESOURCE DEPLETION ACCOUNT OF THE IMPACT OF CHARITABLE SEQUENTIAL REQUEST TECHNIQUES



social influence techniques (Freedman and Fraser 1966), followed by the door-in-the-face technique (Cialdini et al. 1975), the lowball technique (Burger and Petty 1981), and most recently the disrupt-then-reframe technique (Davis and Knowles 1999; Fennis, Das, and Pruyn 2004, 2006; Kardes et al. 2007). These techniques have been shown to elicit such diverse acts of benevolence as endorsing a campaign to promote traffic safety (Freedman and Fraser 1966), working as a volunteer on a canned food drive for homeless shelters (Burger and Caldwell 2003), acting as a chaperone for a group of juvenile delinquents (Cialdini et al. 1975), signing a petition supporting an increase in tuition fees (Burger and Petty 1981; Fennis et al. 2004), and financially supporting a center for disabled children (Davis and Knowles 1999).

But what is it that makes consumers say yes to such consequential requests? In recent years, research on compliance-gaining procedures increasingly has emphasized processes that are subtle, indirect, and outside conscious awareness of the target consumer. According to Cialdini and others (e.g., Cialdini 1993; Cialdini and Goldstein 2004), the effectiveness of influence techniques hinges on the notion of consumer automaticity or “mindlessness” (Langer 1992). In these states, consumers are prone to employ simple heuristics that increase compliance rates, such as the principles of consistency (i.e., propensity to behave congruently across situations), reciprocity (i.e., felt obligation to return a favor), and liking (Cialdini 1993).

Stepping back once again, one may wonder what produces this state of mindlessness within the influence context. Although automaticity has been proffered as an explanation, an examination of the literature reveals that automaticity has not been measured directly but rather inferred from indirect manipulations (e.g., Langer, Blank, and Chanowitz 1978; Pollock, Smith, and Knowles 1998).

We argue that one of the origins of this mindlessness can be found in a characteristic that almost all successful techniques have in common: multiple decision moments or sequential requests (Fern, Monroe, and Avila 1986). That is, the target consumer has to yield to one or several initial request(s), answer probing questions, or make choices before the request to donate or volunteer is presented. For example, the foot-in-the door procedure begins with a small

request, followed by a larger request. Similarly, the door-in-the-face technique starts with a relatively large request, followed by a smaller request. Finally, the lowball technique starts with an offer or request, presented in a particularly attractive light, which is subsequently modified to the actual (less attractive) target request after initial acceptance. We propose that these sequential request techniques trigger one underlying psychological mechanism that accounts for their impact on compliance: self-regulation failure brought about by *self-regulatory resource depletion* (Baumeister et al. 1998; Vohs and Faber 2007; Vohs and Heatherton 2000; for a review, see Baumeister, Vohs, and Tice 2007). We argue that consciously attending and responding to the initial requests of an influence attempt drains the self’s finite regulatory resources. The active self becomes weakened, a state that paves the way for subsequent acquiescence due to a lack of regulatory resources available to deny the target request.

We developed a two-stage model to explain the effectiveness of charitable sequential request techniques (fig. 1). In the first stage, the initial request or series of requests is presented to the consumer. Yielding to the initial request(s) results in self-regulatory resource depletion. A state of low self-regulatory resources produces the mindlessness typically observed in studies on social influence. In the second stage, self-regulatory resource depletion fosters the use of heuristics that encourage yielding to the target request, thereby resulting in acts of charitable giving and volunteering. In the following sections both stages of the model are elaborated.

### STAGE 1: RESPONDING TO INITIAL REQUESTS PRODUCES SELF-REGULATORY RESOURCE DEPLETION

Similar to the functioning of a muscle, the limited-resource model of self-control (Baumeister et al. 1998; Vohs, Baumeister, and Tice 2008) posits that any behavior that involves deliberate and regulated responses by the self draws on a limited resource, akin to strength or energy. Any act of volition is posited to have a detrimental impact on any subsequent act of volition due to the fact that they must

share the same limited (and dwindling) resource. In a state of self-regulatory resource depletion, the controlled, purposeful self fails to function effectively, which renders people vulnerable to untoward impulses, habit, routine, and automatic processes (Baumeister and Vohs 2007; Vohs, Baumeister, and Ciarocco 2005)—all key indicators of mindlessness.

To the extent that responding to the initial requests of compliance-gaining procedures aimed at promoting charitable behavior involves deliberate, conscious, and controlled self-regulation, it is plausible that situations that promote these types of initial responses would induce self-regulatory resource depletion. Germane to this idea is work on the disrupt-then-reframe (DTR) technique. In this tactic, an offer is presented to the target, followed by a subtle oddity or twist in the sales script (such as stating the price of the offer in pennies before stating it in dollars), and finally a persuasive phrase that concludes the script (Fennis et al. 2004, 2006; Kardes et al. 2007). Results from one study (Fennis et al. 2004, study 1) suggested that participants exposed to the DTR technique showed signs of self-regulatory resource depletion in that they were unable to generate as many counterarguments in response to the sales script as did participants who had not been exposed to the DTR technique (see Wheeler, Briñol, and Hermann [2007] for counterargumentation as a consequence of active self-regulation).

Meta-analytic comparisons spanning 3 decades of research on the most prominent sequential request procedure, the foot-in-the-door (FITD) technique, revealed that its effectiveness depends on specific attributes of the initial request to which people are exposed (Burger 1999). Specifically, the FITD tactic is most effective when the initial request is highly involving. A closer look at FITD studies suggests that these highly involving initial requests entail either (a) active self-presentation or (b) demanding cognitive operations, or both—processes that are known to elicit self-regulatory resource depletion (Schmeichel, Vohs, and Baumeister 2003; Vohs et al. 2005).

Manipulations of high involvement in the initial request phase often require effortful impression management. Tybout (1978, experiment 1) asked participants to simply sign a petition (low involvement) or asked them to explain to the influence agent their personal reasons of why they signed (high involvement), an act that likely induces self-presentation motives. Pliner et al. (1974) examined compliance with a request to donate money to the Cancer Society. The donation request was preceded either by asking participants to wear a daffodil pin or by asking them to wear the pin and persuade family members to wear the pin as well. Presumably, the act of persuading others to wear the pin engaged impression management processes since the target must present him/herself in a favorable and socially desirable light to family members regarding reasons to wear the pin. Compliance with the donation request was higher after people had agreed to approach family members to wear the pin than if they simply had been asked to wear the pin themselves. Recent work on the role of self-regulation has

underscored the taxing nature of self-presentation processes (Vohs et al. 2005). This work demonstrated that active (but not habitual) forms of self-presentation led to impaired self-regulation later due to depleted self-regulatory resources.

Additionally, involvement has been manipulated in terms of the extent to which the initial request required a cognitively demanding task. In the FITD paradigm, for instance, Fish and Kaplan (1974) asked participants to either listen to a lecture (low involvement) or craft and write an essay (high involvement) before the target request was posed. Seligman, Bush, and Kirsch (1976) asked for responses to five initial questions regarding “people’s reaction to the energy crisis” versus 20, 30, or 45 questions (responding to more questions equaled higher involvement). In these studies, compliance with the target request (agreeing to complete an extensive survey) was higher when the initial request demanded more intellectual processing than when it was less intellectually demanding.

From a limited self-regulatory resource perspective, these results make sense. Engaging in high-level intellectual processing (e.g., reading comprehension, crafting a logical argument) is known to tax self-regulatory resources (Schmeichel et al. 2003; Smit, Eling, and Coenen 2004); hence, if the initial request phase of an influence technique is intellectually challenging, it likely leads to a more depleted state than if the initial request is less intellectually challenging. However, an initial request phase would be predicted to be relatively unsuccessful if it entailed answering only a few simple question(s). Rather, the key seems to be the extent to which the responses require effortful guidance by the self. In their work, Schmeichel et al. (2003) found that self-regulatory resource depletion impaired performance on cognitively demanding tasks but left performance on simpler mental tasks that use well-learned and standard procedures unaffected.

In sum, there is evidence in support of the hypothesis laid out in stage 1 of our model: yielding to the initial request in a multiple request influence procedure to gain compliance with a charitable request affects self-regulatory resource availability (hypothesis 1) because yielding involves either effortful self-presentation or intellectual demands. Stage 2 of the model proposes that this state of self-regulatory resource depletion drives the mindlessness so often observed in compliance contexts and thereby ups the odds that the target individual will yield to a charitable request.

## STAGE 2: DEPLETION-INDUCED MINDLESSNESS AFFECTS COMPLIANCE THROUGH RELIANCE ON HEURISTICS

Given support for the notion that yielding to the initial request phase of a sequential request technique fosters regulatory resource depletion, it becomes imperative to argue that this state of depletion subsequently affects compliance with a charitable request. Research has begun to test the link between self-regulation failure and persuasion. This work suggests that a state of self-regulatory resource de-

pletion weakens resistance to temptations and (unwanted) influence attempts (Baumeister 2002). For example, Burkley (2008) showed that resistance to persuasion attempts requires active self-control and therefore depletes regulatory resource stores, particularly when the persuasive message is highly involving.

Another test of the impact of self-regulatory resource depletion on resistance to persuasion was presented by Wheeler et al. (2007). In their study, participants were asked to resist a counterattitudinal persuasive message. Participants whose self-regulatory resources had been depleted by a previous and unrelated self-regulation task showed less resistance than nondepleted participants, especially when message arguments were weak. Similar to the findings by Fennis et al. (2004, experiment 1), these participants generated fewer counterarguments in response to the persuasive message than did nondepleted participants. In line with dual process frameworks (Chaiken and Trope 1999), the key seemed to be that self-regulatory resource depletion hindered the processing of message-relevant information as evidenced by reduced sensitivity to argument quality.

Extending the dual process logic, Wheeler et al.'s (2007) findings point to heuristic processing as a consequence of self-regulation failure. That is, if self-regulatory resource depletion reduces systematic or central-route processing, then it should enhance the weight of heuristic processing in consumer judgment and decision making. The notion that a state of mindlessness drives the employment of heuristics in decision making is well established in various domains, such as persuasion (e.g., Petty and Wegener 1999), judgment and choice (Ferreira et al. 2006), and compliance (Cialdini 1993). The heuristic-systematic processing model of persuasion (Chaiken 1980) states that under conditions of mindlessness, recipients of persuasive messages typically resort to simple heuristics to arrive at a judgment. In a seminal study, Chaiken (1980) showed that low involvement recipients used a simple source-related heuristic (e.g., "Likeable sources can be trusted") in evaluating a message, whereas high involvement participants depended on argument quality. Importantly for the present research, mindless (i.e., low involvement) message recipients were not susceptible to influence by the persuasive message by default, but only to the extent that a suitable heuristic was present in the persuasion context.

The idea that reliance on heuristics leads to compliance has been inferred but not formalized empirically. Many compliance-gaining techniques are assumed to be effective under mindless conditions because they trigger a fixed action pattern (to wit, Cialdini's [1993] famous *click, whirr* effect), which encourages acquiescence to the request. As a classic example, Langer et al. (1978) showed that people are more willing to yield to a request when the requester provides a reason for doing so. Significantly more participants waiting in line to make photocopies accommodated a confederate barging ahead of the line if he or she gave a reason, regardless of whether the reason was legitimate ("Because I'm in a rush") or trivial ("Because I have to make some copies").

These results underscore our idea that a suitable and compliance-promoting heuristic (in the Langer et al. case, the "because heuristic") must be present in the influence context in order for a state of mindlessness to result in charitable behavior. Please note that we do not argue that such heuristic decision making results in compliance per se, but only to the extent that the heuristic points to compliance as an efficient behavioral outcome.

In sum, our approach is the first to offer an in-depth account for a single underlying process explaining why and how mindlessness may result in compliance with charitable requests across many social influence techniques typically employed by charity professionals. Our key postulate is a two-stage model that accounts for the influence of sequential request techniques on compliance. Recall that these two stages are: (1) the initial request phase of sequential request techniques induces mindlessness through a state of self-regulatory resource depletion (hypothesis 1), and (2) depletion-induced mindlessness heightens compliance through reliance on heuristics (hypothesis 2). This compliance manifests itself in greater willingness and actual performance of acts of benevolence such as freely donating time, effort, or money without expecting something in return.

Apart from shedding light on the dynamics underlying charitable behavior, our work also extends previous research on the behavioral effects of regulatory resource depletion. Earlier studies have stressed that self-regulation failure often results in egocentric, self-serving, and sometimes even antisocial behavior (Finkel and Campbell 2001; Tangney, Baumeister, and Boone 2004). Our model allows for an alternative behavioral outcome, namely, that self-regulation failure may also produce prosocial behavior if a suitable context (i.e., heuristic) that fosters compliance in the interest of a prosocial cause is present.

Our research contributes to the literature in four ways. First, we focus on a form of consumer behavior that is widespread (Clary et al. 1994; Stukas et al. 2008) but has received scant attention in the consumer behavior literature. In contrast to the *quid pro quo* principle that governs more prototypical forms of consumer behavior, charitable giving appears at odds with the tenets of rational consumer decision making since it involves handing over valuable resources (time, money, or effort) to a requesting agent without expecting a good or service of similar value in return.

Second, our work extends the literature on charitable giving. Whereas past research has underscored the role of mindful decision making in donation behavior, as exemplified in work on salient consumer motives for charity (e.g., Clary et al. 1994; Mowen and Sujan 2005), we highlight the importance of situations in which charitable behavior constitutes an act of mindlessness. Third, the present work extends the literature on social influence by zooming in on the very act of compliance, a dependent variable that all too often has been taken for granted in earlier studies. In particular, our work points to the consequential nature of acts of compliance involving the donation of (sometimes substantial) amounts of time, money, or effort. Fourth and finally, the

present research extends the literature on self-regulatory resource depletion by addressing the prosocial behavioral consequences of regulatory resource depletion, which provides a counterpoint to the acts of self-centered and selfish behaviors that have been documented in earlier studies (e.g., Finkel and Campbell 2001; Tangney et al. 2004).

## OUTLINE OF EXPERIMENTS

In experiments 1 and 2 we gathered evidence to test stage 1 (hypothesis 1) of our model by examining the initial request phase of a typical foot-in-the door ploy aimed at fostering volunteer behavior. In one laboratory and one field experiment, we showed that yielding to an initial request to answer a series of self-disclosing (experiment 1) or cognitively demanding (experiment 2) questions induced self-regulatory resource depletion. This finding supported the hypothesis that responding to the initial request suffices to induce self-control failure. Additionally, in two follow-up field studies, we ruled out alternate explanations that emotion changes, type of interaction, commitment to, or norm violation by the influence agent could account for the effects on regulatory resource depletion. Experiment 3 linked stage 1 and stage 2 of our model by providing a formal test of mediation to assess whether self-regulatory resource depletion indeed functioned as a pivotal intervening variable between the initial request phase and the target request phase in sequential request procedures where the ultimate act of compliance is sought.

In experiments 4–6, we tested stage 2 of the model (hypothesis 2). In this series of lab and field studies, we demonstrated that self-regulatory resource depletion fostered the use of heuristics in decision making, thereby increasing the chances of compliance with a charitable request. In experiment 4, the availability of self-regulatory resources was manipulated, as was the salience of a heuristic principle (in this case, the principle of reciprocity that is featured in the door-in-the-face technique; Cialdini 1993; Cialdini et al. 1975; Gouldner 1960). Subsequently, compliance with a request to act as a volunteer was measured. We predicted and found that when participants were in a state of self-regulatory resource depletion and were presented with a heuristic for reciprocity, they showed a clear tendency to comply with the request. We extended the generalizability of our theorizing in experiments 5 and 6 to include other operationalizations of self-regulatory resource depletion. We also demonstrated the effect in both field and lab settings involving different heuristics and other forms of charitable behavior. Moreover, whereas experiments 4 and 5 involved situational manipulations of reduced self-control, experiment 6 obtained converging evidence by investigating trait self-control. In sum, across six experiments—both field based and laboratory based—we found consistent support for our model, in which charitable behaviors are conceptualized as an outcome of self-regulatory resource depletion as induced by the initial stages of a scripted influence tactic, in combination with a compliance-promoting heuristic.

## EXPERIMENT 1

Experiment 1 provided the first test of our hypothesis that yielding to an initial request of a compliance-gaining procedure depletes self-regulatory resources. We used a subtype of the FITD procedure called the continuing questions procedure (Burger 1999). This particular FITD procedure heightens impression management motives, which are known to deplete participants' regulatory resources (Vohs et al. 2005). As is typical for this tactic, the initial questions sow the seed for compliance by being conceptually related to the target request (e.g., in the current experiment the initial questions pertained to one's eating habits and the target request was whether people were willing to keep a food diary). Participants in the target-request-only condition were not asked the initial questions. We predicted an effect of the type of influence technique (FITD vs. no initial request) on self-regulatory resource depletion, which was measured by counterargument generation (Fennis et al. 2004).

### Design and Procedure

A total of 39 undergraduate students (20 female, 19 male; mean age 22.2 years,  $SD = 2.80$ ) participated in a single factor (type of influence attempt: FITD vs. no initial request), two-cell between-subjects design.

Prior to arrival at the laboratory, participants were randomly assigned to condition. Upon arrival, participants were told that they would be participating in a study on food and lifestyles as part of a larger study conducted by the Department of Consumer Psychology. In the FITD condition, participants were presented with an initial request, which asked them to answer a series of questions on their personal eating habits. Specifically, participants were asked to complete 20 multiple-choice questions about the foods they consume, such as the amount of saturated fat, whole bran, carbohydrates, vegetables, and dairy products. These questions offered participants the opportunity to present themselves in a socially desirable manner by emphasizing the health-conscious nature of their eating habits. This initial request was absent in the no-initial-request condition.

### Dependent Measures

**Compliance.** In both conditions, the target request asked participants whether they would volunteer to keep a food diary for 2 weeks, which involved describing what they consume, when, and how much. Participants' willingness (yes vs. no) to keep the food diary was recorded as compliance with the target request.

**Self-Regulatory Resource Depletion.** We assessed self-regulatory resource depletion by querying whether participants (who were students of the university where the study was conducted) favored or opposed a €100 raise in tuition fees. Then we gave them the task of arguing the opposite, such that participants who favored the raise (28.2%) were told to generate as many arguments as they

could against the raise, whereas those opposing the raise (71.8%) were asked to generate arguments in favor of the raise. Hence, all participants were asked to actively override their primary evaluative response to the issue, an act requiring active self-regulation (see Wheeler et al. 2007). There was no time limit for answering. The number of counterarguments generated served as a measure of self-regulatory resource depletion.

## Results and Discussion

In line with hypothesis 1, we found that being exposed to the initial request inherent in the FITD technique resulted in greater self-regulatory resource depletion than being exposed to the target request only ( $t(37) = 2.11, p < .05, d = .68$ ). Specifically, participants exposed to the FITD procedure generated significantly fewer counterarguments ( $M = 3.11, SD = .99$ ) than participants in the no-initial-request condition ( $M = 4.15, SD = 1.93$ ). In confirmation that this influence technique worked as assumed, we also observed the expected difference in willingness to volunteer. A logistical regression showed that type of influence attempt affected compliance ( $\text{Wald}(1) = 4.29, p < .05$ ). In support of typical findings, a greater percentage (74%) of participants exposed to the FITD procedure agreed to keep a food diary, compared to 40% of participants in the no-initial-request condition. In sum, these findings provided a first demonstration that being exposed to a sequential request technique involving a series of self-disclosing questions affects the extent of regulatory resource depletion.

## EXPERIMENT 2

Experiment 2 sought to extend the results of experiment 1 in four key ways. First, it is possible to interpret the finding of reduced self-regulatory resources among participants in experiment 1 as occurring because there were two acts of compliance in the FITD condition and only one compliance demand for participants in the target-request-only condition. In the current experiment, therefore, only the initial request stage of the FITD influence paradigm was used to test whether this stage on its own affects subsequent self-regulatory ability, as we predict. Second, to provide a stronger test of whether influence techniques would determine self-regulatory capacity, we moved our test to a more naturalistic setting outside the laboratory using actual consumers as participants.

Third, we tested whether yielding to a cognitively demanding initial request (as is often used in influence research, e.g., Seligman et al. [1976]) would result in self-regulatory resource depletion, a finding that would converge with the effortful self-presentation manipulation used in experiment 1. Consumers either were or were not requested to answer a series of open-ended questions. In contrast to experiment 1, these questions addressed a cognitively demanding topic: the perceived consequences of CO<sub>2</sub> emissions on quality of life. Fourth, we measured persistence and performance on a complex cognitive test as an alternate

means of assessing self-regulatory resource depletion. We chose this measure based on the finding that weakened self-regulatory resources impair higher-order reasoning (Schmeichel et al. 2003). The key hypothesis, therefore, was that complying with the initial request to answer cognitively demanding questions would require self-regulation and thereby impair performance on the subsequent cognitive test relative to not being presented with an initial request. Finally, in two follow-up studies we aimed to rule out several alternate explanations.

## Design and Procedure

Sixty people (30 female, 30 male; mean age 43.2 years,  $SD = 14.59$ ) participated in a single factor (initial request vs. no initial request) between-subjects design. A female confederate randomly approached consumers in the center of a large town with a request to participate in a study ostensibly conducted by the Young Researchers Society. The confederate introduced herself as a representative of the society and stated that they were about to celebrate their 5-year anniversary. As part of the anniversary event, the society wanted to conduct an opinion poll. She then asked participants whether they were willing to answer a few questions as part of this poll.

Participants were randomly assigned to the initial request versus no-initial-request condition. In the initial request condition, participants were requested to respond to a series of questions about CO<sub>2</sub> emissions. Participants were asked, "Are you familiar with the harmful consequences of CO<sub>2</sub> emissions by cars and trucks? Could you name a few of those harmful consequences and explain why you think they are harmful? How do you think car drivers can contribute to restoring the harmful effects of CO<sub>2</sub> emissions on the environment?" Participants in the no-request condition were not asked any questions.

## Dependent Measure

Self-regulatory resource depletion was measured using a cognitive performance test. The cover story stated that this test was introduced as a contest as part of the events surrounding the society's celebration and that a €20 gift certificate would be won by the participant who correctly answered the greatest number of questions, statements that heighten motivation to perform well (see Baumeister and Vohs [2007] for the role of motivation in self-regulation). Participants were then asked to complete a cognitive performance test comprising 25 problems that involved complex reasoning (Schmeichel et al. 2003). Sample items include: "The correct answer is A, B, C, or D. It is not a vowel, and the letter is not present in the word 'cider.' Which letter is correct?" and "Andre is taller than Linda. Susan is shorter than Rob. Susan is shorter than Linda. Who is the tallest? A: Andre; B: Rob; C: Linda; D: Andre or Rob" (the correct answers to these questions are "B" and "D," respectively). Participants were told that they could stop working at any time. In line with Schmeichel et al. (2003), num-

ber of questions attempted, number of correct answers, and proportion of correct answers as a function of attempts were the dependent measures.

## Results and Discussion

*T*-tests using request versus no-request condition as independent variable were conducted on three dependent variables: (a) number of attempted answers to the cognitive performance test, (b) number of correct answers, and (c) proportion of items answered correctly relative to number attempted. Supporting hypothesis 1, participants requested to answer the initial questions attempted fewer questions on the cognitive performance test ( $M = 6.53$ ,  $SD = 6.40$ ) compared to participants not presented with an initial request ( $M = 10.0$ ,  $SD = 5.37$ ;  $t(58) = 2.27$ ,  $p < .05$ ,  $d = .59$ ). Moreover, participants in the initial request condition also gave fewer correct answers ( $M = 4.33$ ,  $SD = 4.47$ ) than did participants in the no-request condition ( $M = 7.07$ ,  $SD = 5.20$ ;  $t(58) = 2.18$ ,  $p < .05$ ,  $d = .57$ ). The third dependent measure, ratio of correct answers relative to attempts, was significantly lower among initial request condition participants ( $M = .34$ ,  $SD = .33$ ) relative to no-request participants ( $M = .53$ ,  $SD = .29$ ;  $t(58) = 2.31$ ,  $p < .05$ ,  $d = .61$ ).

These findings replicated and extended the results of experiment 1. In line with experiment 1, yielding to an initial request, which in the present case involved answering a series of cognitively demanding questions about CO<sub>2</sub> emissions, brought about a state of self-regulatory resource depletion. Consequently, participants in the initial requests condition were impaired on three different indices of intellectual functioning relative to participants in the no-requests condition. In addition, the present experiment ruled out the alternative notion that participants must be presented with both the initial request and the target request in order to become regulatory resource depleted. Rather, yielding to an initial request is sufficient to bring about this state. Finally, it is key that the current findings, which were obtained in a field setting, are paralleled by the lab results of experiment 1. Moreover, the effect sizes obtained in both studies are of comparable magnitude, suggesting that neither set of results were unduly influenced by setting-specific biases, such as self-selection, demand characteristics, or differential attrition.

Two auxiliary field studies with 35 and 46 participants, respectively, were conducted to exclude four potential alternative explanations for the impact of initial request(s) on regulatory resource depletion: (1) differences in duration of the interaction as a function of receiving an initial request may have affected the results; (2) the possibility existed that the causal factor in producing depletion in experiments 1 and 2 was not a request to answer a series of self-presentational or cognitively demanding questions but instead was due to an unanticipated conversation with an unknown person; (3) (negative) affect may have played a role; and (4) the possibility that reduced counterargumentation in experiment 1 and impaired cognitive performance in experiment

2 were attributable to a perception that the requesting agent "overtaxed" the target or demanded too much of the target without a counterconcession of some sort, thus violating a norm of reciprocity (Gouldner 1960). Regarding concern 4, this perception may have increased resistance to accommodate the agent and hence reduced performance on the counterargumentation task (experiment 1) and cognitive performance test (experiment 2).

To address concerns 1 and 2, in both follow-up studies we contrasted an initial request condition in which people had to answer a series of eight open-ended questions about personal health and lifestyle behaviors (presumably fostering active impression management motivations) with a condition in which a confederate approached consumers on the street and asked them for directions. In this condition, people were asked to point out three well-known locations on a map of the city in which the study took place. Both conditions lasted an average of 2.5 minutes ( $SD = 44.42$  seconds) and did not significantly differ from each other with respect to duration ( $t < 1$ ).

To assess whether violating the norm of reciprocity accounted for the earlier findings (concern 4), the first auxiliary study varied the number of requesters (either one or two). Following procedures outlined by Cialdini et al. (1975), if norm violation by the agent in our previous experiments explained the earlier findings, we should expect increased participant resistance when the same confederate made both the initial request and subsequent requests (i.e., completing the depletion measures and asking the target request), but not when one confederate makes the first request and a second confederate makes the second request.

Furthermore, in the first follow-up study we measured affect (concern 3) using the PANAS (Watson, Clark, and Tellegen 1988), liking of the influence agent, feelings of resistance toward the requester, and self-presentational effort. In the second auxiliary study we assessed self-regulatory resource depletion using the validated (unsolvable) figure-tracing task (see Baumeister et al. 1998).

The results of the first follow-up experiment with type of request and number of requesters as factors (using full factorial ANCOVAs with interaction duration as a covariate) failed to result in significant effects—except for the predicted effect on participants' reports of active self-presentation ( $F(1, 30) = 4.73$ ,  $p < .05$ ,  $d = .68$ ). Answering a series of personal health and lifestyle-related questions required more effortful self-presentation ( $M = 3.47$ ,  $SD = 1.02$ ) than simply having an unanticipated conversation with a confederate ( $M = 2.74$ ,  $SD = 1.11$ ). These results indicated that the type of encounter influenced active impression management concerns but did not affect emotions, liking for the confederate, or perceptions of receiving too many demands from the requester.

The second follow-up study, which used the same type of request condition, showed that having to answer a series of questions inducing active impression management concerns resulted in increased self-regulatory resource depletion. Participants who answered eight open-ended questions

about their health behavior and lifestyle worked less on an unsolvable figure ( $M = 62.04$  seconds,  $SD = 50.20$ ) than did participants who conversed with a confederate about how to find several town landmarks ( $M = 141.62$  seconds,  $SD = 81.20$ ;  $t(44) = -3.91$ ,  $p < .001$ ,  $d = 1.18$ ). In addition to differences in temporal persistence, participants in the requests condition put forth fewer attempts to solve the puzzle ( $M = 1.84$ ,  $SD = .85$ ) than did participants in the landmark condition ( $M = 4.67$ ,  $SD = 3.72$ ;  $t(44) = -3.41$ ,  $p < .01$ ,  $d = 1.05$ ).

Together, these findings clarified the results of experiments 1 and 2. Answering cognitively demanding questions or questions that involve effortful self-presentation seems to be an important element in multiple request encounters in that they deplete self-regulatory resources. The combined results of the two follow-up studies indicated that the results of experiments 1 and 2 cannot be attributed to the fact that participants were stopped in the street to have a conversation with a stranger, nor can they be attributed to changes in emotions, reduced liking for the influence agent, or perceptions of the influence agent demanding too much from the target.

### EXPERIMENT 3

The previous studies demonstrated the pivotal role of self-regulatory resource depletion as an outcome of responding to the initial stage of a social influence technique designed to promote compliance with charitable requests. Yet the two-stage model posits that regulatory resource depletion functions as a mediating variable, produced by the initial stages of a compliance-gaining technique and, in turn, fostering compliance with the target request. The present experiment sought to bridge stage 1 and stage 2 of the model by directly assessing this mediating role.

Moreover, to balance the scope and domains of the findings thus far, and in line with experiment 2, the present lab study employed an FITD procedure, which included an initial request requiring a cognitively demanding task (cf. Seligman et al. 1976). In line with experiment 1, the initial questions foster compliance by being conceptually related to the target request (i.e., in the current experiment the initial questions dealt with knowledge regarding consumer taxes, and the target request was willingness to serve as a future research participant for the Tax and Customs Administration). In line with the two auxiliary studies, the present experiment contrasted a cognitively demanding initial request condition with a condition in which a confederate approached participants with an equal number of questions of a less demanding nature. In this way, we varied a key factor of successful sequential request techniques: the extent to which responding to the initial request requires high levels of cognitive effort (see Burger 1999). Moreover, the current procedure ascertained that duration and extent of dialogue of both conditions were equivalent and therefore could not act as design confounds in the present experiment.

In extension to both follow-up studies, we kept consistent the topic of the questions between the high demanding FITD

condition and the less demanding condition. In an extension of experiment 2, participants in the present study were exposed to a target request eliciting compliance, and we measured self-regulation using the well-known Stroop task (Stroop 1935; Vohs et al. 2005; Wallace and Baumeister 2002). Our prediction was that type of influence technique would evince a main effect on self-regulatory resource depletion. Moreover, we expected that self-regulatory resources would mediate the impact of type of technique on compliance, as the two-stage model holds.

### Design and Procedure

A total of 37 undergraduate students (27 male, 10 female, mean age 21.3 years,  $SD = 2.30$ ) participated in a single factor (type of FITD influence attempt: demanding vs. undemanding initial request), two-cell between-subjects design.

Prior to arrival at the laboratory, participants were randomly assigned to condition. Upon arrival, participants were told that they would take part in a study on consumer behavior ostensibly conducted on behalf of the Dutch Tax and Customs Administration and were to be paid €2.50 for participating (approximately US\$3.90). In the cognitively demanding FITD condition, participants were presented with an initial request, which asked them a series of 10 challenging questions regarding their knowledge of consumer taxes and the Tax and Customs Administration. Answering these questions required high-level intellectual processing. In the low demanding condition, the 10 questions were on the same topic (consumer taxes) but did not require active and controlled problem solving and therefore were considered less demanding (see Schmeichel et al. 2003). For instance, in the cognitively demanding FITD condition, participants were asked, "One of the problems of the Tax and Customs Administration is the fact that many people tend to submit their tax claims after the yearly deadline. What steps can the Administration take to prevent this without giving citizens a fine?" In contrast, one of the questions in the undemanding condition was, "What is the first thing that comes to mind when you think about the Tax and Customs Administration?"

### Dependent Measures

*Cognitive Effort.* We assessed the extent to which responding to the initial request involved differential cognitive effort using 9-point Likert scales. To this end, we administered two items assessing the extent to which the participant reported (a) having exerted considerable mental effort while responding to the initial request and (b) thinking extensively before answering the questions.

*Self-Regulatory Resource Depletion.* We used the Stroop task to assess self-regulatory resource depletion. Several studies have established that performance on the Stroop task taxes self-regulatory resources (Gailliot, Baumeister, and DeWall 2007; Muraven, Shmueli, and Burkley 2006;



Wallace and Baumeister 2002; Webb and Sheeran 2003). For participants low in regulatory resources it is harder to inhibit or override the automatic habitual inclination to respond to the semantic meaning of the word and instead report the font color in which the word is printed. Hence, participants who are more depleted of their regulatory resources should take longer to report the ink color than less depleted participants (Webb and Sheeran 2003). Participants responded to each stimulus by clicking one of four buttons on their computer screen, which corresponded to the various color words. Participants received 32 randomized trials, of which 8 were congruent (a stimulus word was presented in a font color that matched its semantic meaning; e.g., "blue" was presented in blue font) and 24 were incongruent (a stimulus word was presented in a font color that mismatched its semantic meaning; e.g., "blue" presented in red font). Participants were instructed to report the font color of each word as quickly as possible, and the time it took participants to respond to each trial was recorded. In line with previous research (e.g., Muraven et al. 2006; Webb and Sheeran 2003), average reaction times on the Stroop task served as our main dependent variable of self-regulation.

**Compliance.** In all conditions, the target request was whether participants would be willing to volunteer as a future research participant for studies conducted on behalf of the Tax and Customs Administration. Compliance was measured by number of studies for which participants volunteered (possible range 0–10).

## Results and Discussion

The present experiment assessed the impact of a sequential request technique that used an initial request that was cognitively demanding as opposed to one that was relatively undemanding. Our first test therefore assessed participants' reports of exerted mental effort while responding to the initial request. In support of our assumptions, we found an effect of type of request on reports of exerted mental effort ( $t(35) = 3.19, p < .01, d = 1.06$ ) and on the extent to which participants reported having thought extensively before answering the questions ( $t(35) = 3.58, p < .001, d = 1.18$ ). The means showed that responding to an initial request that comprised a series of cognitively demanding questions required more mental effort ( $M = 7.39, SD = 1.65$ ) and induced a stronger need to think extensively ( $M = 7.28, SD = 1.99$ ) than responding to a similar number of less taxing questions on the same subject ( $M = 5.32, SD = 2.24$  and  $M = 4.89, SD = 2.05$ , respectively).

**Mediation Analysis.** The key objective of the present study was to assess whether self-regulatory resource depletion mediates the impact of a sequential request social influence technique on compliance with a volunteering request. To this end, a mediation analysis was performed following suggestions by Baron and Kenny (1986). These authors claim that demonstrating mediation requires estimating a series of regression models that first regress the

mediator on the independent variable; then, second, regress the dependent variable on the independent variable; then, third, regress the dependent variable both on the independent variable and on the mediator. Full mediation is demonstrated when the independent variable significantly affects the mediator in equation 1, the independent variable significantly affects the dependent variable in equation 2, and the mediator significantly affects the dependent variable in equation 3 while the impact of the independent variable is rendered nonsignificant.

The results of these analyses supported our predictions. First, the type of influence attempt (dummy coded) significantly predicted self-regulatory resource depletion as indexed by performance on the Stroop task ( $\beta = .42, t = 2.72, p < .01$ ). The means showed that participants who responded to an initial request that comprised cognitively demanding questions had slower reactions on the Stroop task ( $M = 1.46$  seconds,  $SD = .32$ ) than did participants who responded to an initial request that comprised undemanding questions ( $M = 1.24$  seconds,  $SD = .24$ ). As the second step, type of influence attempt significantly affected compliance rates ( $\beta = .34, t = 2.11, p < .05$ ). In line with predictions, participants exposed to a sequential request technique that included a cognitively demanding initial request were more willing to act as a future research participant ( $M = 2.28, SD = 2.45$ ) than were participants in the undemanding initial request condition ( $M = .95, SD = 1.22$ ). As the third step, the regression analysis with type of influence attempt and self-regulatory resource depletion (i.e., Stroop performance, centered) as predictors and compliance as the criterion showed that self-regulatory resource depletion significantly predicted compliance rates ( $\beta = .40, t = 2.42, p < .05$ ), whereas the effect of type of influence attempt on compliance was reduced to nonsignificance ( $\beta = .17, t = 1.03, NS$ ).

In sum, these results provided support for the first part of our two-stage model, not only by providing converging evidence that sequential request techniques elicit self-regulatory resource depletion, but additionally showing that this state of reduced self-control in turn promotes yielding to a target request. Please note that compliance as the product of self-regulatory resource depletion occurs because the sequential request technique has embedded in it a heuristic principle; in this experiment, we employed an FITD ploy consisting of continuing questions (see Burger 1999), which is similar to the compliance-gaining procedure employed in experiment 1. The heuristic principle pointing to compliance in this case was the principle of consistency—that is, the propensity to behave congruently across situations. The next experiments will address in detail the role of self-regulatory resource depletion in responding to persuasive heuristics.

The following three experiments tested the second stage of the model (hypothesis 2). To do so, we focused on the effect of weak self-control ability (manipulated in experiments 4 and 5 and measured as an individual difference in experiment 6) on compliance with a charitable target request. We predicted that reduced self-control capacity would foster

reliance on heuristics that increase the odds of compliance. Experiments 4 and 5 investigated the role of self-regulatory resource depletion in the use of two heuristics that are frequently embedded in social influence techniques (Cialdini 1993): the principles of reciprocity (experiment 4) and likeability (experiment 5). We conclude this series of experiments by examining monetary donations to charity as a function of individual differences in self-control within the context of another full compliance-gaining procedure—namely, the lowball technique (Burger and Cornelius 2003; Burger and Petty 1981).

## EXPERIMENT 4

In experiment 4 we induced a state of regulatory resource depletion with a self-control task and manipulated the salience of the heuristic principle of reciprocity, which is the principle featured in the door-in-the-face technique (Cialdini et al. 1975). Next, participants were presented with a target request to volunteer as a research assistant, with amount of time participants were willing to volunteer as our compliance measure. We expected self-regulatory resource-depleted participants to show increased compliance with the target request, compared to their nondepleted counterparts, but only when the reciprocity principle was made salient.

### Design and Participants

One hundred and eight students enrolled in various undergraduate programs (71 female, 37 male; mean age 20.51 years,  $SD = 2.02$ ) participated in exchange for partial course credit. The study used a 2 (self-regulatory resource depletion condition: depletion vs. no depletion)  $\times$  2 (heuristic activation: reciprocity vs. no reciprocity) between-subjects factorial design.

Prior to arrival at the laboratory, participants were randomly assigned to one of the four conditions. Participants were told that the experiment consisted of several unrelated tasks. We induced self-regulatory resource depletion with a task adopted from Baumeister et al. (1998). All participants were given typewritten sheets of paper with dense text (a page from a highly advanced statistics book) and were instructed to cross off all instances of the letter *e*. After completing one sheet, no-depletion participants were instructed to continue with the same task on a different sheet of typewritten paper. Self-regulatory resource depletion participants, in contrast, were then told to learn and apply new rules about when and whether to cross off occasions of the letter *e*. Compared to participants in the no-depletion condition, resource depletion participants had to engage in more self-control to inhibit the overlearned response of crossing out every *e* and instead use more complicated and cognitively demanding rules. Previous research has shown that these two conditions produce significant differences in the supply of self-regulatory resources (Baumeister et al. 1998).

The next step involved manipulating the salience of the reciprocity heuristic. In the reciprocity condition, the experimenter told participants that she would make an excep-

tion and excuse them from the next part of the experiment, which involved a mathematical test that other participants thought was quite dull and boring, because she decided she had collected enough data on the test. Participants in the no-reciprocity condition were not told about a math test or anyone being excused from it. The concession made by the experimenter was aimed at inducing a counterconcession on the part of the participant (Cialdini 1993) in the form of increased compliance with the volunteering request.

### Dependent Measure

Next, the experimenter instructed participants to sit at a desk with a computer. After the participant clicked a button, the following message appeared on the screen: "For next year, researchers in the Department of Communication are looking for students who will voluntarily participate as an experimenter during research. If we'd ask you this favor, how much time would you be willing to participate?" Participants could answer this target request on a scale ranging from 0 to 240 minutes in 30-minute intervals. Length of time participants were prepared to volunteer was our measure of compliance (Kardes et al. 2007). Afterward, participants were debriefed and thanked.

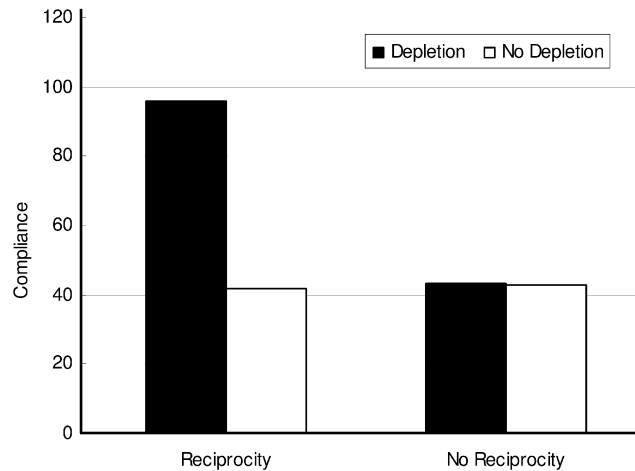
### Results and Discussion

Overall 70% of participants agreed to act as a volunteer in response to the target request. An ANOVA was conducted on degree of compliance with the target request as a function of depletion condition (depletion vs. no depletion) and heuristic activation (reciprocity vs. no reciprocity). This analysis showed that the interaction between depletion condition and heuristic activation condition was significant ( $F(1, 104) = 10.22, p < .01, \eta^2 = .09$ ). As predicted, analysis of the simple main effects showed that the effect of resource depletion on volunteering behavior was only significant in the reciprocity condition ( $F(1, 104) = 19.36, p < .001, d = 1.16$ ). After being given the reciprocity cue, participants who had completed the rule-switching version of the crossing out *e* task (i.e., who were depleted of their regulatory resources) showed higher compliance by volunteering more of their time ( $M = 96.00$  minutes,  $SD = 52.05$ ) than did nondepleted participants ( $M = 41.61$  minutes,  $SD = 41.48$ ). When the reciprocity principle was not made salient, however, availability of self-regulatory resources had no effect on compliance rates ( $M_{\text{depletion}} = 43.45, SD = 43.61$  versus  $M_{\text{no-depletion}} = 42.86, SD = 36.90, F < 1$ ; see fig. 2).

The statistical model also showed a main effect of both factors. Participants who were depleted of their regulatory resources were overall willing to spend more minutes voluntarily participating as an experimenter ( $M = 64.90, SD = 53.51$ ) as compared to participants in the no-depletion condition ( $M = 42.20, SD = 39.04; F(1, 104) = 10.68, p < .01, d = .48$ ). Participants also complied more with the request when the heuristic principle of reciprocity was made salient ( $M = 62.94, SD = 52.74$ ) compared to compliance

FIGURE 2

AVERAGE NUMBER OF MINUTES PARTICIPANTS VOLUNTEERED TO SERVE AS AN EXPERIMENTER AS A FUNCTION OF DEPLETION INDUCTION CONDITION AND HEURISTIC-ACTIVATION CONDITION; EXPERIMENT 4



rates in the no-reciprocity condition ( $M = 43.16$ ,  $SD = 40.10$ ;  $F(1, 104) = 9.30$ ,  $p < .01$ ,  $d = .42$ ).

The results of experiment 4 supported our second key hypothesis that self-regulatory resource depletion fosters compliance with a charitable request, namely, through reliance on heuristics. We observed greater compliance with the request when self-regulatory resources had been lowered as compared to when they had been untouched—but only when a compliance-promoting heuristic was part of the influence setting. Notice that in the no-reciprocity condition, self-regulatory resource depletion per se did not result in enhanced compliance, suggesting that even people in a weakened state can see through blunt, direct attempts at being influenced (Friestad and Wright 1994). Rather, depletion appears to increase susceptibility to influence attempts only when the influence attempt contains the lure of a suitable heuristic that can function as the basis for decision making. To generalize these findings beyond the specific type of self-regulatory resource depletion induction, heuristic principle, and type of compliance in experiment 4, the following two studies varied each of these variables. Moreover, the next experiment aimed to demonstrate the results of experiment 4 in the field to further enhance the generalizability of the findings.

## EXPERIMENT 5

The purposes of experiment 5 were to replicate the results of experiment 4 in a naturalistic setting as well as include different manipulations of self-regulatory resource depletion and heuristic activation. We induced self-regulatory resource depletion with a mirror-tracing persistence task (see Quinn, Brandon, and Copeland 1996) and this time activated the heuristic principle of likeability (Cialdini 1993). The latter was done by giving participants a com-

pliment on their task performance. We also assessed a different form of compliance: agreement to participate in future studies of a research society. We predicted that self-regulatory resource-depleted participants would show increased compliance with the volunteering request, compared to nondepleted participants, but only when the likeability principle was made salient.

## Design and Procedure

One hundred students (37 female, 63 male; mean age 21.54 years,  $SD = 2.39$ ) participated in a 2 (self-regulatory resource depletion condition: depletion vs. no depletion)  $\times$  2 (heuristic activation: likeability vs. no likeability) between-subjects factorial design. One of five confederates (three female, two male) approached students on a university campus and asked whether they would participate in a short study conducted by the (fictitious) Fluid Intelligence Society to test people's "mental age." Participants were randomly assigned to the depletion or no-depletion condition.

Participants performed a geometric figure-tracing task (see Quinn et al. 1996), which required participants to hand trace geometric figures for 4 minutes. In the depletion condition, participants performed this task with their nondominant hand and guiding their movements while watching their hand in a mirror. Those in the no-depletion condition traced the same figures with their dominant hand and without the mirror.

After the tracing task, participants in the likeability condition were paid a compliment by the confederate ("You did a very good job performing this task"), a response that is known to activate the heuristic principle of likeability (Cialdini 1993). In the no-likeability condition, no comments about participants' task performance were made.

## Dependent Measure

Next, the confederate asked if participants would like to volunteer to participate in future studies of the society. Whether participants agreed to volunteer was our measure of compliance. Afterward, participants were debriefed and thanked.

## Results and Discussion

A fairly high percentage of participants (78%) complied with the volunteering request, which was likely a result of the volunteering being described as fun to do. Given the dichotomous nature of the dependent variable, the data were analyzed using logistical regression. As predicted, and in line with the results of experiment 4, there was a significant interaction between depletion condition and heuristic activation condition on compliance ( $Wald(1) = 5.36, p < .05$ ). No other effects were observed.

Chi-square tests confirmed that self-regulatory resource depletion encouraged heuristic decision making: when the heuristic principle of likeability was activated, 88.5% of the participants who were depleted of their self-regulatory resources complied with the volunteering request as compared to 65.4% of participants in the no-depletion condition ( $\chi^2(1) = 3.90, p < .05$ ). When the heuristic was absent from the influence setting, the percentage of depletion participants that complied was statistically equivalent to the percentage of no-depletion participants (70.8% vs. 87.5%;  $\chi^2(1) = 2.02, NS$ ).

These results suggest that a state of self-regulatory resource depletion renders people susceptible to the likeability heuristic, thereby increasing the odds that they will comply with a volunteering request. Importantly, the chi-square tests indicate that the interaction effect between self-regulatory resource depletion and likeability is ordinal, rather than disordinal, and thus parallels the findings of experiment 4. Nevertheless, the pattern of results in the no-heuristic condition appears to suggest that depleted participants tended to comply less than nondepleted participants. Since the effect is nonsignificant we can only speculate as to the underlying processes, but one possibility is that the absence of a heuristic robbed depleted participants (but not their nondepleted counterparts) of a basis for making a decision, thus resulting in reduced compliance compared to nondepleted participants. That is, decision making requires self-regulatory resources (Vohs, Baumeister, Schmeichel, et al. 2008) and when people are temporarily weak in self-regulation they consequently become worse at making decisions (Pochepstova et al., forthcoming). Hence, it is possible that depleted participants who were left without a cue with which to make a decision did not have a salient guide to behavior. Conversely, for no-depletion participants, their behavior may have served as a cue to subsequent compliance. That is, no-depletion participants were given a fairly straightforward task (i.e., tracing figures without a mirror using their dominant hand). In the no-likeability condition, no feedback on their performance was given and therefore these participants

had to infer for themselves whether they had done a good job. (Again, the task was so easy that it was clear that they had.) Given the easiness of the task, their performance may have prompted increased willingness to comply with the target request to volunteer in future studies, compared to no-depletion participants in the likeability condition (who may have perceived the heuristic as redundant).

In sum, these findings extend the results of experiment 4 to other types of heuristic principles, other manipulations of self-regulatory resource depletion, and other forms of charitable behavior. Moreover, these results demonstrated that the impact of self-regulatory resource depletion on compliance is not restricted to the laboratory but can be elicited and observed in naturalistic dyadic influence settings as well.

## EXPERIMENT 6

Experiment 6 extended our previous results in three important ways. First, whereas experiments 4 and 5 relied on direct manipulations of self-control, the present investigation sought converging evidence by assessing individual differences in dispositional self-control (Tangney et al. 2004). To the extent that the proposed model is general, we ought to see not only that low self-regulatory resources can be induced by situational demands but also that people dispositionally low in self-control ought to respond in a similar fashion.

Second, whereas experiments 4 and 5 had tested the role of self-regulatory resource depletion in producing compliance, they had not examined the dynamics of a full charitable sequential request technique, which is composed of an initial and a target request. Hence in the current experiment, we used procedures akin to those used in experiments 1 and 3, albeit using a different influence technique than in those studies: the lowball technique (Burger and Petty 1981; Cialdini et al. 1978).

The heuristic principle of consistency (Burger and Cornelius 2003; Cialdini 1993; Cialdini et al. 1978) drives the effectiveness of the lowball technique. In the lowball procedure, consumers are presented with an initial request (e.g., "Would you like to participate in a study?") and after they comply, the cost of compliance is raised ("The study will be conducted next Sunday at 7:00 a.m."). The act of initial compliance activates the principle of consistency, which in turn fosters compliance with the intended target request.

Germane to our notions regarding hypothesis 1, research by Burger and Petty (1981) suggests that the tendency to behave consistently is primarily the result of having to speak aloud to the influence agent one's agreement with the initial request, which likely prompts impression management concerns (e.g., participants may feel they cannot "let down" the requester when the target question is raised). According to Burger and Petty (1981), this sense of commitment is primarily felt toward the requester rather than the request itself, and thus the act of initial compliance in the lowball procedure may evoke effortful self-presentation vis-à-vis the influence agent. In this sense, the lowball

technique shares crucial characteristics with many other social influence techniques albeit stemming from a different source (i.e., through an unfulfilled obligation to the requester rather than commitment to the initial responses). The additional hypothesis underlying the current study is that the technique will be particularly effective among people low in self-control.

Third, we extended the previous results on volunteering behavior by focusing on another form of charitable behavior: actual money donated to a charitable cause. In this case, participants were not given money to donate (e.g., in the beginning of the study as the method of payment; see Vohs, Mead, and Goode [2006]), but instead participants in this study reached into their pocketbooks and donated, as they so desired, their own money to the charity presented to them.

### Design and Procedure

A total of 84 undergraduate students (45 female, 39 male, mean age 22.62 years,  $SD = 2.68$ ) participated in return for partial course credit in a study with one between-subjects factor (lowball vs. target-request only) and trait self-control as the second independent variable. All versions of the request started identically, with an introduction by the experimenter of the study and an outline of the various components. Participants next completed the brief version of the trait self-control scale developed by Tangney et al. (2004). This instrument consists of 13 statements that are rated on a 5-point scale (1 = not at all, 5 = very much). Sample items include, "I am good at resisting temptation," "People would say that I have iron self-discipline," and "I often act without thinking through all the consequences" (reversed). The reliability of the instrument was satisfactory ( $\alpha = .77$ ), and an index was created by averaging the scores on the items.

Following the self-control questionnaire, the influence technique was presented. In both conditions, participants were informed that the experimenter also worked as a fundraiser for a charity organization that provides toys, books, and financial resources to children in Eastern European countries (the Mother Teresa Foundation, see <http://www.moederteresa.com>). In the lowball condition, participants were asked whether they would be willing to donate money to the charity organization and that in return they would receive a small incentive (i.e., a coffee mug). After the initial agreement by the participant, a second female confederate posing as a research assistant interrupted the experimenter with information that there were no more mugs available (see Burger and Cornelius [2003] for a similar procedure). After the interruption, the lowball technique continued with the experimenter asking, "Would you still be willing to donate some money?" In the target-request-only condition, absent were the promise of an incentive, the act of asking for an initial response, and the interruption by the confederate. Instead, participants were simply asked whether they were willing to donate money to the Mother

Teresa Foundation, which was described in the same manner as in the lowball condition.

### Dependent Measure

Amount of participants' own money donated to the charity was the measure of compliance. After completion of the study, participants were fully debriefed, thanked, and dismissed. Please note that all payments received were in fact donated to the charity.

### Results and Discussion

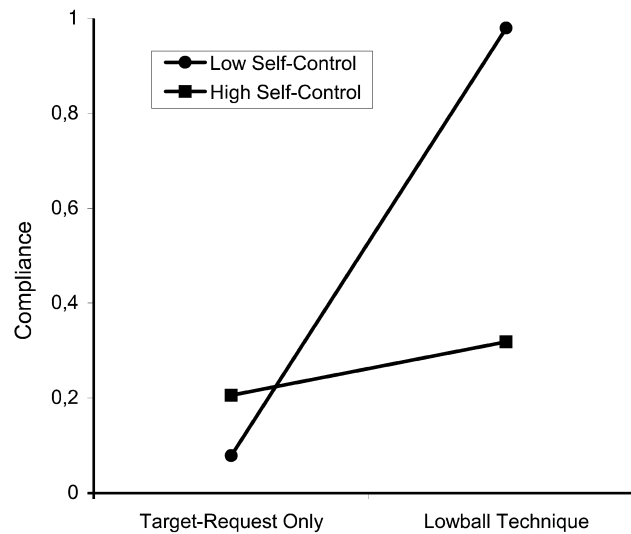
A multiple regression with amount of money donated as the criterion and type of influence technique (lowball vs. target request only, dummy coded), trait self-control (a continuous, centered predictor), and their interaction as predictors, revealed a significant interaction between type of influence technique and trait self-control ( $\beta = -.27$ ,  $t(80) = 2.02$ ,  $p < .05$ ). In line with hypothesis 2, a simple slopes analysis (Aiken and West 1991) revealed that the impact of influence technique on compliance was significant only among participants with low trait self-control ( $\beta = .50$ ,  $t(80) = 3.31$ ,  $p < .001$ ) and was not significant among participants with high self-control ( $\beta = .06$ ,  $t(80) = .42$ , NS; see fig. 3).

Type of influence technique also significantly predicted the amount of money donated ( $\beta = .28$ ,  $t(80) = 2.70$ ,  $p < .01$ ,  $d = .56$ ), such that participants exposed to the lowball technique donated significantly more money ( $M = .63$ ,  $SD = 1.15$ ) than participants in the target-request-only condition ( $M = .14$ ,  $SD = .48$ ), although the overall percentage of participants donating any money whatsoever was somewhat modest (27%). The main effect of trait self-control was not significant.

These results corroborate hypothesis 2, which states that lower levels of self-control foster compliance but only to the extent that the influence context harbors a powerful heuristic. In the present study, the heuristic principle was that of consistency, which underlies the lowball technique (Cialdini 1993). People with a lower tendency for self-control proved to be especially open to the technique, although the overall compliance percentage was lower than that found in experiments 4 and 5, probably because the present form of charitable behavior involved actual monetary donations from participants' own wallets, rather than the future acts of volunteering featured in experiments 4 and 5.

One comment pertains to the socially desirable nature of the effect, similar to the results of experiment 4 and 5, which refreshingly contrasts with the antisocial or egocentric behavior often documented in self-control studies (e.g., Finkel and Campbell 2001; Tangney et al. 2004). That is, the lowered self-control participants in experiments 4 and 5 and the trait low self-control participants in the current study acted more prosocially than their high self-control counterparts in that they were prepared to volunteer more time and actually donated more money to charity.

**FIGURE 3**  
 AVERAGE AMOUNT OF MONEY DONATED TO CHARITY AS A FUNCTION OF INFLUENCE TECHNIQUE AND TRAIT SELF-CONTROL, EXPERIMENT 6



## GENERAL DISCUSSION

The present research developed and tested a two-stage model to account for the role of consumer self-regulatory resource depletion in the effectiveness of sequential request scripts that are used by professional fundraisers and social marketers to elicit charitable behavior. The model holds that these social influence strategies comprise a series of requests that trigger one underlying process: self-regulatory resource depletion. The two-stage model posits that responding to an involving initial request (be that answering a series of cognitively demanding questions or questions that prompt self-presentational responses) reduces the supply of self-regulatory resources within the target. A reduced supply of regulatory resources, in turn, fosters compliance with the charitable request—but not by default. Rather, it is posed to do so through an overreliance on salient heuristics that facilitate compliance as an efficient behavioral response. Hence, responding in an effortful way to an initial request induces self-regulatory resource depletion, which subsequently encourages heuristic decision making. In dyadic influence settings aimed at fostering charitable giving, the product of this decision-making process is donating money, time, or effort.

The findings of six experiments, employing a total of 509 dyadic interactions, support the tenets outlined in this model. We found that responding to a series of questions (the typical first step in most multiple request strategies; see Burger 1999; Cialdini and Goldstein 2004) affected the degree of self-regulatory resource depletion. Moreover, the effects of yielding to this initial request were found both in the lab (experiment 1) and in the field (experiment 2) and were witnessed on the extent of counterargumentation (Wheeler

et al. 2007) as well as intelligent, logical thought (Schmeichel et al. 2003).

Based on earlier studies (see Burger 1999), it was predicted that these effects would be particularly salient when responses to the initial request required cognitively demanding answers or effortful self-presentation, both of which are known elicitors of self-regulatory resource depletion (Schmeichel et al. 2003; Vohs et al. 2005). This notion was put to the test directly in experiments 1 and 2 and two follow-up studies. The results from those studies allowed us to rule out several alternative explanations for the earlier findings, such as the potential confounding role of negative emotions, violations of the norm of reciprocity, the duration of the interaction between agent and target, or the simple act of an unanticipated conversation with an unacquainted person.

The present findings point to a previously unexplored “theater of operations” of principles involved in effortful self-regulation: that of dyadic social influence in the interest of charitable causes. Although the realm of interpersonal functioning has recently been addressed by self-regulatory resource depletion research (e.g., Vohs et al. 2005; Vohs and Finkel 2006), instrumental dyadic interactions in which one party (the agent) tries to tempt or persuade the other party (the target) into behaving in a specific manner (e.g., signing a petition, donating to charity, acting as a volunteer) have been neglected as a manifestation of self-regulation. This omission is striking when considering that effortful self-presentation (cf. Vohs et al. 2005), a process known to rely on self-regulatory resources, has been stressed as an important topic in dyadic influence settings. A close examination of this research reveals, however, a focus on regulation processes related to the influence agent, rather than

the target (e.g., Forgas 2007; McFarland, Challagalla, and Shervani 2006; Payan and McFarland 2005). Hence, the current work forges new ground by illuminating the role of self-regulation on the target's part of a potential influence interaction.

### Limitations and Future Directions

A potential limitation of our findings pertains to the fact that in our experiments, the target request followed the initial request after a few minutes (see experiments 1, 3, and 6), which leaves open the question of what would occur with a larger delay between initial and target request. We could expect the time delay to act as a buffer against the "hangover effect" produced by the depleting initial request. However, this need not necessarily result in reduced compliance with the target request, as studies by Freedman and Fraser (1966) and others (e.g., Pliner et al. 1974) have shown. In all likelihood, however, compliance in these conditions would be the product of mindfulness governed by more controlled self-regulation processes, rather than depletion-induced mindlessness. The role of self-regulation in mindful compliance constitutes a promising venue for future research. In line with the notions tested in the present work, we would hypothesize that mindful compliance (or resourceful compliance) becomes likely when the influence script includes strong, compelling issue-relevant information rather than the decisional heuristics featured in the present experiments.

As a sideline, one might wonder to what extent our studies reflect the "classic" manipulations of compliance gaining used by Freedman and Fraser (1966) and others (e.g., Pliner et al. 1974) in which participants were asked to agree with a small request before the larger target request was posed. At first glance, this procedure appears at odds with our work in which we focused on the extent to which initial agreement involved effortful responding. Yet at closer inspection, the procedures used in the seminal Freedman and Fraser (1966) study bear a striking resemblance to our compliance-gaining scripts. Moreover, a key driver in that research also proved to be the extent of performance of the initial request, rather than agreement per se.

In their first foot-in-the-door experiment, Freedman and Fraser (1966) approached households and before the larger target request was posed (i.e., a request to volunteer as a research participant in a large survey on household products), participants were asked whether they agreed to answer eight questions about the kinds of soaps they used. More important was that Freedman and Fraser (1966) also varied the extent of performance required with respect to the initial request. That is, participants either proceeded to actually answer the initial questions or only agreed to do so. In line with our findings, the results showed that compliance with the target request was higher when participants had actually performed the initial request (53%) rather than simply agreeing to do so (33%). Furthermore, meta-analytic findings also align with our main argument that it is not the act of initial agreement per se that is the decisive factor in producing

compliance but, rather, how much effort is required to accomplish the initial request (Burger 1999).

This issue highlights the robustness of the postulated underlying process across compliance-gaining situations. In the current work we could test only a selection of the variety of compliance-gaining techniques that have been reported in the literature. Therefore, other techniques (most notably those that do not involve a series of requests) may or may not work via the same mechanism as that which we revealed (i.e., self-regulatory resource depletion). We await further research to investigate whether other compliance-gaining techniques are effective because of self-regulatory resource depletion or other routes.

In addition, future research may explore boundary conditions to the present two-stage model. For example, research may assess the conditions under which self-regulation failure may hinder, rather than foster, compliance. One possibility may lie in the type of heuristic present in the influence context. In the current work, the heuristics uniformly pointed to compliance, but this need not necessarily be so. For instance, certain decisional heuristics, such as simple warnings of persuasive attempts (e.g., "Never trust a salesman with a slick suit") may well move the consumer away from compliance and, therefore, may foster resistance to the influence attempt. An additional venue might constitute addressing conditions under which responding to an initial request would not result in self-regulatory resource depletion but instead may "replenish" resources. One possibility might lie in an initial request that involves self-affirmation rather than active impression management (Steele 1988), a variable that curtails the adverse effects of repeated acts of active self-regulation (Schmeichel and Vohs 2008). These strands of research would aid in delineating when sequential request influence techniques drain or replenish the self and hence when they would increase or decrease compliance. Notwithstanding qualifying conditions, the bulk of compliance-gaining procedures as studied by academics as well as performed by fundraisers and social marketers involve techniques for which the proposed two-stage model will likely hold. Techniques such as the foot-in-the-door, that's-not-all, lowball, fear-then-relief, multiple de-escalation, bait-and-switch, disrupt-then-reframe, and door-in-the-face fall under the broad rubric of tactics to which our model applies.

Among these, the disrupt-then-reframe and the door-in-the-face techniques warrant special attention. Note that earlier we argued that research has shown that the disruption (the odd element) in the DTR results in reduced counter-argumentation, a possible consequence of reduced self-control (Wheeler et al. 2007). In light of the limited-resource model, this finding is of interest because it suggests the existence of additional sources of depletion in social influence settings. Note that self-regulatory resource depletion emerges as the product of an effortful process, when individuals actively override their initial responses, emotions, or thoughts. In case of the DTR it is not an intrapsychic but an extrapsychic source that is responsible for the effort required in overriding the initial response and may produce

the state of regulatory resource depletion: the disruption in the DTR. Recent research (Kardes et al. 2007) suggests that this disruption may be particularly burdensome for individuals high (as opposed to low) in the need for cognitive closure. Future research might profitably explore whether these individuals indeed experience higher levels of self-regulatory resource depletion than their low need for closure counterparts after responding to the disruption in the DTR.

Another venue of research might address the effectiveness of the door-in-the-face (DITF) technique from the limited-resource perspective. At first glance, one might argue that a DITF technique should deplete resources more so than should a foot-in-the-door script because the initial request is typically larger in a DITF. However, work by Tybout, Sternthal, and Calder (1983) suggests that the DITF is more effective when the magnitude of the initial request decreases rather than increases. Nevertheless, these results may well fit the limited-resource paradigm because note that the impact of the DITF hinges on the target's refusal of the initial request. This refusal may entail active self-regulation. That is, being counternormative in terms of politeness in interpersonal interactions, refusal responses typically induce social costs and hence may trigger active self-presentation concerns (e.g., avoiding embarrassment; Shoemaker, Eichholz, and Skewes 2002). Indeed, recent research (Flynn and Lake 2008) suggests that refusing a request often costs more than accommodating one, a fact that is often (and ironically) lost to the agent. We can easily imagine that having to refuse a more moderate, reasonable initial request is harder and requires more self-regulatory resources than refusing an absurdly large initial request, and that the former therefore prompts more effortful impression management concerns. As our results suggest, this type of refusal may promote a state of self-regulatory resource depletion, which would explain the relative effectiveness of the more moderate DITF, a hypothesis that awaits future testing.

The present research also provided evidence that self-regulatory resource depletion functions as a mediating variable between the response to the initial request and the response to the target request in sequential request techniques. This mediation also demonstrated that the two stages that constitute the model presented in this article are indeed linked by a single psychological process, that of active self-regulation.

In the present series of studies we presented evidence on the second part of our model, in which a state of self-regulatory resource depletion is said to induce compliance by fostering the use of heuristics. Using various manipulations to reduce self-regulatory resources, three studies showed that weak self-regulation can lead to charitable behavior in the presence of salient norms or heuristic principles that inform the weakened participant to do so. In addition, the convergence of findings between the laboratory and the field demonstrated that it is not merely a self-selection phenomenon that explains who becomes compliant (i.e., thoughts that only "those types" of people would fall for influence tactics). The field studies add to the generalizability of the laboratory

findings by showing that a community sample of consumers showed patterns of compliance comparable to those of our undergraduate student sample.

The effects of self-regulatory resource depletion on compliance with charitable requests are interesting from other perspectives as well. First, the compliance effects pertain to real, overt behavior, instead of self-reports. A recent analysis of research in social and personality psychology concluded that there is a dearth of behavioral research in the past 2 decades, most likely because behavioral studies are costly and difficult to pursue, particularly when one needs multiple studies to make one's point convincingly (Baumeister, Vohs, and Funder 2007). Next, it is crucial to highlight the fact that our results show that self-regulatory resource depletion can result in prosocial behavior. Our participants with low (temporary or chronic) self-control were prepared to act as volunteers, participate in future studies, work for professors, and donate real money to charity. Whereas previous work has suggested that resource depletion results in an enhanced tendency to serve the self (Finkel and Campbell 2001; Tangney et al. 2004), the present findings attest to the notion that depletion can also result in an enhanced tendency to serve others. We are indeed tempted to conclude that all is not lost for consumers who are low in self-control and that the principle of *quid pro quo* does not govern the behavior of resource-depleted consumers all of the time. However, as we have shown, self-regulatory resource depletion does not result in prosocial behavior per se but increases reliance on salient heuristics that are responsible for other-oriented behaviors. Self-regulatory resource-depleted participants in our studies helped the influence agent because the reciprocity, liking, or consistency principle prompted them to do so. Hence, we cautiously remind readers that it was less a matter of an intrinsic altruistic motivation that drove this behavior than an increased use of heuristics, which suggests that compliance in these social situations was the "easy way out" for resource-depleted consumers. Rather than maintaining a high level of resource-consuming resistance to the influence attempt, succumbing to the influence tactic and engaging in various acts of benevolence presented itself as an efficient behavioral option in the decision-making context insofar as it brought immediate relief from a potentially taxing interpersonal encounter. In this regard it is interesting to note that active responding to the initial request resulted in reduced performance and persistence on the tasks designed to assess self-regulatory resource depletion while simultaneously increasing the extent of compliance, measured by volunteering and donation behavior. In line with the efficiency notion, one might argue that the extent of current ability may have played a role, such that willingness to volunteer or donate money is a more energy-efficient type of behavior than performance on the depletion tasks. Alternatively, these findings may be attributable to the role that heuristics play as a basis for decision making for depleted individuals. That is, when the depletion task was administered, low self-control participants were not or not yet exposed to the decision heuristic, which may have had



an adverse influence on their performance on the depletion tasks. In contrast, when the heuristic was presented (preceding the target request), increased compliance resulted. Future research might address these issues more directly.

## Final Notes

It is natural to feel a strong pull to behave in accordance with someone else's wishes when that person is an intimate other but very little reason to do so otherwise, especially when there is no direct or immediate "return on investment," as is the case with charitable requests. Fundraisers, social marketers, and other influence agents have perfected the art of gaining compliance from consumers they have never met before and may well never encounter again. How they do it has been a decades-long mystery at which behavioral scientists have been cracking away. Being presented with a glib heuristic is becoming less effective, most likely because people's "schemer schemas" (Campbell and Kirmani 2008; Friestad and Wright 1994) have become finely attuned to such transparent ploys, even when used in the interest of the noblest of causes. Our research reveals that one key feature of effective influence tactics is the wearing down of self-regulatory resources that would otherwise be put toward resistance. Although far from solving the puzzle, it surely is advantageous in this era of influence attempts to have even one more piece put into place.

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