

STRAINING THE MENTAL MUSCLE: A RESOURCE DEPLETION ACCOUNT OF THE EFFECTIVENESS OF SOCIAL INFLUENCE TECHNIQUES

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ABSTRACT

Two studies examined the role of resource depletion in the effectiveness of social influence techniques in inducing consumer compliance. Many social influence techniques, like the Foot-in-the-Door technique, consist of multiple, sequential requests. We tested the two-step hypothesis that a) actively responding to a series of initial requests requires self-control, depleting one's limited resource of mental energy, and b) a state of resource depletion fosters the use of heuristics, when present in the persuasion context, which increases the odds of compliance with the target request of an influence technique. First, in a single-factor field study we confronted passers-by in a city centre with a series of initial requests and measured resource depletion. Participants confronted with the initial requests appeared to be more depleted than participants in a control condition, who did not receive the initial requests. Second, in a laboratory study we induced resource depletion and activated the heuristic principle of reciprocity, and measured whether participants complied with a request. Depleted participants showed more compliance than control participants, provided that the reciprocity principle was activated. Together these results provide initial support for our assumption that resource depletion is an important factor in explaining the effectiveness of many social influence techniques.

Key words: resource, depletion, social influence, foot-in-the-door, persuasion, consumer compliance

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1. Introduction

Why is it often so difficult to say “no” to fundraisers and sales representatives, when they ask us to donate money, to sign a petition, or to buy a product? In a host of these situations a social influence technique is being applied, a clever persuasion attempt to increase the chance that we comply with a request. The present research provides initial support for the assumption that *resource depletion* is an important factor in explaining the effectiveness of these social influence techniques.

Social influence techniques

A variety of persuasion strategies can be employed to get consumers to say “yes” to an offer they were not planning to yield to in advance. During the past four decades, a variety of influence techniques have been studied, including the Foot-in-the-Door technique (Freedman and Fraser, 1966) and the Door-in-the-Face technique (Cialdini et al., 1975). Like many influence strategies, these techniques confront people with one or multiple initial requests before the target request is presented. The Foot-in-the-Door technique first presents the consumer with a small request which is difficult to refuse, followed by a more substantial request. Imagine a fundraiser for example, who approaches you in the street and asks you whether you are willing to answer a few questions about the charity he is working for. After you answered these seemingly harmless questions, he asks you to support the charity by donating an amount of money. According to several studies (see Burger, 1999), the chance that you will donate money is now larger, than when the fundraiser had asked you for a donation right away.

The Door-in-the-Face technique is characterized by a large initial request which probably will be rejected, followed by a milder target request. Studies suggest that the chance that you will buy a single lottery ticket to support the local sports club substantially increases when you previously rejected the request to buy ten (see O’Keefe and Hale, 2001).

Automaticity

To explain the effectiveness of social influence techniques, persuasion research has increasingly emphasized processes that are subtle, indirect and outside of conscious awareness of the consumer.

More specifically, the notion of automaticity has been forwarded as the cornerstone of all influence (Cialdini and Goldstein, 2004). Instead of mindful awareness of the situation, people appear to respond ‘mindlessly’ when confronted with a social influence technique. Under these conditions of reduced mental alertness, people are thought to fall back on habit and routine and hence employ ‘shortcuts’ or simple heuristics to arrive at a decision. Use of these heuristics will generally increase the likelihood of compliance (Cialdini, 1993). As such, several studies on the Foot-in-the-Door technique have shown that employing the technique generally results in increased compliance, primarily because people want to behave consistently across situations (Burger, 1999). That is, compliance with the first, small request, such as answering a few questions about a charity, induces the self-perception that “one is the kind of person to comply with these kinds of requests”. This self-perception, functioning as a heuristic, increases the odds of compliance with the more substantial second request, like donating money to the charity in question. The Door-in-the-Face technique hinges on the heuristic principle of reciprocity: the ingrained motivation to return a favor (Gouldner, 1960). It is generally assumed that the technique works because the influence agent makes a clear concession by sizing down the initial request, which evokes the need for the consumer to make a concession in return and thus to comply with the milder request (Cialdini et al., 1975). When a request to buy ten lottery tickets is downsized to buying just one, it makes you feel obliged to buy that single ticket.

Resource depletion

Evidently, the principle of automaticity and the reliance on heuristics underlie the effectiveness of many social influence techniques. But where does this automaticity in these social influence situations stem from? What is it that makes people behave ‘automatically’, and do they indeed fall back on ingrained heuristics when presented with an influence technique under these circumstances? Although automaticity has been proposed as a requirement for the techniques to work, no study to date has directly addressed this key question. We argue that the origins of this automaticity, and thus the effectiveness of many social influence techniques, can be found in a characteristic that most techniques have in common: they consist of multiple,

sequential requests, and therefore the target consumer has to make several decisions before the target request is presented. We suggest that actively responding to one or more initial requests and making decisions regarding these requests requires self control and causes *resource depletion* (Baumeister, Bratslavsky, Muraven, and Tice, 1998; Muraven, Tice, and Baumeister, 1998; Vohs and Heatherton, 2000). Hence we propose that resource depletion is an important underlying factor that accounts for the automaticity, and thereby for the impact of many social influence techniques.

The core idea behind resource depletion (also termed ego depletion) is that self-regulatory processes, such as controlled processing, active choice and overriding responses, draw on a limited resource, akin to strength or energy. Therefore, one act of volition will have a detrimental impact on subsequent volition, which draws from the same resource. The active self can become depleted up to the point of self-regulatory failure (Baumeister et al., 1998). As a consequence, and comparable to muscle failure after straining, the self is less able to function effectively which results in reliance on habit, routine, and automatic processes (Baumeister, Muraven, and Tice, 2000).

Several studies have shown that performing a preliminary act of self-control undermines self-regulation on a subsequent, unrelated task. In a study of Muraven et al. (1998), participants who suppressed thoughts about a 'white bear', were subsequently more likely to give up on unsolvable anagrams than participants in control conditions. In experiments of Schmeichel, Vohs, and Baumeister (2003) participants showed poorer performance on a cognitive test when they had previously regulated their attention or suppressed their emotions during a video. Additionally, Vohs et al. (2007) demonstrated that participants who made a series of choices and decisions (e.g., regarding consumer products), showed poorer self-regulation as compared to people who viewed or rated similar options without making choices. An initial act of self-regulation also made people less inclined to make active responses and more prone to favor a passive response option (Baumeister et al., 1998). In sum, research demonstrates that capacities for self-regulation are limited. A series of self-regulatory acts depletes one's resource of mental energy, hence the self is less able to function effectively and will rely on habit, routine, and automatic processes (Baumeister et al., 2000).

2. The present research

From a limited-resource perspective, we suggest that actively responding to one or more initial requests of a social influence technique, and making decisions regarding these requests, requires self control and causes resource depletion. Second, we

argue that a state of resource depletion fosters the use of heuristics, when present in the persuasion context, which increases the odds of yielding to the target request of the influence technique. In the present research we tested this two-step hypothesis in two independent studies. In Study 1 we confronted people with a series of initial requests similar to the initial requests of a 'continuing question procedure', an influence technique akin to the Foot-in-the-Door technique (see Burger, 1999). We tested whether actively responding to these requests depletes individuals of mental resources. In Study 2 we tested whether induced resource depletion generates more compliance with a request, provided that a heuristic cue is present in the persuasion context.

Study 1

Method: Overview and participants. In this field study we confronted people with a series of initial requests and measured their degree of resource depletion. The study employed a single factor (initial requests: requests vs. no-requests) between-subjects design. Sixty people (30 men, 30 women) voluntarily participated in this study. Their age varied from 18 to 73 years ($M = 34.33$, $SD = 16.28$).

Manipulation. One of three confederates (one female, two male) randomly approached passers-by on a market square in the centre of a large town, with a request to participate in a short study. The confederates introduced themselves as health sciences students of the local university. They asked participants whether they were willing to answer a few questions about their health behavior and lifestyle, on behalf of a course project.

Participants were randomly assigned to the requests or no-requests condition. In the requests condition, the confederate presented participants with a series of initial requests, posed as 11 open-ended questions. These questions asked extensively about behaviors such as sports and exercising, smoking, use of alcohol, and eating habits. Examples of questions are "How much time do you monthly spend on sports and exercising?" and "Do you consciously pay attention to your eating habits?" Participants in the no-requests condition did not receive any initial requests.

Dependent measure: Next, we measured resource depletion with the State Ego Depletion Scale (Ciarocco, Twenge, Muraven, and Tice, under review). Participants in the requests-condition received a copy of this scale after answering the 11 open-ended questions, apparently as a part of the study about their health behavior. Participants in the no-requests condition received the scale immediately after the introduction of the confederate. On a seven-point scale (not true – very true) participants could indicate how much each of the 25 items of the State Ego Depletion Scale corresponded with their feelings

at that moment. Sample items include: “Right now, it would take a lot of effort for me to concentrate on something”, “I can’t absorb any more information”, and “I feel sharp and focused” (reverse scored; see Ciarocco et al. (under review) for a complete listing of the items). We used the average score on this scale as a measure of resource depletion ($\alpha = .90$). Finally, participants were debriefed, thanked, and dismissed.

Results and discussion: A t-test for independent samples revealed a main effect of initial requests, $t(58) = 2.25, p < .05$. Participants who had answered 11 open-ended questions about their health behavior and lifestyle scored higher on the State Ego Depletion Scale, and thus were more depleted ($M = 2.87, SD = 1.00$) than participants in the no-requests condition ($M = 2.39, SD = .60$), who had not answered any questions.

This effect supports the first part of our hypothesis, that being confronted with a series of initial requests causes resource depletion. Actively responding to multiple initial requests appears to be a cognitive activity that requires self-control and depletes our resource of ‘mental energy’. In the next study we tested the second part of our hypothesis: the notion that people comply with a request to a larger extent when this resource is depleted, provided that a heuristic is present in the persuasion context.

Study 2

Method: Overview and Participants: In this second, laboratory study we depleted people of their resources and measured their degree of compliance with a request, under conditions where the heuristic principle of reciprocity either was or was not made salient to them. The study employed a 2 (depletion-induction: depletion vs. no depletion) X 2 (heuristic-activation: reciprocity vs. control) between-subjects factorial design. A total of 108 students (66% female) served as participants in this study in exchange for course credit. Their mean age was 20.51 years ($SD = 2.02$).

Manipulations. Upon arrival at the laboratory, the female experimenter randomly assigned participants to one of the four conditions. Participants were told that the experiment consisted of several unrelated tasks.

Depletion-induction. We induced resource depletion with a self-control task adopted from Baumeister et al. (1998). All participants were given two typewritten sheets of paper with meaningless text on it (a page from an advanced statistics book with a highly technical style) and were instructed to cross off all instances of the letter “e” in the first text. In the second text, control participants were instructed to do the same, but depletion participants now had to apply multiple rules: “Cross off all instances of the letter “e” in the text, but only if the “e” is not adjacent to another vowel or one extra letter away

from another vowel”. Unlike participants in the control condition, depletion-participants had to override the response of just crossing out every “e”. Previous research has shown that regulating responses this way is resource depleting (Baumeister et al., 1998).

Heuristic-activation. After they finished the e-task, participants handed it over to the experimenter. The experimenter then manipulated the salience of the heuristic principle of reciprocity: she did participants in the reciprocity-condition a favor by telling them that she would make an exception by excusing them from the next part of the experiment, a mathematical test that former participants thought of as very dull and boring. Control-participants did not have to take this test either, for in reality there was no such test planned, but they were not told any of the above.

Dependent measure: Compliance. Next, the experimenter instructed participants to take a seat behind a computer for the last part of the experiment. After clicking a button, the following message appeared on the screen: “For next year, several researchers of the department of communication studies are looking for students, willing to voluntarily participate as an experimenter during experimental research. If we’d ask you this favor, how much time would you be willing to participate?”. Participants could answer this request on a scale ranging from zero to 240 minutes, with 30 minute intervals. The number of minutes they would be prepared to volunteer served as our measure of compliance (cf., Kardes, Fennis, Hirt, Tormala, and Bullington, in press). Afterwards, all participants were debriefed and thanked.

Results and discussion: An analysis of variance on the degree of compliance with the request, with depletion-induction (depletion vs. no depletion) and heuristic-activation (reciprocity vs. control) as independent variables, showed a main effect of both factors. Participants who were depleted of their resources by the difficult e-task were willing to spend more minutes voluntarily participating as an experimenter ($M = 64.90, SD = 53.51$) than participants in the control condition ($M = 42.20, SD = 39.04$), who made the non-depleting version of the e-task, $F(1,104) = 10.68, p < .01$. Participants also complied more to the request when the heuristic principle of reciprocity was made salient to them ($M = 62.94, SD = 52.74$), compared to control-participants ($M = 43.16, SD = 40.10$); $F(1,104) = 9.30, p < .01$.

Of main interest for our hypothesis is the fact that the interaction between depletion-induction and heuristic-activation was also significant ($F(1,104) = 10.22, p < .01$). Analysis of the simple main effects showed that participants in the depletion-condition complied with the request to a larger extent ($M =$

96.00, $SD = 52.05$) than participants in the control condition ($M = 41.61$, $SD = 41.48$), provided that the heuristic principle of reciprocity was made salient, $F(1,104) = 19.36$, $p < .001$. When the reciprocity-principle was not made salient, there was no significant difference in degree of compliance between participants in the depletion-condition ($M = 43.45$, $SD = 43.61$) and control-participants ($M = 42.86$, $SD = 36.90$), $F < 1$ (see Figure 1.)

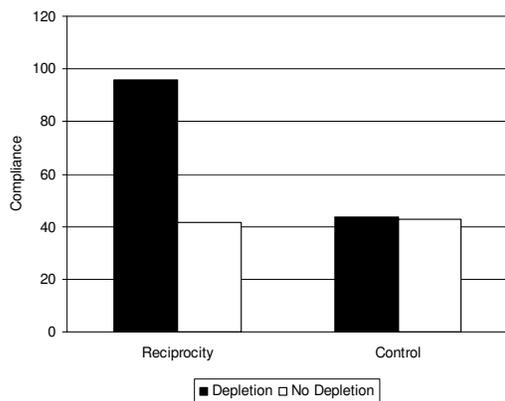


FIGURE 1: Average number of minutes one complied with the request to voluntarily participate as an experimenter, as a function of depletion-induction and heuristic-activation.

These results support the second part of our hypothesis that people comply with a request to a larger extent when they are resource depleted, provided that a heuristic is present in the persuasion context. Resource depletion appears to account for the use of the reciprocity heuristic when confronted with the request, which results in more compliance.

3. General Discussion

The results of the present studies provide initial support for our assumption that resource depletion is an important factor in explaining the effectiveness of many social influence techniques in inducing consumer compliance. The first study shows that being confronted with a series of initial requests causes resource depletion. The second study demonstrates that people, when they are depleted of their self-regulatory resources, comply with a request to a larger extent, provided that a heuristic is present in the persuasion context. Together these results support the assumption that resource depletion is a consequence of responding to initial requests, and fosters the use of heuristics, which increases the odds of compliance with a target request.

Since the two proposed steps in this process (initial requests cause resource depletion and resource depletion causes compliance) have been studied independently, future research will have to examine whether resource depletion actually mediates the effect of initial requests on compliance

with a target request. Therefore several different ‘sequential request’ techniques can be applied, to strengthen the assumption that resource depletion underlies the effectiveness of these techniques.

The present research is the first to show that responding to initial requests requires self-control, resulting in resource depletion. The results of Study 2 are in line with previous research in showing that people employ heuristics in social influence situations (Cialdini and Goldstein, 2004), although the role of resource depletion has not been studied before in this connection.

The present research confirms our assumption that resource depletion and the use of heuristics are important factors in the effectiveness of social influence techniques. Nevertheless, there are some limitations to take into account in future research. First, we assume that the complex e-task in Study 2 induced resource depletion, but the study provides no direct evidence. Although we lack a direct measure of depletion, our findings are in line with previous research of Baumeister et al. (1998). We replicated their procedure which has proven to be resource depleting. In future research we will address this process more directly.

A second remark also concerns Study 2. Since a possible mood-effect was not controlled for in this study, there could be an alternative explanation for the interaction-effect between depletion-induction and heuristic-activation: depleted participants complied to a larger degree with the target request than control participants, when the heuristic principle of reciprocity was activated. It is possible that we put depletion-participants in a positive mood when we told them that they were excused from doing the mathematical test. These participants had just completed the difficult e-task and were possibly more relieved when they did not have to do the boring math-test, and therefore happier than participants in the control condition, who completed the simple e-task. So possibly not resource depletion, but a positive mood state influenced the amount of compliance with the subsequent request. Since mood affects the way we process information (Bless, Bohner, Schwarz, and Strack, 1990), the reciprocity heuristic could have been more accessible for participants that were in a positive mood, who generally employ a more heuristic processing-style. Again, future research can provide more clarity.

Finally, it is interesting to consider how the results of the present research can be applied in practice. Sales representatives and fundraisers are probably more successful if they make use of initial requests to such an extent that consumers become deprived of their resources. In this state of mind the consumer will be more vulnerable for ‘tricks’, the heuristics that social influence techniques are built on. It is important for consumers to keep their wits about them; seeing through a persuasion attempt and responding in a mindful way will probably reduce or

undo the effect of resource depletion. Perhaps this will make it easier for us to say “no” to unwanted persuasion attempts, and “yes” when we have ascertained that the offer will benefit us.

References

- Baumeister Roy F., Bratslavsky Ellen, Muraven Mark, and Tice Dianne M. (1998), “Depletion: Is the active self a limited resource?”, *Journal of Personality and Social Psychology*, 74 (May): 1252-1265.
- Baumeister Roy F., Muraven Mark, and Tice Dianne M. (2000), “Ego depletion: A resource model of volition, self-regulation, and controlled processing”, *Social Cognition*, 18 (2): 130-150.
- Bless Herbert, Bohner Gerd, Schwarz Norbert, and Strack Fritz. (1990), “Mood and persuasion: A cognitive response analysis”, *Personality and Social Psychology Bulletin*, 16 (June): 331-345.
- Burger Jerry M. (1999), “The foot-in-the-door compliance procedure. A multiple-process analysis and review”, *Personality and Social Psychology Review*, 3 (4): 303-325.
- Cialdini Robert B. (1993), “Influence: Science and practice” (3rd ed.). New York, NY: Harper Collins.
- Cialdini Robert B., and Goldstein Noah J. (2004), “Social influence: Compliance and conformity”, *Annual Review of Psychology*, 55 (February): 591-621.
- Cialdini Robert B., Vincent Joyce E., Lewis Stephen K., Catalan José, Wheeler Diane, and Darby Betty Lee. (1975), “Reciprocal concessions procedure for inducing compliance: The door-in-the-face technique”, *Journal of Personality and Social Psychology*, 31 (2): 206-215.
- Ciarocco Natalie J., Twenge Jean M., Muraven Mark, and Tice Dianne M., “Measuring state self-control: Reliability, validity, and correlations with physical and psychological stress (under review).
- Freedman Jonathan L., and Fraser Scott C. (1966), “Compliance without pressure: The foot-in-the-door technique”, *Journal of Personality and Social Psychology*, 4 (August): 195-202.
- Gouldner Alvin W. (1960), “The norm of reciprocity: A preliminary statement”, *American Sociological Review*, 25 (April): 161-178.
- Kardes Frank R., Fennis Bob M., Hirt Edward R., Tormala Zakary L., and Bullington B. The role of the need for cognitive closure in the effectiveness of the disrupt-then-reframe influence technique. *Journal of Consumer Research* (in press).
- Muraven Mark, Tice Dianne M., and Baumeister Roy F. (1998), “Self-control as a limited resource. Regulatory depletion patterns”, *Journal of Personality and Social Psychology*, 74 (March): 774-789.
- O’Keefe Daniel J., and Hale Scott L. (2001), “An odds-ratio-based meta-analysis of research on the door-in-the-face influence strategy”, *Communication Reports*, 14 (1): 31-38.
- Schmeichel Brandon J., Vohs Kathleen D., and Baumeister Roy F. (2003), “Intellectual performance and ego depletion: Role of the self in logical reasoning and other information processing” *Journal of Personality and Social Psychology*, 85 (July): 33-46.
- Vohs Kathleen D., Baumeister Roy F., Twenge Jean M., Schmeichel Brandon J., Tice Dianne M., and Crocker Jennifer. (2007), “Decision-fatigue exhausts self-regulatory resources – But so does accommodating to unchosen alternatives”, *Journal of Personality and Social Psychology*.
- Vohs Kathleen D., and Heatherton Todd F. (2000), “Self-regulatory failure: A resource-depletion approach”, *Psychological Science*, 11 (May): 249-254.