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## Communicating eating-related rules. Suggestions are more effective than restrictions <sup>☆</sup>



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## ABSTRACT

**Background:** A common social influence technique for curbing unhealthy eating behavior is to communicate eating-related rules (e.g. 'you should not eat unhealthy food'). Previous research has shown that such restrictive rules sometimes backfire and actually increase unhealthy consumption. In the current studies, we aimed to investigate if a milder form of social influence, a suggested rule, is more successful in curbing intake of unhealthy food. We also investigated how both types of rules affected psychological reactance. **Method:** Students ( $N = 88$  in Study 1,  $N = 51$  in Study 2) completed a creativity task while a bowl of M&M's was within reach. Consumption was either explicitly forbidden (*restrictive rule*) or mildly discouraged (*suggested rule*). In the control condition, consumption was either explicitly allowed (Study 1) or M&M's were not provided (Study 2). Measures of reactance were assessed after the creativity task. Subsequently, a taste test was administered where all participants were allowed to consume M&M's. **Results:** Across both studies, consumption during the creativity task did not differ between the restrictive- and suggested-rule-conditions, indicating that both are equally successful in preventing initial consumption. Restrictive-rule-condition participants reported higher reactance and consumed more in the free-eating taste-test phase than suggested-rule-condition participants and control-group participants, indicating a negative after-effect of restriction. **Discussion:** Results show that there are more and less effective ways to communicate eating-related rules. A restrictive rule, as compared to a suggested rule, induced psychological reactance and led to greater unhealthy consumption when participants were allowed to eat freely. It is important to pay attention to the way in which eating-related rules are communicated.

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## Introduction

Recent figures show that a majority of adults in the US and at least half of the adults in Europe currently weigh too much (Doak, Wijnhoven, Schokker, Visscher, & Seidell, 2012; Flegal, Carroll, Kit, & Ogden, 2012). Given the serious adverse health consequences of being overweight (e.g. Kopelman, 2007), it becomes ever more necessary to curb unhealthy eating behavior. One way to do this is through the use of social influence techniques. One social influence technique, which is commonly used for example in public health campaigns, is to communicate behavioral rules or

standards that advise people what they ought to do (i.e., 'you should not eat unhealthy food'; we refer to this type of social influence as *restrictive rules*). While such restrictive rules would probably lead to lower body mass indexes if they were ubiquitous, possibilities for imposing them are, in reality, limited. Eating-related rules are usually in place only during a certain period of time, in a certain location, or are contingent upon supervision, meaning that many situations in which unhealthy food is accessible still exist. Restrictive rules may thus initially succeed in suppressing unhealthy consumption, but previous research has shown that they may cause people to rebound and behave against the rule once it is no longer in place or can no longer be enforced (Albaracin, Cohen, & Kumkale, 2003; Jansen, Mulken, Emond, & Jansen, 2008).

There are indications that a milder form of social influence, namely *suggesting not to eat unhealthily* (we refer to this type of social influence as *suggested rules*), may not suffer from negative after-effects on consumption (Mann & Ward, 2001). This may be the case because, while promoting the same behavior, a suggested rule merely provides a recommendation and leaves the choice up to the

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individual, whereas a restrictive rule proscribes behavior and interferes with an individual's sense of freedom of choice. This perceived restriction of freedom may induce a state of psychological arousal known as *reactance* and may cause people to restore their freedom by behaving against the behavioral rule. In the current study, we investigate if a milder form of social influence is indeed more successful in curbing unhealthy intake than outright restriction. We also investigate why this may be the case, using reactance theory as a theoretical framework.

### *Psychological reactance*

Psychological reactance theory (Brehm, 1966; Silvia, 2006; Wicklund, 1974) posits that attempts to persuade an individual or to steer an individual's behavior may come across to that person as a threat to his or her freedom of choice. For example, when the rule not to consume unhealthy food is imposed, people may consider this a limitation of their array of possible choices. As people have a strong basic need for self-determination and a preference to perceive themselves as being in charge of their own decisions and behavior (Deci & Ryan, 2000), threats to their freedom of choice will motivate them to restore their sense of freedom and self-determination. One way to restore freedom is to act against the rule as soon as this is possible (i.e., doing exactly that what has been proscribed; Brehm, 1966; Cleo & Wicklund, 1980). In other words, a well-intended restrictive rule – the rule is, after all, communicated with the intention of helping people eat more healthily – may thus ironically cause people to actually behave less in line with the desired behavior once it is no longer in place or can no longer be enforced.

Consider the implications for health-promotion campaigns: while possibly successful in suppressing unhealthy intake initially, restrictive rules may not constitute the best strategy for decreasing unhealthy eating behavior over time. An alternative strategy might be to use a milder type of social influence, namely to *suggest* not to eat certain foods. Although a suggested rule recommends the same behavior as a restrictive rule, the framing of the rule ('you ought to...' versus 'I suggest that you...') differs crucially. A restrictive rule, as described above, may threaten an individual's sense of self-determination. A suggested rule still discourages consumption of a certain food, but it leaves the ultimate decision about eating the food up to the individual. Accordingly, a suggested rule should leave an individual's sense of self-determination intact (Deci & Ryan, 2000; Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004). A suggested rule, therefore, should not arouse psychological reactance and should also not produce negative after-effects when the rule is no longer in place.

### *Framing eating-related rules: restriction versus suggestion*

Imposing restriction of consumption has indeed been shown to produce negative effects after the restrictive rule had been lifted. For example, children whose parents strongly restricted unhealthy food intake were found to consume more sweets when allowed to eat freely (Jansen, Mulken, & Jansen, 2007), and prohibiting consumption of sweets was found to increase children's intake of those sweets once consumption was allowed again (Jansen et al., 2008). Moreover, university students who were instructed not to eat a favorite food for 24 hours subsequently consumed more of this food in a free-eating taste test than did control participants who received no restrictive rule (Soetens, Braet, Van Vlierberghe, & Roets, 2008). Restricting undergraduates' carbohydrate or protein intake over a period of 3 days increased craving for the respective food and, for carbohydrates, also led to increased intake in a subsequent experimental session (Coelho, Polivy, & Herman, 2006). Restricting access to a favorite food increased children's positive

comments about and their requests for that food, and led to higher selection and consumption of it (Fisher & Birch, 1999). Taken together, these results indicate that, ironically enough, a restrictive rule may actually increase intake of food in situations where the rule is no longer in place or cannot be enforced.

Previous research also provides initial evidence that framing eating-related rules as suggestions rather than restrictions may indeed be a promising alternative strategy for promoting healthier eating behavior. In a set of two studies (Mann & Ward, 2001), college students were either prohibited from eating certain foods or encouraged not to eat them. This led participants in the prohibition group to desire the forbidden food more than a control group did, whereas participants in the encouragement group did not. These studies found no differences in actual consumption of the foods in a subsequent free-eating taste test. Another study in undergraduate students showed that label warnings of high-fat content in cream cheese led to higher intentions to taste the cream cheese than information labels simply informing of the high-fat content (Bushman, 1998). In other health-related domains, several studies have shown similar results. For example, university students reading a message that opposed the consumption of an alcohol-like product had higher intentions to consume that product than did participants reading a message that recommended moderation (Albarracín et al., 2003), and Grandpre, Alvaro, Burgoon, Miller, and Hall (2003) showed that high-school students reported a higher likelihood that they would try a cigarette after viewing an explicit (restrictive) anti-smoking message than after viewing an implicit (suggested) anti-smoking message (no difference was not found in younger children, probably because they are not yet so prone to reactance; cf. Rummel, Howard, Swinton, & Seymour, 2000).

### *Present research*

There are thus clear indications that restrictive rules may lead to unfavorable health outcomes once the rule is no longer in place, whereas suggested rules may be free of these negative after-effects. In the eating behavior domain, earlier research has demonstrated such negative effects on cognitive measures of craving and desire (Mann & Ward, 2001), but this research did not find behavioral effects. So far, we are aware of only one (as of yet unpublished) study (De Vet, Stok, & De Ridder, in preparation) that shows actual behavioral effects. Another issue that has not yet received much attention is whether both types of rules are equally successful in inducing *initial* non-consumption, that is, while the rule is in place. In order for a suggested rule to be a realistic alternative to restrictive rules, for example as a tool to be used in health-promoting interventions, it should be shown to be at least equally successful in suppressing initial intake. Furthermore, although previous studies have often referred to psychological reactance as a possible explanation for these differential effects (e.g. Grandpre et al., 2003; Mann & Ward, 2001), this idea has not yet been put to the empirical test.

The current research has three main aims. First, we aim to show that both restrictive and suggested rules are highly and equally successful in suppressing initial consumption. Second, we aim to show that a restrictive rule, as compared to a suggested rule, has negative behavioral after-effects, leading to increased consumption once the rule is no longer in place. We also aim to show that a suggested rule is free from such negative effects. Third, we aim to empirically test the assumption that reactance may play a role in this difference, by investigating whether reactance is higher in people who receive a restrictive rule than in people who receive a suggested rule.

Both studies included in this article consist of two phases. In the first phase, participants are exposed to M&M's but consumption is either not allowed (restrictive rule) or discouraged (suggested rule).

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