


# “Don’t Drink Too Much!” Reactance Among Young Men Following Health-Related Social Control

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## Abstract

This study investigated conditions under which young men responded with reactance to the suggestion to reduce their alcohol consumption. In an experimental study, 84 young men (university students, mean age: 24 years) listened to a recorded telephone call and were asked to imagine that they themselves were the recipients of this call. In this call, either a girlfriend or a male friend suggested that the recipient of the call should reduce his alcohol intake that evening. In one condition, the suggestion was highly restrictive; in the other condition, the suggestion was framed in a nonrestrictive way. Perceived threat, negative thoughts, and feelings of anger after listening to the call were assessed. Further outcome variables were intention and perceived probability of complying with the suggestion. Participants felt more anger after hearing the highly restrictive suggestion and more threatened by the suggestion made by the girlfriend. Interaction effects emerged. Participants reported more negative thoughts and lower intention and perceived probability to comply when a highly restrictive suggestion was made by the girlfriend. The male friend’s highly restrictive suggestion resulted in a perceived probability of complying (54%) that was similar to the probability of the girlfriend’s nonrestrictive suggestion (55%). Women’s efforts to reduce their male partners’ alcohol consumption can result in boomerang effects. Male peers might be more effective in motivating other men to behave in a healthier way. These results support recent findings with regard to the potential of peer positive social control.

## Keywords

Reactance, health-related suggestion, alcohol consumption, young men, social control, experimental study

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As men usually take less care of their health and engage in more risky behavior such as reckless driving, smoking, or binge drinking (Gough, 2013; Helgeson, 2012), women often feel responsible and attempt to control their partners’ health (Umberson, 1992). For example, non-smoking women seek information about how to quit smoking for their smoking partners (Zhu, Nguyen, Cummins, Wong, & Wightman, 2006), and women exert an important influence on men’s decisions to seek health care (Norcross, Ramirez, & Palinkas, 1996), to eat healthily (Allen, Griffith, & Gaines, 2013), or to screen for cancer (Meiser et al., 2007). Consistent with the nurturing caregiving role ascribed to women (Umberson, 1992; Westmaas, Wild, & Ferrence, 2002), women are often regarded as “principal brokers or arrangers of health care” (Norcross et al., 1996) or “health promotion agents” (Marcell, Howard, Plowden, & Watson, 2010) not only for their children but for their husband or partner as well.

In order to improve men’s health, an initiative of the German Society of Obstetrics and Gynecology (DGGG) explicitly addressed women as the primary “health managers” of the family (DGGG, 2010).

## Social Control and Health-Related Behavior

Initially, the attempts that individuals used to influence their partner’s health-related behavior—also called social control (Lewis & Rook, 1999)—were viewed predominantly under the focus of positive consequences. It has

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been assumed that social control in personal relationships may contribute to health by discouraging health-compromising behavior and promoting health-enhancing behavior (Lewis & Rook, 1999). Social control in social networks in order to influence health-related behavior is widespread: 86% of the participants (Californian residents, mean age: 45–54 years) in a study by Lewis and Rook (1999) reported experiencing social control from their social network members, 34% felt socially controlled by friends, 54% by family members, and 73% by their spouses. The types of behavior that were most often targeted were: smoke less or quit, exercise more, and drink less alcohol or quit drinking. A study with students (88% younger than 21 years) identified similar types of health behaviors that were targeted by dating partners: “exercising” (17%), “eating healthier” (16%), “smoking” (14%), “drinking” (13%) and “relaxing” (12%; Okun, Huff, August, & Rook, 2007).

But can social control also have detrimental or boomerang effects? Lewis and Rook (1999) had already demonstrated that social control can have dual effects: deterring unsound health practices but also adding to psychological distress. A longitudinal study of men with prostate cancer measured perceptions of wives' attempts to encourage appropriate health behavior (Helgeson, Novak, Lepore, & Eton, 2004). Social control by spouses was not effective in producing positive changes in health behavior. In fact, health-restorative and health-compromising social control attempts were associated with *poor* health behavior and greater psychological distress. Moreover, there was some evidence that social control undermined personal control beliefs over time (Helgeson et al., 2004). A study that investigated effects of negative social control (pressuring, rebuking, or inducing guilt) on physical activity in healthy couples reported that women and men showed less moderate to vigorous physical activity when their partners had provided them with more negative control (Hohl et al., 2018).

### *Psychological Reactance and Health-Related Behavior*

Trying to change someone's behavior for the better may imply restrictions to a person's freedom so that psychological reactance can arise. Psychological reactance is defined as a motivational state directed toward the reestablishment of whatever freedom had been threatened or eliminated (Brehm, 1966). One possible way of reestablishing freedom is by actually engaging in the behavior that was threatened. Thus, if a health-related suggestion is perceived as a threat to freedom by an individual, he or she might refuse to act accordingly and might even engage in the opposite behavior in order to reestablish his or her freedom.

Reactance has been identified as a core problem in attempts to promote health (Crossley, 2002) and some studies investigated health-related behavior focusing on reactance as a trait (Crossley, 2002; Orbell & Hagger, 2006). What is known about situational factors that lead to state reactance with regard to health-related behavior? Based on research that has investigated effects of written information (e.g., flyers or brochures), there is some empirical evidence that health-related appeals that are associated with a high threat to freedom can trigger reactance and result in counterproductive effects on behavioral intentions. Two studies have investigated the effects of high- versus low-threat messages that were given to students regarding alcohol consumption (Bensley & Wu, 1991; Dillard & Shen, 2005). High-threat messages regarding alcohol use resulted in higher anger and negative thoughts in one study (Dillard & Shen, 2005) and in higher drinking intentions in another study (Bensley & Wu, 1991).

What is known about possible reactance effects following interpersonal health-related suggestions? A study with 109 married couples that assessed reactions to spouse's social control attempts reported that the more frequently the agent used negative, direct, and unilateral social control tactics, the more reactance the target of the control attempt reported (Butterfield & Lewis, 2002). By testing hypotheses derived from different models of social control on health-related behavior, Okun et al. (2007) demonstrated that health-related social control evoked negative affective reactions (dual effect model), greater negative social control was related to greater negative affect (domain specific model) and negative affect partially mediated the effect of negative social control on hiding unhealthy behavior (mediational model) in collegiate dating couples. Since negative affect, especially anger, is a constituent of psychological reactance (Rains, 2013), these findings highlight the potential of (negative) social control in eliciting reactance. The differentiation between positive social control (e.g., positive reinforcement) and negative control (e.g., pressure) introduced by Okun and colleagues (Okun et al., 2007) helps to clarify inconsistencies in former research. As a short recent review by Hohl and colleagues outlines, “positive control was quite consistently related to better health behaviour ...; in contrast, negative control showed no or detrimental effects on health behaviour change ... As mediators of the latter association reactance and negative affect were investigated” (Hohl et al., 2018, p. 3).

Reactance was identified in several studies as a response to social control (Stephens, Rook, Franks, Khan, & Iida, 2010; Thorpe, Lewis, & Sterba, 2008; Ungar et al., 2016).

## Men as Targets of Health-Related Social Control

In addition to the findings from the study on prostate cancer patients (Helgeson et al., 2004), there is some indirect evidence that high pressure from a female partner might have unintended negative effects on the behavior of men. In a longitudinal study that assessed predictors of cancer screening in middle-aged men, a high subjective norm (i.e., high expectations from one's partner or family to attend a cancer screening examination) resulted in a lower probability of engaging in cancer screening in the following 12 months in the subgroup of irregular cancer screening attenders (Sieverding, Matteredne, & Ciccarello, 2010). In focus group discussions, men aged 45 to 65 years were asked by a male interviewer how they would react if their wife or female partner made a cancer screening appointment for them; clear reluctance and negative reactions emerged.

P.3: Then she should go!

Interviewer: But she signed you up!

P.4 (another participant of the same focus group): I do those things alone. I make my appointments myself.

Interviewer: So you would not go there?

P.4: I'd say—you go there—I did not make that appointment—hey, where do I live? (Sieverding, Matteredne, et al., 2010, p. 79)

These are anecdotal examples of how men have reacted to the health-related control attempts of their female partners and how the desire to regain threatened freedom can lead to boomerang effects in their behavior. A further issue that has emerged from these statements is the need to demonstrate one's independence from feminizing influences, a fundamental issue of the traditional male role (Brannon, 1976) or hegemonic masculinity (Courtenay, 2000). A study which investigated the effects of relatives' social support and social control in the context of cancer patients' exercise (Ungar et al., 2016) identified perceived control (but not perceived support) to be significantly correlated with reactance. Male cancer survivors were more prone to reactance than female cancer survivors.

The Precarious Manhood Model (Vandello & Bosson, 2013; Vandello, Bosson, Cohen, Burnaford, & Weaver, 2008) offers a theoretical framework that can help explain the reactions of men to social control attempts of their female partners or wives. In this model, manhood is defined as a precarious social status that is both difficult to achieve and tenuously held; therefore manhood must be earned and maintained through publicly verifiable actions. When their

status (as men) is threatened, "men will take measures (sometimes risky and/or aggressive) to demonstrate or re-establish their manhood" (Vandello & Bosson, 2013, p. 104). The authors of the Precarious Manhood Model investigated aggression (Bosson, Vandello, Burnaford, Weaver, & Wasti, 2009; Vandello et al., 2008) and taking financial risks (Weaver, Vandello, & Bosson, 2013) as potential risk behaviors as effective demonstrations of manhood. Binge drinking might be another risk behavior that is used to demonstrate that one is a "real man."

The current study focuses on reactions of male university students to interpersonal suggestions regarding their alcohol consumption. Heavy alcohol consumption or binge drinking is a risk behavior with a growing incidence reported in college-age men in recent years (Courtney & Polich, 2009). It is more prevalent among university students than among non-student peers (Courtney & Polich, 2009; Norman, Conner, & Stride, 2012) and in most countries much more prevalent among young men compared to women (Dantzer, Wardle, Fuller, Pampalone, & Steptoe, 2006; Park & Breland, 2007). In a German study, for an evening of socializing, male university students reported an average alcohol consumption that was twice as high as women's ( $M = 88$  g pure alcohol vs.  $M = 42$  g) and that clearly fulfilled the criterion of binge drinking (Zimmermann & Sieverding, 2010). (Heavy) alcohol consumption is traditionally viewed as symbolic of masculinity (De Visser, Smith, & McDonnell, 2009). Indeed, many young men think being able to drink excessively and to hold one's liquor are important "markers" of masculinity (De Visser & Smith, 2007).

## The Current Study

The goal of the current research was to find out how young men would respond when they received explicit advice from their girlfriend or a male friend to reduce their alcohol intake. Can such a suggestion elicit reactance instead of compliance, and if yes, under which conditions? The current research makes several novel contributions to previous research. First, the initial studies that investigated social control were cross-sectional (see for example Lewis & Rook, 1999). Later, longitudinal studies were conducted (like the study by Helgeson et al., 2004). What is still rare, are experimental studies in which factors that are regarded as relevant for the intention and behavior of the targeted individuals are manipulated (such as Schüz, Schüz, & Eid, 2013). One study manipulated the degree of restrictiveness of a health-related suggestion that is given by a social network member (Lewis & Butterfield, 2005). In this study, participants read scenarios in which a romantic partner tried to get the participant to stop smoking or to start exercising depending on which behavior the participant showed (smoking or being inactive) by exerting either negative or

positive social control. Positive social control tactics (e.g., stating importance) predicted more behavior change than did negative social control tactics (e.g., demanding change). However, the study failed to detect a relationship between positive/negative tactics and affect (Lewis & Butterfield, 2005). Apart from being introduced as a romantic partner, the person who exerted social control in the scenario was not manipulated. Thus, the current experimental study manipulated both the restrictiveness and the person who gives the health-related suggestion.

Second, in many studies, social control attempts and the reactions they elicit have been assessed retrospectively by self-reports of the targeted individuals rather than “live.” By using telephone sequences in which concrete social control attempts were given and the reactions to these suggestions were assessed immediately afterwards, the current study aimed to identify the first unfiltered emotional and cognitive reactions. Third, the current research investigated the effects of social control attempts that were targeted toward the behavior of young and healthy adults. The majority of existing research on social control has focused on the effects of social control attempts targeted toward people who suffer from an illness such as cancer (e.g., Helgeson et al., 2004; Ungar et al., 2016), diabetes (e.g., Rook, August, Stephens, & Franks, 2011), or HIV (e.g., Fekete, Geaghan, & Druley, 2009). The willingness to comply with health-related suggestions made by relationship partners may be higher in individuals who are motivated to cope with an illness and lower in individuals who feel healthy. The current research addressed the important question of which factors trigger reactance in relationship social control targeted at young healthy men. If research can determine which aspects of the person and/or the suggestion are relevant for eliciting reactance or the motivation to comply among young men, more adequate recommendations with regard to personal interventions that target the excessive drinking behavior of young men can be derived.

The current research was based on the assumption that both the restrictiveness of the suggestion and the person who gives the suggestion to reduce alcohol intake would have the potential to evoke reactance in young men. Highly restrictive suggestions should threaten the freedom of an individual more than nonrestrictive suggestions. A study investigating eating rules identified a negative aftereffect of restriction; participants who had received a restrictive rule reported higher reactance and consumed more unhealthy food compared to participants who had received a suggested rule (Stok, de Vet, de Wit, Renner, & de Ridder, 2015). With regard to restrictiveness, the following hypothesis is proposed:

**Hypothesis 1a:** *A highly restrictive suggestion regarding alcohol consumption leads to higher reactance*

*and lower intention to comply compared to a nonrestrictive suggestion.*

A further objective of the study was to explore cognitive and affective mediators of reactance following high-restrictive social control attempts, an issue that has been addressed in Rains (2013) meta-analysis on the psychology of reactance. The dual-process model of Rains (2013) suggests that the cognitive and affective indicators of reactance can be conceptualized as mediators. In a similar vein, Newsom and colleagues underlined the necessity to investigate the cognitive and emotional responses to social control and to explore their potential impact on behavioral intentions and health-related behavior (Newsom, Shaw, August, & Strath, 2018). Therefore, it was explored whether the expected effect of restrictiveness of the suggestion on the intention to comply would be mediated by (a combination of) negative thoughts and anger.

**Hypothesis 1b:** *Negative thoughts and anger mediate the effect of high restrictiveness on the intention to comply.*

A central part of the traditional male role or “hegemonic masculinity” is autonomy and the independence of women (Brannon, 1976; Courtenay, 2000), and from a precarious manhood perspective, it can be assumed that girlfriends create more threat for participants because they challenge the male as having power paradigm. This results in the following prediction:

**Hypothesis 2:** *Men display more reactance and a lower intention to comply to a suggestion given by a girlfriend than by a male friend.*

Finally, the last hypothesis concerns the interaction between the two factors:

**Hypothesis 3:** *Reactance arousal is highest in men who received a highly restrictive health-related suggestion from a girlfriend and lowest in those who received a nonrestrictive health-related suggestion from a male friend. The intention to comply is lowest in men who received a highly restrictive health-related suggestion from a girlfriend and highest in those who received a nonrestrictive health-related suggestion from a male friend.*

## Method

### Participants

Participants were 84 male university students at a large German University (Heidelberg University) with a mean age of  $M = 24.2$  years ( $SD = 3.5$ ) and a mean duration of study of  $M = 6.2$  semesters ( $SD = 4.3$ ).

About half ( $N = 43$ , 51.2%) of the participants studied humanities, 17 (20.2%) law, 7 (8.3%) medical sciences, 7 (8.3%) natural sciences, 2 (2.4%) other subjects, and 8 participants (9.5%) did not indicate their field of study. Approximately half of the participants were in a heterosexual romantic relationship ( $N = 45$ , 53.6%) with a mean duration of  $M = 1.5$  years ( $SD = 2.4$ ).

### Procedure

Male students who visited the university library were approached by two female students (N.S. & S.A.) in the entrance hall and invited to take part in a psychological study about communication, memory, and emotions. Interested men were told that the study would last about 10 min and were offered some sweets for their participation. Approximately 90% of all male library visitors could be approached of whom about 90% also agreed to participate. The experiment was conducted in a quiet room in the university library and had a 2 (caller)  $\times$  2 (restrictiveness of suggestion) between-subjects design. Participants who agreed to participate were given the first questionnaire of a pack of questionnaires that was randomly mixed. Each questionnaire was labeled with a code indicating one of the four experimental conditions. The codes were used by the experimenters to give the participants the telephone sequence that matched their condition.

The experiment began with the administration of a questionnaire to gather demographic data and psychological (masculine self-concept, masculinity ideology) control variables. Afterwards, participants were told to put on prepared headphones and to listen to one of four versions of a recorded telephone call lasting about 1 min. Participants were asked to imagine that they themselves were the addressees of the telephone call. After listening to the telephone call, they had to continue answering the questionnaire by stating their thoughts and feelings about the telephone call they had just heard. Then participants were asked some questions about the contents of the telephone call. The questionnaire continued with questions concerning participants' intention to act according to the suggestion they heard in the telephone call. Drinking habits were assessed at the end of the questionnaire to avoid confounding effects of participants' alcohol consumption and dependent measures. At the end of the questionnaire, participants were asked about their impression of the caller (perceived threat, likeability) and had the opportunity to leave comments about the experiment. After returning the questionnaires, the participants were thanked, debriefed, and dismissed. Neither in the comment section at the end of the questionnaire nor in the debriefing with the experimenters did the participants express any correct ideas about what the experiment aimed at.

### Ethical Statement

Participation was voluntary. Participants were informed that they could withdraw from the study at any point without repercussions. Participants were assured that their data would be treated anonymously and that their answers could not be linked to them. Participants were informed that they could always contact the PI at any time if they had questions about the study. Written informed consent was given by all participants. After participation, all participants were fully debriefed. An official ethical statement was not sought, as the Ethics Commission of the Faculty of Behavioural and Cultural Studies at Heidelberg University considers studies conducted by students as part of their degree program as exempt from ethical approval and expects the supervisors (in this case: the first author) of the students to control that the ethical guidelines are fulfilled. The data collection for the study presented in this manuscript stems from the Bachelor theses of N.S. and S.A. (second and third authors), and the supervisor of the study (M.S., first author) confirms that the study was conducted in line with the ethical guidelines set out by the German Psychological Society.

### Manipulation

Four different versions of the telephone call were created for the study; the versions differed in the *caller* (girlfriend vs. male friend) and the emphasized degree of *restriction* (nonrestrictive vs. highly restrictive). The two girlfriend versions were spoken by one female student, the two friend versions by one male student. Each participant was randomly assigned to one of the four between-subjects conditions: (a) girlfriend nonrestrictive, (b) girlfriend highly restrictive, (c) male friend nonrestrictive, and (d) male friend highly restrictive. All four telephone calls lasted about 1 min and included only the caller's part of the conversation (as if he or she had received answers from the participant). Each call began with some statements concerning the "participant's" plan to go to a pub that evening with his friends and about the school examinations that he would need to pass in the near future. Then the caller pointed out the negative consequences of drinking too heavily and reminded the "participant" that the last time he went to the pub, he had missed the train because he drank too much. The restriction manipulation was induced at the end of the call by making a suggestion to the "participant" to limit his alcohol intake associated with either a high or a low threat to freedom. In the highly restrictive condition, the caller made a concrete and specific suggestion and told the "participant": "Two beers are enough for you to drink tonight!" In the nonrestrictive condition, the caller advised "Perhaps you could try to watch your drinking tonight."

## Measures

**Control variables.** *Drinking habits* were assessed with the question: "How often do you drink alcohol?" The answering options were 1 = *daily*, 2 = *several times a week*, 3 = *once a week*, 4 = *less than once a week*, 5 = *less than once a month*, 6 = *never*.

*Likeability of the caller* was measured with the item: "How likeable did you find the person calling on a scale from 0 to 100?" (0 = *highly unlikeable* to 100 = *highly likeable*).

*Memory* was determined with five items concerning the contents of the telephone call. Each item contained three to four answer options of which the participants had to mark the right one. Memory achievement consisted of the total number of correct answers (with possible scores from 0 to 5 points). This task was part of the questionnaire to support the cover story that the study was on "Communication, Memory, and Emotions."

*A masculine gender role self-concept and masculinity ideology (toughness)* were assessed to control for their potentially moderating effects on reactions to a health-related suggestion. To assess a masculine gender role self-concept, the masculinity scale of the German short form of the Bem Sex Role Inventory (BSRI; Zimmermann, Sieverding, & Müller, 2011) which measures the self-description with instrumental/agentive personality traits, originally developed by Bem (1974), was used. People self-rate their endorsement of eight agentive attributes (e.g., "independent," "willing to take risks") on a scale from 1 (*never or almost never true*) to 7 (*always or almost always true*) (Cronbach's  $\alpha = .75$ ). Masculinity ideology was measured with the toughness norm scale of the German form of the Male Role Norms Scale (MRNS; Thomson & Pleck, 1986) in its German version (Thiele, 2004). Respondents state their agreement or disagreement with eight statements about men's expected behavior (e.g., "A real man enjoys a bit of danger now and then") from 1 (*totally disagree*) to 7 (*strongly agree*). The sum of the eight items represents an individual's endorsement of toughness as part of masculine ideology. The internal consistency was rather low, Cronbach's  $\alpha = .56$ , much lower compared to the respective score reported by Thiele (Cronbach's  $\alpha = .74$ , Thiele, 2004), but comparable to the findings of another German study which also reported a low internal consistency for the toughness scale of the MRNS (Cronbach's  $\alpha = .60$ ; Teuber, Thiele, & Eberhardt, 2006).

*Heterosexual relationship status* was assessed with the question "Do you have a female partner?" and the answering options "yes" and "no" as part of the demographic data assessment section.

**Manipulation check.** *Perceived threat to freedom* was assessed according to Dillard and Shen (2005) with four items (in contrast to their study, here, the items were framed

with regard to the person and not with regard to the message): "The person on the telephone tried to manipulate me," "The person on the telephone tried to pressure me," "The person on the telephone threatened my freedom to choose," and "The person on the telephone tried to make a decision for me" on a 7-point scale ranging from 1 (*totally disagree*) to 7 (*totally agree*). Cronbach's  $\alpha$  was .82.

**Indicators of reactance.** As in prior research (Dillard & Shen, 2005; Quick & Stephenson, 2007), the variables anger and negative thoughts were used as affective and cognitive indicators of reactance. *Negative thoughts* aroused by the telephone sequence were assessed directly after listening to the telephone call with the thought listing technique (Cacioppo, von Hippel, & Ernst, 1997; Dillard & Shen, 2005). The participants were given 90 s to write down all thoughts that they had during the telephone call. Afterwards, the participants had to classify their thoughts with the help of symbols: *positive thought* (+), *negative thought* (-), or *neutral thought* (0). In contrast to prior research (Dillard & Shen, 2005), all negative thoughts were used and not just negative thoughts regarding the contents of the message. The absolute number of negative thoughts was used as indicator for the cognitive component of state reactance. We additionally also calculated the relative number of negative thoughts (the proportion of negative thoughts of all uttered thoughts). Participants then responded to the task "Please state how you felt while listening to the telephone call" by using a 7-point scale ranging from 1 (*none of this feeling*) to 7 (*a great deal of this feeling*) for eight affective items assessing positive and negative affective states. The mean answer to the four items *irritated*, *angry*, *annoyed*, and *aggravated* (Dillard & Peck, 2001) was used as a reliable (Cronbach's  $\alpha = .84$ ) index of *anger*, the second affective reactance component.

*Behavioral Intention (I)* was measured by two items. *Intention to comply* was assessed by the item: "Would you—after receiving this telephone call—intend to act according to the given suggestion?" on a scale from 1 (*no, under no circumstances*) to 7 (*yes, on any account*). Additionally, *estimated probability (P)* to act (Sieverding, Decker, & Zimmermann, 2010; Sieverding, Mattered, et al., 2010) according to the caller's health-related suggestion was assessed by the question: "Intentions are not always translated into action. Therefore, we would like to know from you: How likely would you be (in percent from 0% to 100%) to act according to the suggestion regarding your alcohol consumption this evening?"

## Results

To analyze the effects of the caller (girlfriend vs. male friend) and the restrictiveness (highly restrictive vs. nonrestrictive) of the suggestion on the outcome variables,  $2 \times 2$

**Table 1.** Psychological Variables as a Function of Communicator's Person and Degree of Restrictiveness.

Variable	Girlfriend Nonrestrictive (n = 21)		Girlfriend Highly Restrictive (n = 22)		Male Friend Nonrestrictive (n = 21)		Male Friend Highly Restrictive (n = 20)		Restrictiveness		Caller		R × C	
	M	SD	M	SD	M	SD	M	SD	F	$\eta^2$	F	$\eta^2$	F	$\eta^2$
Perceived threat <sup>a</sup>	3.9	(1.3)	4.6 <sub>de</sub>	(1.3)	3.4 <sub>d</sub>	(1.6)	2.9 <sub>e</sub>	(1.2)	0.1	0.00	13.5 <sup>***</sup>	0.14	3.2	0.04
<i>Reactance variables</i>														
Negative thoughts (abs.)	1.9	(1.2)	2.7	(1.2)	2.2	(1.6)	1.7	1.0	0.3	0.00	1.2	0.01	5.9*	0.07
Negative thoughts (rel.)	0.4	(0.2)	0.6	(0.2)	0.5	(0.3)	0.5	(0.3)	0.3	0.04	1.2	0.02	2.4	0.03
Anger <sup>a</sup>	2.3	(1.2)	3.3 <sub>dx</sub>	(1.5)	2.32 <sub>dx</sub>	(1.1)	2.76	(1.4)	5.4*	0.06	1.4	0.02	1.10	0.01
<i>Intention variables</i>														
Intention <sup>a</sup> (I)	3.9	(1.6)	2.0 <sup>x</sup> <sub>x</sub>	(1.0)	3.4 <sub>fx</sub>	(2.1)	3.5 <sup>x</sup> <sub>e</sub>	(2.1)	5.3*	0.06	1.5	0.02	6.2*	0.07
Estimated probability <sup>b</sup> (P)	55.0 <sub>d</sub>	(28.4)	24.5 <sub>de</sub> <sup>de f</sup>	(24.3)	44.1	(30.6)	54.0 <sub>e</sub>	(31.0)	2.7	0.03	2.2	0.03	10.4 <sup>**</sup>	0.12
<i>Other variables</i>														
Memory <sup>c</sup>	4.9	(0.3)	4.5	(0.7)	4.6	(0.5)	4.4 <sub>d</sub>	(0.7)	5.5*	0.06	1.8	0.02	0.9	0.01
Likeability <sup>b</sup>	62.4	(22.8)	45.0	(29.3)	52.9	(25.8)	52.3	(27.0)	2.5	0.03	0.0	0.00	2.1	0.03

Note. Post hoc multiple comparisons by Tukey's HSD tests: means in a row sharing the same subscript differ significantly at  $p < .05$ ; dx:  $p < .07$ ; e<sup>x</sup>:  $p = .05$ ; f<sup>x</sup>:  $p < .07$ .

R = restrictiveness (non vs. highly), C = caller (girlfriend vs. male friend).

<sup>a</sup>Possible values from 1 to 7. <sup>b</sup>Possible values from 0 to 100. <sup>c</sup>Possible scores from 0 to 5.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

(caller  $\times$  restrictiveness) analyses of variances were conducted. Post hoc analyses were computed using Tukey's HSD tests to detect differences between the four conditions. Table 1 displays descriptive statistics for all variables as well as  $F$ -values, effect sizes, and post hoc results. All analyses were computed using SPSS (Version 22).

#### Control variables

**Likeability ratings.** There was no main effect of caller on aroused likeability ratings. The girlfriend and the male friend were not rated as differing in aroused likeability. There was also no main effect of restrictiveness or an interaction between caller and restrictiveness on the likeability ratings of the caller. The likeability ratings were in the middle of the scale with values between  $M = 45$  and  $M = 62$ , indicating that the callers were perceived as arousing average likeability.

**Drinking habits.** The majority of participants ( $N = 54$ , 64.3%) indicated they drink alcohol at least once a week (daily: 1.2%, several times a week: 29.8%, once a week: 33.3%). Only a minority of participants indicated they drink alcohol less than once a week (less than once a week:  $N = 20$ , 23.8%, less than once a month:  $N = 9$ , 10.7%), and only one man (1.2%) indicated that he never drinks alcohol. There was no difference between the four experimental conditions with regard to drinking habits,  $\chi^2(15, N = 84) = 14.78, p = .47$ .<sup>1</sup>

**Gender role self-concept and masculinity ideology.** There were no significant correlations between the masculinity (instrumentality) scale of the BSRI with the dependent variables anger, negative thoughts, behavioral intention, and perceived probability to comply (all  $ps > .39$ ). The instrumentality scale therefore was not included in the further analyses. Scores on the toughness scale were not significantly related to the dependent variables either (all  $ps > .23$ ). For that reason and because of the low reliability of the toughness scale of the MRNS (Cronbach's  $\alpha = .56$ ), this scale was not included in the further analyses as well.

**Relationship status.** Participants being in a heterosexual romantic relationship and participants having no romantic partner were equally represented in the four experimental conditions,  $\chi^2(3, N = 84) = 2.96, p = .39$ .

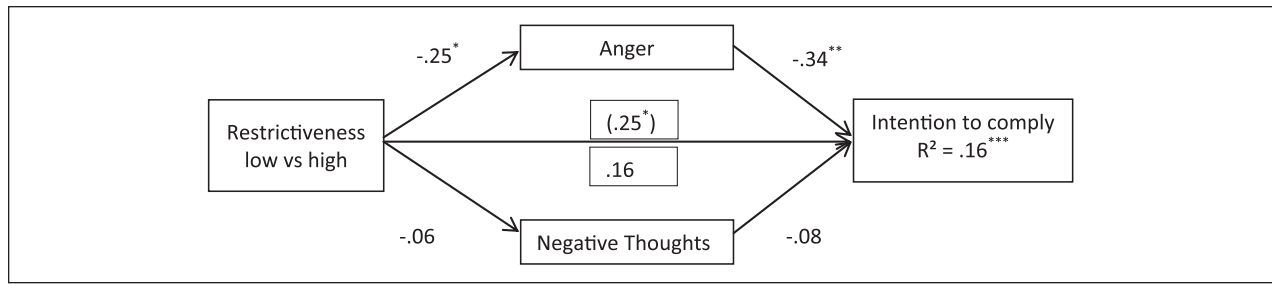
**Memory/recall of content.** Participants correctly recalled most of the contents that were asked about in five questions, indicating that they had listened carefully to the telephone call ( $M = 4.62, SD = 0.58$ ). An unanticipated main effect of restrictiveness was detected such that the participants recalled fewer details correctly in the highly restrictive conditions compared with the nonrestrictive conditions.

**Manipulation check: Perceived threat.** The main effect of the restrictiveness of the suggestion on perceived threat was not significant, indicating that participants did not (consciously) feel more threatened in the highly restrictive condition. However, a main effect ( $\eta^2 = .14$ ) of caller emerged such that participants felt that their freedom was more threatened by the girlfriend as the caller than by the male friend as the caller regardless of the suggestion the caller gave.

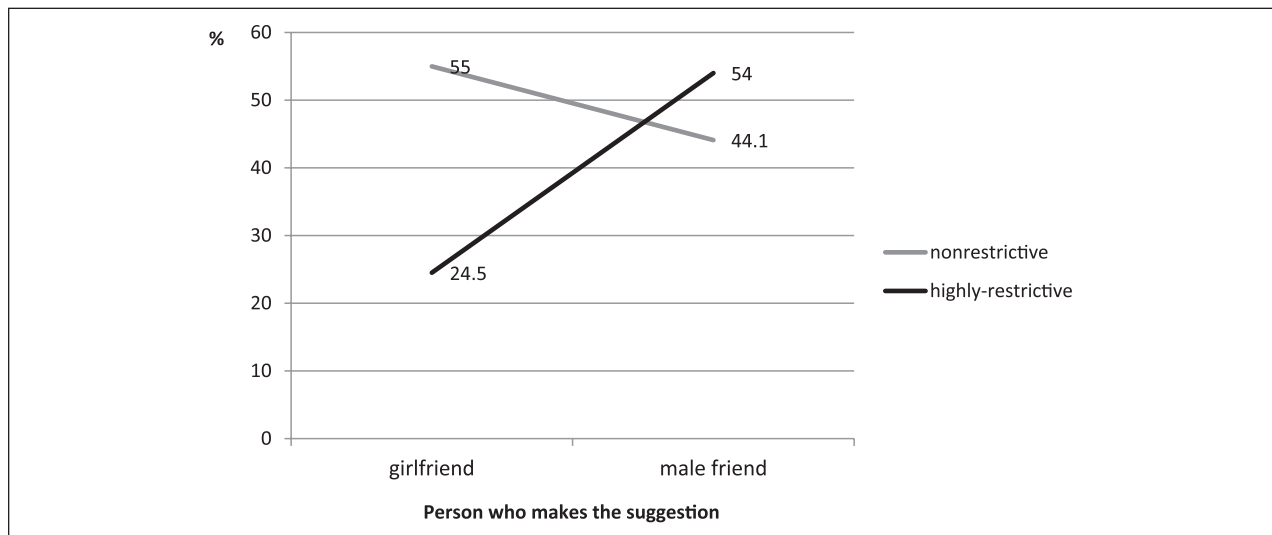
**H1a: Effects of restrictiveness.** Hypothesis 1a predicted that a highly restrictive suggestion regarding alcohol consumption leads to higher reactance and lower intention to comply compared to a nonrestrictive suggestion. A main effect of restrictiveness emerged for anger, thus supporting Hypothesis 1a (see Table 1). The highly restrictive suggestion regarding alcohol consumption led to higher feelings of anger compared to the nonrestrictive suggestion. The main effect of restrictiveness on negative thoughts was not significant. Another main effect of restrictiveness on intention to comply lends further support for Hypothesis 1a. The highly restrictive suggestion resulted in a significantly lower intention to comply in comparison with the nonrestrictive suggestion.

**H1b: Mediation analysis.** A mediation analysis was conducted to test whether the cognitive and affective indicators of reactance can be conceptualized as mediators as recommended in the dual-process model by Rains (2013). Due to the rather small sample size, it was not possible to use structure equation modeling to test for the intertwined model (Rains, 2013). Instead the INDIRECT macro for SPSS (version 4.1, using a 99% bias corrected bootstrap confidence interval and 5,000 bootstrap samples) provided by Preacher and Hayes (2008) was used to test whether the effect of restrictiveness on intention to comply is mediated by negative thoughts and/or anger. This multiple mediation was tested by evaluating the indirect and direct effects. The mediators were tested simultaneously to determine whether the mediation was independent of the effect of one of the other mediators and to reduce the likelihood of parameter bias due to omitted variables. All variables were standardized to attain a common metric. The total effect of restrictiveness on intention to comply—not accounting for any mediators—equaled  $b = 0.25, SE = .11, t(82) = 2.32, p < .05$ . This effect decreased to nonsignificance when negative thoughts and anger were entered into the model,  $b = 0.16, SE = .10, t(82) = 1.51, p = .13$ . The bootstrapped indirect effect of restrictiveness on intention to comply was significant,  $b = .09, SE = .04, BC\ CI [.015, .20]$ . Restrictiveness was significantly associated with anger,  $b = -.25, SE = .11, t(84) = -2.36, p < .05$ , and anger was significantly associated with intention to comply,  $b = -.34, SE = .11, t(82) = -3.10, p < .01$ . Restrictive-





**Figure 1.** Multiple mediation model showing the relation of restrictiveness on intention to comply ( $N = 84$ ).



**Figure 2.** Estimated probability (in percent) of acting in accordance with the suggestion as a function of the caller who made the suggestion and the restrictiveness of the suggestion.

ness was not significantly associated with (the absolute number of) negative thoughts,  $b = -.06$ ,  $SE = .11$ ,  $t(84) = -.58$ ,  $p = .56$ , and negative thoughts were not significantly associated with the intention to comply,  $b = -.08$ ,  $SE = .11$ ,  $t(82) = -.75$ ,  $p = .46$ . Of the two potential mediators examined, only anger qualified as mediator in the model; the specific indirect effect through anger was  $b = .09$ ,  $SE = .04$ , BC CI [.021, .19]. Overall, the mediator model accounted for 16% ( $R^2 = .19$ , adjusted  $R^2 = .16$ ) of the variance in intention to comply,  $F(3,80) = 6.34$ , ( $p < .001$ ; see Figure 1).<sup>2</sup>

**H2: Effects of caller.** Hypothesis 2 predicted that men display more reactance to the suggestion to reduce their alcohol intake given by a girlfriend than by a male friend. Neither the main effects of the caller on anger and negative thoughts nor on intention to comply were significant (see Table 1). Thus, Hypothesis 2 could not be supported.

**H3: Interaction effects between restrictiveness and caller.** Hypothesis 3 predicted that reactance arousal is highest

in men who received a highly restrictive health-related suggestion from a girlfriend and lowest in those who received a nonrestrictive health-related suggestion from a male friend. Partly in support of this hypothesis a significant effect was identified for the Caller  $\times$  Restrictiveness interaction on the number of (absolute) negative thoughts that were aroused by the telephone call. Out of the four possible conditions, the (absolute) number of negative thoughts was highest when a highly restrictive suggestion was made by the girlfriend and lowest when a highly restrictive suggestion was made by the male friend. (The respective interaction effect was not significant for the relative number of negative thoughts; see Table 1.) Another significant Caller  $\times$  Restrictiveness interaction emerged for intention to comply. This interaction was even more pronounced for estimated probability to act, the second intention measure ( $\eta^2 = 0.12$ ; see Figure 2). In the male friend condition, estimated probability did not differ significantly as a function of restrictiveness of the suggestion. In the girlfriend condition, however, restrictiveness of the suggestion made a large difference. When

the girlfriend gave the highly restrictive suggestion, participants gave much lower estimations of the probability that they themselves would act according to the advice (24.5%) than participants who listened to the telephone call in which the girlfriend gave the nonrestrictive suggestion (55.0%). Post hoc analyses revealed that the highly restrictive male friend condition and the nonrestrictive girlfriend condition did not differ, indicating that the highly restrictive suggestion given by the male friend was equally effective as the nonrestrictive suggestion given by the girlfriend.

## Discussion

The goal of this study was to investigate effects of social control attempts on the immediate feelings and cognitions of young men in an experimental study in which two factors were manipulated: the caller (girlfriend or male friend) who suggested that the target (i.e., the participant) reduce his alcohol consumption and the restrictiveness of the suggestion (highly restrictive vs. nonrestrictive). Specifically, the expectations were that feelings of anger and negative thoughts as indicators of reactance would be higher and the intention to comply with the suggestion would be lower when the suggestion was highly restrictive and when it was given by the girlfriend.

The results support evidence from studies that investigated the effects of written suggestions regarding alcohol consumption (Bensley & Wu, 1991; Dillard & Shen, 2005). Participants who listened to the highly restrictive suggestion at the end of the call responded with more anger and reported a lower intention to comply compared to participants who listened to the nonrestrictive suggestion. The mediation analysis identified anger (the affective indicator of reactance) but not negative thoughts (the cognitive indicator of reactance) as a mediator between restrictiveness and intention to comply. A highly restrictive recommendation led to higher anger and higher anger was associated with a lower intention to comply. This finding is in line with prior research that identified negative affect, especially anger, as a constituent of psychological reactance (Dillard & Shen, 2005; Quick & Stephenson, 2007; Rains, 2013). In support of the assumption derived from prior work on hegemonic masculinity (Brannon, 1976; Courtenay, 2000) and the Precarious Manhood Model (Vandello & Bosson, 2013), there was clear evidence that the person who gave the (same) advice also mattered. No main effect of the caller on the dependent variables emerged (except for the perceived threat variable), indicating that the suggestion given by the girlfriend did not per se elicit more reactance than the same suggestion given by a male friend. The findings rather support the third hypothesis that it is the combination of high restrictiveness and

the advising person (the girlfriend) that elicits reactance. When the highly restrictive suggestion was made by the girlfriend, participants had more negative thoughts, and their intention and estimated probability to act according to the suggestion was reduced compared to the condition in which the suggestion came from a male friend. There was an enormous gap between the highly restrictive suggestion and the nonrestrictive suggestion made by the girlfriend concerning the estimated probability to act according to the suggestion. In the first condition, the estimated probability was about 55%, but in the second, it was only 25%. As the same female student spoke both versions of the stimulus material and the contents of the telephone calls were identical up to the last part (the suggestion), other factors can be ruled out as being responsible for this difference. By contrast, the nonrestrictive and the highly restrictive suggestions made by the male friend did not lead to differences in the intention to comply. The same pattern emerged regarding the dependent variable negative thoughts. This is in accordance with the findings of Miller and colleagues (Miller, Lane, Deatrack, Young, & Potts, 2007) who did not find controlling language of a written health message advocating exercise to influence behavioral intentions negatively. These results support the prediction that the arousal of reactance depends on the interaction of two variables: the person who makes the suggestion and the implied degree of restrictiveness of the suggestion.

An unexpected effect of restrictiveness on memory was identified. Participants who listened to a highly restrictive telephone call remembered less of its contents than participants who listened to a nonrestrictive telephone call. This finding indicates a possible memory effect of reactance. To our knowledge, there are no studies concerned with the relation between the motivational state of reactance and its effects on memory. The current results suggest that it is not only the effort to reestablish a threatened freedom that is a consequence of the motivational state known as psychological reactance, but that it is also possible that this motivational state affects memory in a negative way, namely, by making people forget about (parts of) the contents of the message. This possibility is interesting because it offers an alternative explanation for the negative effects caused by restrictive demands. If a freedom-threatening demand affects memory, it is imaginable that the demanded behavior would not be shown merely because the individual is not able to remember the contents of the demand. Another idea is that forgetting about a freedom-restricting suggestion might be a mechanism used to restore one's own freedom unconsciously. These ideas merit further investigation.

Regarding the taxonomy of social control tactics (Butterfield & Lewis, 2002; Okun et al., 2007), the suggestions in both conditions were direct and unilateral. The nonrestrictive message used in this telephone call

can be categorized as a clear example of a positive social control tactic according to the definitions of Okun et al. (2007) and Lewis and Butterfield (2007), which reflects the use of persuasion, rational logic, modeling, and positive reinforcement. Negative social control tactics include pressure, rebuking, or inducing guilt (Hohl et al., 2018; Okun et al., 2007). The restrictive message used in this study with its imperative language can be regarded as a negative social control tactic. Thus, the results of this study support the findings from prior research that it is especially *negative* social control that can undermine health-enhancing behavior (e.g., Hohl et al., 2018; Lewis & Rook, 1999; Okun et al., 2007).

### Limitations and Strengths

The main effect of the degree of restrictiveness on perceived threat was expected to serve as a manipulation check (Dillard & Shen, 2005). The fact that it was not confirmed merits further explanation. Maybe the items (e.g., *The person on the telephone tried to manipulate me*) that were used in this study to assess the perceived threat of the suggestion focused too much on the person calling rather than on the actual features of the message. Indeed, the level of perceived threat depended on the person who gave the suggestion. Participants felt significantly more threatened by the girlfriend as the caller than by the male friend regardless of the suggestion the caller made. This result may be explained by the fact that male students are more likely to more often experience health-related control attempts by their girlfriends than by their male friends and that therefore the motivational state of feeling threatened was more easily evoked in the girlfriend condition (Chartrand, Dalton, & Fitzsimons, 2007). The current study did not assess the control attempts experienced by the participants. However, Umberson (1992) reported that women were more often named as control agents who try to control the health-related behavior of others.

Another limitation can be seen in the assessment of the intention variables in reference to the highly restrictive or nonrestrictive suggestion made in the respective telephone calls and thus differing in contents between conditions. One could argue that it is easier to “watch” one’s drinking (as suggested in the nonrestrictive condition) than to drink only “two beers” (as suggested in the highly restrictive condition), and this could be the reason that the intention scores were higher in the nonrestrictive conditions. An argument against this interpretation is the fact that participants in the male friend conditions did not differ with respect to both measures of intention (see Table 1). This means that when the male friend made the suggestion to drink only two glasses, the participants had on average the same intention to comply with this suggestion as when the male friend recommended that the participant just watch

his drinking. This may be an indicator that male friends who are important peers influencing drinking behavior among male students (e.g., Lau, Quadrel, & Hartman, 1990; Neighbors, Lee, Lewis, Fossos, & Larimer, 2007) may be more effective in motivating other men to reduce their alcohol consumption, or at least they may be more motivating than female partners.

Another limitation is the fact that actual behavior was not assessed, which should be done in future research on this topic. However, participants’ immediate affective and cognitive reactions were measured. Negative affect was identified in the dual effect model as a negative consequence of social control (Lewis & Rook, 1999). Furthermore, the mediational model postulated that negative affect mediates the relation of (negative) social control and (the hiding of) unhealthy behavior (Okun et al., 2007). The higher anger that was elicited in the highly restrictive condition might lead to higher rather than lower alcohol consumption later that evening. Also, the cognitions that were assessed, especially intention, are important predictors of behavior: A meta-analysis of meta-analyses of 420 studies indicated an average correlation of  $r = .48$  between behavioral intention and behavior (Conner & Sparks, 2005). In addition to intention, the estimated probability of the suggested behavior was assessed, a measure that has already been successfully used in prior studies (Sieverding, Decker, et al., 2010; Sieverding, Mattered, et al., 2010). The effect size of the interaction for this measure was even higher than for intention ( $\eta^2 = 0.12$  vs. 0.07). It may be that the *estimated probability* of performing a certain behavior is closer to reality than the *intention* to perform a certain behavior, a hypothesis that should be investigated in further research.

In this study, only two factors were manipulated: the person who made the suggestion and the degree of restriction. Although the analogue study provided greater experimental control, the fact that no actual persons (actual wives, girlfriends, and actual male friends) were included clearly limits the generalizability of the findings. Different categories of social control tactics, distinguishing between negative versus positive tactics, direct versus indirect and unilateral versus bilateral tactics (Butterfield & Lewis, 2002) were not addressed. For example, a study with 109 married couples reported that positive social control tactics (such as: “persuade” or “express positive emotions”) predicted health-enhancing behavioral reactions in their partners whereas the use of negative social control tactics (such as: “withdraw affection” or “try to make target feel guilty”) was not associated with health-enhancing behavioral reactions (Lewis & Butterfield, 2007).

Approximately half of the men in the study did not report being in a heterosexual relationship when they participated in the study. As the average age of the

participants was 24 years, one can assume that the large majority of the participating men did have experiences with heterosexual relationships. A recently published research report from the German Family panel (Melchior et al., 2018) which includes 12,000 men and women stated that at the age of 24 years 69% of East-German and 73% of West-German men have experienced at least one romantic relationship (not differentiated between heterosexual or homosexual relationships). However, the fact that (heterosexual) relationship history was not assessed is a limitation of the study. Relationship quality was not assessed as well, which has been identified as a relevant contextual factor that moderates the effects of social control (Okun et al., 2007). The fairly homogenous and small sample permitted the exclusion of numerous confounding variables, but future studies should examine also female students and the effects of female friends and boyfriends who make health-related suggestions. A study of British and Australian students revealed gender differences in the health resistance questionnaire, with men scoring higher on the subscales skepticism and freedom/resistance (Crossley, 2002). However, a study that investigated attempts at social control over smoking behavior reported that for men, the influence of social control by their partners appeared to positively affect their ability to reduce their smoking but were less effective for women (Westmaas et al., 2002). The current study also did not assess the sexual orientation of the participants, a limitation that should be addressed in further studies.

One strength of the current study is the fact that two factors of the social control situation were experimentally manipulated (i.e., the restrictiveness of the suggestion and the person who gave the suggestion), and the participants' immediate affective and cognitive responses to the suggestion to reduce their alcohol intake were assessed. This procedure allowed for the detection of two determinants of participants' reactance to health-related social control as well as their interactive effect. These results may help to explain the results of previous studies that women's attempts to influence their husbands' health-related behavior did not show the desired effects or even elicited reactance (Helgeson et al., 2004; Sieverding, Mattered, et al., 2010; Ungar et al., 2016). Moreover, the findings of this study are in line with recent research on potential positive influences of (male) peers on men's health behaviors. A Canadian study investigated effects of peer (friends and coworkers) positive social control in a cross-sectional survey (with 669 male workers) and qualitative interviews (with a subsample of 31 men). Quantitative results indicated that peer positive social control (e.g., encouraging them to modify unhealthy behaviors) was significantly associated with several health-promoting

behaviors like nutrition, physical activity, or stress management. Interview results revealed that peer positive social control influenced men's health behaviors through three different mechanisms: shared activity, being inspired, and serving as a positive role model for others. The authors conclude that friends and coworkers could play a significant role in promoting various health behaviors among adult men in their daily life (Houle et al., 2017).

### **Practical Implications**

Up to now, health interventions and campaigns that aim to improve men's health have often concentrated on wives and female partners as promoters of health behavior (Marcell et al., 2010; Norcross et al., 1996). There is some direct (Helgeson et al., 2004; Ungar et al., 2016) and indirect (Sieverding, Mattered, et al., 2010) evidence that such efforts can result in reactance and boomerang effects. Based on the finding that the suggestion to reduce one's alcohol intake aroused less reactance and a higher intention to comply when it was given by a male friend and based on current research on the positive effects of male peer social control (Houle et al., 2017), health campaigns may be more effective when they concentrate more on male peers as promoters of health-conscious behavior.

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### **Notes**

1. Additional analyses were conducted to examine whether the alcohol topic was not relevant for participants who rarely drink alcohol and their answers thus bias the results. Therefore, the 10 participants who indicated they never drank alcohol (one participant) or drank alcohol less than once a month (9 participants) were excluded and all analyses were rerun with the reduced sample again. The pattern of main results did not change.
2. A mediational analysis with the relative (instead of the absolute) number of negative thoughts revealed similar results.

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