

PEOPLE-PLEASING THROUGH EATING: SOCIOTROPY PREDICTS GREATER EATING IN RESPONSE TO PERCEIVED SOCIAL PRESSURE

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Do people sometimes eat in order to keep others comfortable? When people outperform others, they may experience concern or distress if they believe that their performance poses an interpersonal threat (Exline & Lobel, 1999). Two studies extend these outperformance ideas to eating situations among undergraduates. Our main hypothesis focused on the role of sociotropy, which involves preoccupation with pleasing others and maintaining social harmony. Sociotropy was associated with eating more candy, but only when participants believed that a peer wanted them to eat (Study 1). Under these conditions, sociotropy also predicted greater reports of trying to match the peer's eating and eating to make the peer feel comfortable (Study 1). Sociotropy also predicted more interpersonal concern and/or distress in these situations (Studies 1 and 2), which in turn predicted reports of giving in to social pressure by eating more (Study 2).

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Outperforming others can be a mixed experience. Those who outshine others, while often feeling proud or happy, can also experience discomfort if they believe that their higher status poses a threat to someone else (Exline & Lobel, 1999; Parrott & Rodriguez Mosquera, 2008; Zell & Exline, 2009). Recent studies have shown that a certain personality trait, sociotropy, is a robust predictor of social discomfort in response to outperforming others. Sociotropy involves people-pleasing and a heavy emphasis on maintaining harmonious relationships (e.g., Beck, Epstein, & Harrison, 1983; Robins et al., 1994). We conducted two studies to examine the link between sociotropy and responses to outperforming others in a specific domain: eating behavior. To the extent that overeating or eating unhealthy foods can be seen as self-control failures, those who exercise control over their eating may be seen as high performers in the arena of self-control. However, displays of successful self-control may pose a threat to others who are eating (or who want to eat). We predicted that high-sociotropy individuals would be more likely than others to experience interpersonal concern and distress in these situations, which in turn could motivate them to eat more to avoid alienating others.

CONCEPTUAL BACKGROUND

INTERPERSONAL FACETS OF EATING BEHAVIOR

A number of studies document ways that social factors shape eating behavior. One major review used a social norm perspective to integrate three divergent literatures on social influences on eating (Herman, Roth, & Polivy, 2003), while another suggested that people often eat more when they are with others than when alone; that is, a social facilitation effect (e.g., Clendenen, Herman, & Polivy, 1994; Patel & Schlundt, 2001; Redd & de Castro, 1992). Yet other studies show modeling or matching effects: people tend to eat more when their eating companions eat more and less when their eating companions eat less (e.g., Conger, Conger, Costanzo, Wright, & Matter, 1980; Goldman, Herman, & Polivy, 1991; Herman, Koenig-Nobert, Peterson, & Polivy, 2005; Hermans, Herman, Larsen, & Engels, 2010; Rosenthal & McSweeney, 1979). Another approach is that eating often involves impression management, especially in the form of suppressed eating when being observed (e.g., Conger et al., 1980;

Mori, Chaiken, & Pliner, 1987; Polivy, Herman, Hackett, & Kuleshnyk, 1986; Roth, Herman, Polivy, & Pliner, 2001; see also Vartarian, Herman, & Polivy, 2007). Herman and colleagues (2003) integrated these literatures by suggesting that social norms can either suppress or increase eating, depending on how much others eat and the impression that one wants to make on them. Although being observed might make people self-conscious about eating, seeing another person eating can provide a signal that it is acceptable to eat more. Thus, when others are eating (or eating heavily), a norm can be set that justifies similar behavior.

The two studies presented here were designed to complement this larger literature on normative eating by focusing on a specific subset of eating situations: those involving a perception of social pressure to eat. Our aim was to consider situations in which people eat in order to help others feel comfortable. Hypotheses for these studies were based on the sensitivity to being the target of a threatening upward comparison (STTUC) framework.

SENSITIVITY TO BEING THE TARGET OF A THREATENING UPWARD COMPARISON

Prior research has introduced the idea that outperforming others sometimes brings interpersonal strain. Exline and Lobel (1999) coined the term STTUC to refer to a state of discomfort that people experience when they: (a) see themselves as outperformers, (b) believe that the outperformed party feels threatened by the status difference, and (c) feel concerned about some aspect of the outperformed party's response. The resulting concern might take the form of empathy, or it could involve guilt or anxiety about the prospect of an awkward social encounter or relationship rift (e.g., Exline & Lobel, 2001; Exline, Zell, & Lobel, in press; Parrott & Rodriguez Mosquera, 2008). The concerns and negative emotions associated with STTUC tend to correlate with one another (e.g., Exline & Lobel, 2001; Koch & Metcalfe, 2011) and can occur alongside positive emotions such as pride and satisfaction (e.g., Exline & Zell, in press).

Studies have provided ample evidence that people can experience interpersonal concern and distress about outperforming others, as shown in workplace settings (Henagan, 2010; Henagan & Bedeian, 2009), student relationships (Exline, Single, Lobel, & Geyer, 2004), and close relationships (e.g., Beach et al., 1998). Methodologies

have included diary studies (Koch & Metcalfe, 2011), retrospective reports (e.g., Beach et al., 1998; Tal-Or, 2008), scenario designs (Exline & Lobel, 2001; Exline et al., 2004; Exline & Zell, in press; Tal-Or, 2008), and laboratory experiments (e.g., Exline et al., in press; Heatherington, Burns, & Gustafson, 1998; Juola-Exline, 1996; White, Sanbonmatsu, Croyle, & Smittipatana, 2002; for reviews of this literature, see Exline & Lobel, 1999; Parrott & Rodriguez Mosquera, 2008; Zell & Exline, 2009). People often take steps to avoid or minimize STTUC discomfort; for example, they may try to appease the outperformed person using tactics ranging from self-deprecating comments to generosity (e.g., Zell & Exline, 2010; see Zell & Exline, 2009, for a review).

The earliest studies of STTUC focused mainly on achievements in academic domains or other areas that intuitively lend themselves to social comparison (e.g., athletic achievement, winning awards). However, we reasoned that the STTUC framework could also apply to domains involving self-control. Accordingly, a new measure of emotional responses to outperforming others (Exline & Zell, in press) included several situations involving self-control, one of which involved eating (eating less popcorn than a friend during a movie). Emotional responses to this scenario loaded on the same factors as those involving outperformance in other domains such as academics, appearance, and athletics. Although preliminary, these scenario-based findings supported the idea that seeing someone else eating could create a sense of social pressure to eat. The STTUC framework suggests that a decision to not eat (or to eat lightly) could pose a social comparative threat to the person who clearly wants to eat. Concern or distress about posing such a threat could, in turn, prompt people to eat more.

EVIDENCE THAT NON-EATERS (OR LIGHT, HEALTHY EATERS) CAN POSE A THREAT TO OTHERS

Prior empirical work suggests that those who eat in light or healthy ways are viewed positively by others; for example, they are often seen as attractive, moral, and conscientious (e.g., Mooney, DeTore, & Malloy, 1994; Mooney & Lorenz, 1997; Stein & Nemeroff, 1995; see Vartarian et al., 2007, for a review). Yet some studies also support the idea that a person can pose an interpersonal threat by choosing not to eat or by eating in healthy ways. For example, in an ex-

periment on the effects of modeling on eating choices, De Luca and Spigelman (1979) found that obese participants ate substantially more when they were with an obese confederate as opposed to a non-obese confederate. In their discussion, the authors speculated: "Perhaps when the obese subject saw another obese person eating, she joined in her eating behavior to make the other person feel comfortable and to show her that she was not being discriminatory" (p. 128).

Vartarian and colleagues (2007) provide evidence that people who eat more (or who eat "bad" foods) might be seen as likeable. Mooney and Amico (2000) found that in comparison to a woman who ordered a "bad" meal (burger and fries), participants rated a woman who ordered a "good" meal (chicken sandwich and salad) as more moral—but they were less likely to want to socialize with her. Barker, Tandy, and Stookey (1999) found that those who ate low-fat diets were seen as attractive and intelligent, but they were also seen as serious, high-strung, unhappy, and—importantly for our purposes—antisocial. Similarly, Oakes and Slotterback (2004–2005) found that oatmeal eaters were seen as attractive, intelligent, responsible, and moral, but pie eaters were seen as more fun and humorous. Finally, Leone, Herman, and Pliner (2008) found that undergraduates (all women) liked confederates more if the confederates ate more (as opposed to less) than themselves. Consistent with a social norm interpretation (Herman et al., 2003), they also saw their own level of intake as more appropriate if the confederates ate more than them (as opposed to less). This pattern was not seen for noneating observers.

Taken together, these studies provide some evidence that people who eat relatively heavily (in terms of quantity or types of food) are doing something that can make others feel comfortable. Undereaters—or those who make very healthy choices—may win respect by being seen as attractive and moral, but they may also pose a social comparative threat by outshining others in the self-control domain; thus, they may not seem as fun or likeable as those whose heavier eating prevents them from posing a similar threat.

We built on this work by focusing on the perspective of the potential "outperformer" (in self-control terms)—a person who has to decide how much to eat when interacting with someone who is already eating high calorie or unhealthy foods. We proposed that if people are concerned about posing a threat to someone who is eating (or eating heavily), they may eat more than they would have

otherwise chosen, perhaps trying to match the other person's level of eating. In other words, even though it is common for people to match the eating behavior of others (Herman et al., 2003), STTUC-related concerns could intensify that desire. In interpersonal terms, the goal of eating more (or trying to match another's eating behavior) in such cases would be to keep the other person comfortable. This relatively unstudied angle—eating more in order to make a good impression—was identified as an important area for future work by Herman and colleagues (2003) in the closing section of their review.

SOCIOTROPY: AN IMPORTANT PREDICTOR OF BOTH STTUC DISCOMFORT AND EATING BEHAVIOR

For this study, we focused on an individual-difference factor that has shown important links with both STTUC discomfort and eating behavior: sociotropy. The construct of sociotropy involves excessive concern with pleasing others, winning approval, and maintaining smooth and harmonious relationships (e.g., Beck et al., 1983; Robins et al., 1994). People who score high on sociotropy tend to be easily persuaded by others and often experience excessive distress around relationship conflict or dissolution. The sociotropy construct has its roots in the depression literature (Beck et al., 1983), and measures of sociotropy do indeed predict depressive symptoms (e.g., Bagby et al., 2001; Robins et al., 1994; Sato & McCann, 1997). In terms of the Big Five factors of personality (e.g., John, Donahue, & Kentle, 1991), sociotropy has been shown to correlate with both neuroticism and agreeableness (Bagby et al., 2001). Although consistent gender differences have not been found, some studies show subtle effects in which women score slightly higher on sociotropy than men (e.g., Robins et al., 1994).

In prior work, sociotropy has emerged as a robust predictor of STTUC discomfort. For example, sociotropy has been linked with greater interpersonal concern in response to laboratory-based outperformance (Juola-Exline, 1996), outperformance in naturalistic contexts (Exline & Zell, in press), and a hypothetical situation involving outshining peers in a classroom setting (Exline & Lobel, 2001, Study 2). Furthermore, sociotropy has been shown to be a strong, consistent predictor of distress in response to a scenario-based outperformance measure (Exline & Zell, in press). Impor-

tantly, this link was found even when controlling for factors such as depression, self-esteem, and the Big Five factors of personality.

Our aim here was to examine sociotropy as a potential predictor of STTUC responses to outperformance on a different domain: eating behavior. There is an empirical precedent for linking sociotropy with eating, although the main emphasis has been on eating disorders. For example, sociotropy has been associated with bulimic symptoms (e.g., Duemm, Adams, & Keating, 2003; Friedman & Whisman, 1998; Havaki, Friedman, Whisman, Delinsky, & Brownell, 2003; Narduzzi & Jackson, 2002), weight preoccupation (e.g., Oates-Johnson & DeCourville, 1999), and eating disorders more generally (e.g., Krause, Robins, & Lynch, 2000; McKiernan, 2005; Narduzzi & Jackson, 2000).

In contrast, we wanted to consider everyday contexts (not limited to those involving diagnosable eating disorders) in which social encounters could create perceived pressure to eat. We proposed that in cases involving some perceived pressure to eat, sociotropy would be associated with more concern about posing an interpersonal threat. This greater concern, in turn, should predict more eating. Because sociotropy is associated with concerns about social approval and harmony, the aim would be to fit in. We thus reasoned that trying to match what another person is eating, although common among people in general (Herman et al., 2003), should be an especially desirable goal for those high in sociotropy—particularly when they perceive some social pressure to eat. Under such conditions, matching would allow a high-sociotropy person to win approval by eating just the right amount: not too little (which could pose a threat) but not too much (which could trigger negative impressions or judgments).

THE CURRENT PROJECT

Drawing from the STTUC framework (Exline & Lobel, 1999), we proposed that in situations involving some social pressure to eat, sociotropy would be associated with more interpersonal concern about posing a threat, more desire to match what another person is eating, and higher levels of eating. We addressed these ideas in two studies. Study 1 was a controlled laboratory study involving the temptation to eat candy. Study 2 examined reports of naturalistic eating situations, those in which participants were with someone

who wanted them to eat (usually in the form of overeating, eating junk food, or eating something they did not want).

Study 1: A Laboratory Situation in Which a Confederate Ate Candy

Study 1 used a laboratory-based design with a confederate who took some candy from a bowl. The primary prediction was that sociotropy would be linked with eating more candy, but only if participants thought that the confederate wanted them to eat. We also proposed that sociotropy would correlate positively with reports of trying to match what the peer was eating, more interpersonal concern, and reports of eating to keep the peer comfortable; however, we expected these associations to emerge most clearly among participants who believed that the peer wanted them to eat.

METHOD

PARTICIPANTS

Participants were 109 undergraduates (41 men, 60 women) taking a general psychology class at a private university in Ohio. All received partial course credit for participation. Mean age was 18.6 years ($SD = 0.9$). Ethnicities included Caucasian/white (67%), Asian (27%), Middle Eastern (5%), African American/black (4%), Latino/Hispanic (1%), and Native American (1%).

PROCEDURE

Participants came to the first author's laboratory. They met the female confederate,¹ who was ostensibly another participant. The study was described as being an examination of attitudes about interpersonal situations. Participants completed a background survey including demographics and sociotropy. After collecting these measures, the experimenter reported she that must leave to get some materials. She offered a bowl of chocolate (M&M's®) candies to the confederate, who was seated nearest the door. The confederate

1. Gender was not a primary focus of this project. Although we wanted to include male participants, we decided to use the same female confederate for the entire study because of concerns about creating excess complexity centered on gender dynamics.

ate took a handful of candies from the bowl and passed the bowl to the participant, saying, "Would you like some?"² The experimenter returned with the post-experiment survey. A full debriefing followed.

MEASURES

Sociotropy. Before meeting the confederate, participants completed the 48-item Personal Style Inventory II (Robins et al., 1994). Half of the items assess sociotropy; the others assess autonomy, which is not of direct interest here. Items are rated from 1 (*strongly disagree*) to 6 (*strongly agree*). Samples include "I feel I have to be nice to other people" and "It is hard for me to say no to other people's requests." The measure is scored by summing, $M = 92.6$, $SD = 14.0$.

Amount of Candy Eaten. The number of candies taken by the participant was recorded, based on the total candies in the bowl minus the number taken by the confederate. On average, the confederate took 5.1 candies ($SD = 1.7$), and participants took 4.2 candies ($SD = 3.8$). Positive skew on both variables (confederate, 1.4; participants, 1.1) was reduced via square-root transformations (confederate: 0.8; participants: 0.6). Analyses used the transformed variables.

Candy Estimates. The follow-up survey asked participants to estimate how many candies they took ($M = 5.2$, $SD = 2.9$). They also reported whether the other person took any candies and, if so, how many ($M = 5.1$, $SD = 1.9$).

Trying to Eat Less, Same, or More in Comparison to Peer. Participants rated from 0 (*not at all*) to 10 (*extremely*) the extent to which they tried to take less, the same, or more candy than the peer. Participants were more likely to report trying to eat the same amount as the peer ($M = 1.7$, $SD = 3.0$) as opposed to less ($M = 0.8$, $SD = 2.0$, $t(99) = 3.57$, $p = .001$) or more ($M = 0.4$, $SD = 1.2$, $t(100) = 4.67$, $p < .001$).

2. In one condition the confederate added, "Otherwise I'll just end up eating them all myself," with the expectation that this comment would increase perceived social pressure. However, this manipulation was weak. For example, on the manipulation check item of whether participants believed that the other person wanted them to eat, those who heard this comment ($M = 0.9$, $SD = 1.2$) did not differ significantly from those who did not ($M = 0.7$, $SD = 1.2$), $t(99) = 0.57$, $p = .57$. This variable is thus not mentioned further.

Interpersonal Concern. Participants read, "In this situation, to what extent were you..." followed by three items rated from 0 (*not at all*) to 10 (*extremely*): concerned about how the other person felt toward you; concerned about how s/he would feel about how much candy s/he ate; concerned about how s/he would feel about how much candy *you* ate ($M = 2.0, SD = 2.4, \alpha = .86$).

Perceived Preferences of Peer. Participants read, "I think that the other person probably:" followed by a scale from -5 (*did not want me to take any candy*) to $+5$ (*wanted me to take some candy*), with 0 labeled "did not care if I took any candy." On average, participants reported that the peer had a mild preference for them to take candy ($M = 0.8, SD = 1.2$). Yet the mode ($n = 61$) was 0, indicating that many participants believed that the peer did not care whether they took candy. A slight skew (1.1) was addressed by dichotomizing the variable, since our interest was in the simple question of whether participants believed the peer wanted them to eat (or not).

Eating to Make Peer Feel Comfortable. Participants read, "Overall, would you say that your decision about how much to eat was based (at least partly) on an attempt to make the other person feel comfortable?" Responses were rated as *yes* (66%) or *no* (34%).

Hunger. Participants rated from 0 (*not at all*) to 10 (*extremely*) how hungry they were at the start of the study ($M = 4.3, SD = 3.6$).

RESULTS AND DISCUSSION

MANIPULATION CHECKS AND SUSPICION

Participants were included in all analyses regardless of whether they took candy. However, we removed three participants for logistical reasons. In one case, the confederate was seated in the chair farther away from the experimenter, making it unnatural to hand her the bowl of candy. Another participant reported suspicion during debriefing, and one had heard about the study before. Of the 106 remaining participants, 81 took candy. Participants ate all candy that they took and were 100% accurate in reporting whether or not they had taken candy. Those who took candy were quite accurate in recalling how many candies they took: the modal response was an exactly correct report of how many candies one had taken ($n = 30, 39\%$), and 84% gave estimates that were ± 2 from the actual

quantity taken. On the item asking whether the peer had taken candy, one participant said no and four participants said that they did not know. To err on the conservative side, these participants were dropped from the sample. Note, however, that results were similar regardless of whether these participants were included.

SOCIOTROPY AND EATING CHOICES

There was a marginal positive correlation between sociotropy and a desire to eat the same amount as the peer, $r(101) = .18, p = .07$. Sociotropy also predicted marginally greater reports of basing one's eating decision on an attempt to make the peer comfortable, $r(100) = .19, p = .06$. We predicted that the link between sociotropy and eating-related motives and behaviors would be especially clear when participants believed that the peer wanted them to eat. We tested this hypothesis using four criterion variables: (a) the actual quantity of candies taken (controlling for hunger and how many candies the confederate took), (b) reports of interpersonal concern, (c) self-reported desire to eat the same amount as the peer, and (d) reports of whether one's eating decision was based on a desire to keep the peer comfortable. In each case, we predicted an interaction between sociotropy and whether participants believed the peer wanted them to eat.

As shown in Table 1, the predicted interaction did emerge on all four criterion variables, although one of the interactions (interpersonal concern) reached only marginal significance ($p = .05$). Specifically, among participants who believed that the peer wanted them to eat, sociotropy predicted: (a) more candies taken [bivariate: $r(38) = .47, p < .01$; when controlling for hunger and how much the peer ate, $pr(34) = .44, p < .01$], (b) greater desire to match the peer's eating [$r(38) = .35, p = .03$], (c) more interpersonal concern [$r(38) = .41, p = .01$], and (d) greater odds of reporting that one's eating decision was based on an attempt to make the peer feel comfortable [$r(38) = .40, p = .01$]. In contrast, among participants who did not believe that the peer wanted them to eat (with most believing that the peer did not care), the link between sociotropy and interpersonal concern was only marginal [$r(63) = .23, p = .07$], and there was no link between sociotropy and: (a) quantity eaten [bivariate: $r(63) = -.12, p = .35$; when controlling for hunger and how much the confederate ate, $pr(58) = -.11, p = .40$], (b) desire to eat the same amount as the peer [r

TABLE 1. Study 2: Regressions Predicting Eating Choices and Preferences Based on Sociotropy and Belief that Peer Wanted You to Eat

Criterion: Quantity of candies taken by participant^a		<i>R</i> ² : .28**
	β	
Sociotropy	.17 +	
Belief that peer wanted you to eat (yes/no)	-.06	
Sociotropy X belief that peer wanted you to eat	.28**	
Quantity of candies taken by confederate ^b	.13	
Hunger	.40**	
Criterion: Desire to eat same amount as peer		<i>R</i> ² : .17**
	β	
Sociotropy	.26*	
Belief that peer wanted you to eat (yes/no)	.28**	
Sociotropy X belief that peer wanted you to eat	.23*	
Criterion: Interpersonal concern		<i>R</i> ² : .28**
	β	
Sociotropy	.35**	
Belief that peer wanted you to eat (yes/no)	.40**	
Sociotropy X belief that peer wanted you to eat	.19+	
Criterion: Eating to keep peer comfortable		<i>R</i> ² : .16**
	β	
Sociotropy	.26*	
Belief that peer wanted you to eat (yes/no)	.27**	
Sociotropy X belief that peer wanted you to eat	.23*	

Note. ^aA square-root transformation was used to reduce skew. ^bThis variable was included as a covariate. A square-root transformation was used to reduce skew. + $p < .10$; * $p < .05$; ** $p < .01$.

(63) = .03, $p = .80$], or (c) reports that one's eating decision was based on an attempt to make the peer feel comfortable [$r(62) = .04$, $p = .77$]. Taken together, these results strongly supported the hypothesis that sociotropy would be linked with eating choices, but only in cases where people believed that a peer wanted them to eat.

SUPPLEMENTAL ANALYSES: GENDER

Although our main interest was in sociotropy, we tested for possible gender differences. Gender did not predict any of the main variables (i.e., sociotropy; desire to match; quantity eaten; perceived peer preferences; interpersonal concern; eating to make peer com-

fortable). Gender also did not interact with beliefs about peer preferences to predict any of the main variables. Note, however, that we could not test the full range of gender combinations here because the confederate was female.

SUMMARY

Study 1 revealed that the link between sociotropy and eating choices emerged sharply, but only among those who believed that the peer wanted them to eat. Among those who believed that the peer wanted them to eat, sociotropy was clearly linked with eating more, greater desire to match the peer's eating, more interpersonal concern, and more reports of eating to make the peer feel comfortable. Importantly, these effects emerged in a brief, controlled laboratory exchange with a stranger, a situation where social pressure should have been mild and subtle.

Study 2: A Naturalistic Situation Involving Pressure to Eat

Complementing the laboratory-based design of Study 1, Study 2 was designed to increase ecological validity by examining naturalistic eating situations involving people that participants knew. This study focused specifically on situations in which another person was eating and was seen as wanting the participant to eat. Study 2 was designed to allow direct examination of factors from the STTUC framework as potential mechanisms for any link between sociotropy and eating choices. Specifically, in Study 2 we examined the extent to which the person who wanted to eat would feel threatened if the participant ate less, and also assessed associated interpersonal concerns and distress. Path analysis was used to examine the roles of these STTUC-related variables in explaining the links between sociotropy, desires to appease through eating, and giving in to social pressures to eat. The variables used in the path analysis were based on the ordering implied by the STTUC framework: a threat to another person is perceived, followed by interpersonal concern and distress. Those who feel STTUC may, in turn, make appeasement attempts (including eating more) to reduce this distress (Zell & Exline, 2009). We proposed that the association between sociotropy and eating choices (in this case, a sense of having given in to social

pressure) would be explained by the links between sociotropy and these intervening STTUC-related variables.

METHOD

PARTICIPANTS AND PROCEDURE

Participants were 149 undergraduates (117 women; 32 men) taking an introductory psychology course at a public research university in the southeastern United States. All received partial course credit. Mean age was 19.1 ($SD = 1.5$). Ethnicities included Caucasian/white (67%), African American/black (17%), Latino/Hispanic (13%), Asian (3%), Middle Eastern (1%), and Native American (1%). Participants completed a paper-and-pencil survey. Measures are listed in the order in which they appeared. Unless otherwise noted, items were rated from 0 (*not at all*) to 10 (*extremely*).

MEASURES

Eating Situation. Participants were asked to recall a specific situation: "The situation that you recall must meet ALL THREE of the following criteria: 1) You wanted to avoid overeating OR to avoid eating some specific food (e.g., junk food; a high-fat or high-calorie meal; a big portion; red meat; sweets or dessert; carbohydrates, etc.); 2) You were with another person who clearly wanted to overeat or to eat the specific food that you were trying to avoid; and 3) You believed that the other person wanted *you* to overeat (or to eat the type of food that s/he wanted to eat)." Participants were asked to briefly describe the situation.

Perception that Other Person Would Feel Threatened if Participant Ate Less. Participants rated their perceptions of how the other person would have felt if the participant ate less than him/her. Our interest was in six items indicating threat: negative toward you, hurt or rejected by you, like you were a loser, threatened by you, disapproving toward you, and embarrassed or guilty about what s/he ate ($M = 1.8$, $SD = 2.1$, $\alpha = .80$).

Appeasement Motives. Participants read, "When deciding what (or how much) to eat, to what extent were you *trying* to..." followed by 13 items (some of which were fillers). Our interest here was in six

items tapping appeasement: make the other person feel comfortable, please the other person, protect the other person's feelings, avoid making the other person angry at you, and avoid posing a threat to the other person. (The appeasement items loaded on a single factor in a principal components analysis, eigenvalue = 4.5, 34.4% of variance, $M = 3.1$, $SD = 2.4$, $\alpha = .90$.)

Giving In to Social Pressure. Participants read, "In this situation, would you say that..." followed by five items, two of which are relevant here: "you gave in to social pressure" and "you ate in order to maintain social harmony" ($M = 3.0$, $SD = 3.1$, $r(146) = .68$, $p < .01$).

Interpersonal Concern. Participants rated the extent to which they were concerned about the other person's negative thoughts or feelings toward them in this situation. They completed a parallel item regarding concern about the effect of the situation on their relationship. These two items were highly correlated [$r(146) = .52$, $p < .001$] and were averaged ($M = 1.7$, $SD = 2.3$).

Distress. On a list of emotions, participants rated the extent to which they experienced sadness, guilt, and negative emotion as part of this situation ($M = 2.4$, $SD = 2.4$, $\alpha = .77$).

Satisfaction. Participants rated their overall satisfaction with their eating choices in this situation from 0 (*not at all*) to 10 (*totally*) ($M = 5.9$, $SD = 3.0$).

Sociotropy. The same measure from Study 1 was used ($M = 88.8$, $SD = 18.3$).

RESULTS AND DISCUSSION

DESCRIPTIVE STATISTICS

Three participants were dropped because their situations did not fit the criteria. One described a situation involving pressures to restrict eating, another described a time when friends wanted the participant to eat in a healthy way, and one listed "n/a."

Participants reported events that had occurred, on average, several months to several years before. Although the mean elapsed time was 1.6 years, a substantial positive skew (3.2) suggested that the median (4.0 months) might be more appropriately framed as the average. Even after skew was reduced with a cubed-root transfor-

TABLE 2. Study 2: Correlations among Key Variables

	1	2	3	4	5	6	7
1. Sociotropy	1.0						
2. Other threatened if participant ate less	.20*	1.0					
3. Interpersonal concern	.27**	.51**	1.0				
4. Distress	.35**	.31**	.39**	1.0			
5. Appeasement motives	.28**	.30**	.56**	.39**	1.0		
6. Giving in to social pressure	.30**	.24**	.54**	.45**	.69**	1.0	
7. Satisfaction with outcome	-.23**	-.13	-.23**	-.51**	-.41**	-.61**	1.0

Note. * $p < .05$, ** $p < .01$.

mation (0.5), the time variable did not correlate significantly with other key variables and is not discussed further.

On average, the eating situations took place in close relationships ($M = 8.2$, $SD = 2.8$) with same-sex persons (76%). The only gender effect was that women reported more emotional distress ($M = 2.7$, $SD = 2.5$) than men ($M = 1.6$, $SD = 1.8$), $t(141) = 2.40$, $p = .02$. Most participants reported situations involving only one other person (58%). None of the key interpersonal variables differed based on whether participants were dealing with a single person versus a group, $ps > .44$. Those who reported group situations were asked to focus on one person from the group. On average, in the situations they described, participants were moderately hungry ($M = 4.1$, $SD = 2.8$), likely to be dieting ($M = 5.6$, $SD = 3.5$), and quite tempted by the food ($M = 6.1$, $SD = 3.3$).

SOCIOTROPY AND EATING

Correlations. Correlations between the main study variables are presented in Table 2. Sociotropy was linked with a greater perception that the other person would feel threatened if the participant did not eat, greater interpersonal concern and emotional distress, greater desires to appease, more reports of giving in to social pressure, and less satisfaction with the outcome.

Path Analysis. We used path analysis to examine the hypothesized roles of STTUC variables in explaining the links between sociotropy, desires to appease, and giving in to social pressure. The model in Figure 1 provided a reasonable fit to the data, $\chi^2(9, N = 149) = 13.12$, $p = .16$, $\chi^2/df = 1.46$, normed fit index (NFI) = .991, comparative fit

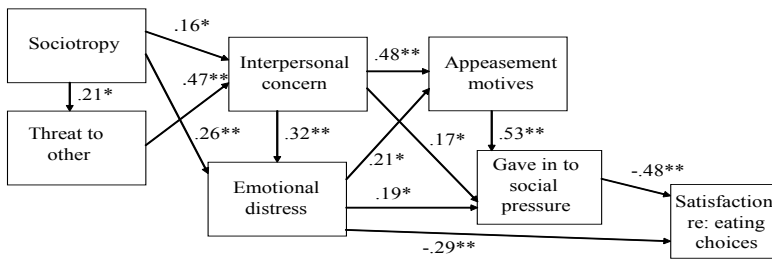


FIGURE 1. Study 2: Predictors of interpersonally-oriented thoughts, emotions, and behaviors in a naturalistic situation involving social pressure to eat.

Note. $\chi^2(9, N = 149) = 13.12, p = .16, \chi^2/df = 1.46, NFI = .991, CFI = .997, RMSEA = .056, PCLOSE = .39.$

index (CFI) = .997, root-mean-square error of approximation (RMSEA) = .056, PCLOSE = .39. Sociotropy predicted a greater sense that the other person(s) would be threatened if the participant did not eat. Sociotropy also predicted greater interpersonal concern and emotional distress. Consistent with the STTUC framework, a greater perception that the other person felt threatened predicted more interpersonal concern, which in turn predicted more emotional distress. Both interpersonal concern and emotional distress predicted a stronger desire to appease along with greater odds of giving in to social pressure. Finally, a sense of having given in to social pressure was linked with less satisfaction with the outcome.

SUMMARY

Study 2 complemented Study 1 by focusing on real-life eating situations in which another person was eating and wanted the participant to eat. Drawing on the STTUC framework, Study 2 highlighted several mechanisms that may help to explain the link between sociotropy and a sense of pressure to eat. Specifically, sociotropy was linked with greater perceptions that the other person would feel threatened if the participant did not eat, along with more interpersonal concern and distress. These responses, in turn, predicted greater desires to appease and more reports of giving in to social pressure (by eating more). Perceptions of having given in to social pressure, in turn, predicted less satisfaction with eating choices.

DISCUSSION

Although many factors shape eating behavior—ranging from hunger levels to portion size—social factors can play an important role. This project was designed to complement prior literature on normative eating (Herman et al., 2003; Vartarian et al., 2007) by focusing on a specialized set of social situations: those in which people felt some social pressure to eat. We proposed that the STTUC framework (Exline & Lobel, 1999) might be applied to understand people's tendencies to eat more in these specific social contexts. The STTUC framework suggests that some people may be concerned about posing an interpersonal threat by outperforming other eaters in terms of self-control. Thus, they might eat more in an attempt to make the other person comfortable. This current research focused on the question of whether people high in the people-pleasing trait of sociotropy would be especially susceptible to these types of social pressures. Evidence for this pattern emerged across two studies.

SOCIOTROPY AND SUSCEPTIBILITY TO SOCIAL INFLUENCES ON EATING

Because sociotropy implies a strong desire to please others and to maintain social harmony, we reasoned that it would be an important moderator of the effects of social pressures surrounding eating. Consistent with this reasoning, Study 1 showed that the link between sociotropy and eating emerged most clearly among participants who felt some social pressure, believing that a peer wanted them to eat. Under these conditions, sociotropy was linked not only with eating more, but also with greater reports of trying to match the peer's eating and eating to make the peer comfortable.

Study 2 focused on naturalistic situations in which participants were with another person who wanted them to eat. This study showed that sociotropy was linked with greater perceptions of having given in and eaten in response to social pressure. Study 2 also demonstrated the relevance of STTUC-related variables in explaining the link between sociotropy and eating. Specifically, sociotropy was correlated with a greater sense that the other person would feel threatened if the participant did not eat, and sociotropy directly pre-

dicted more interpersonal concern and distress (i.e., feeling more STTUC). These emotional responses, in turn, predicted greater desire to appease the other person, which in turn led to greater reports of giving in to social pressure.

THE STTUC FRAMEWORK: AN APPLICATION TO THE DOMAIN OF EATING

The studies reviewed here add to the existing literature on STTUC by extending it to the self-control domain of eating. In this initial article we focused on small-scale, everyday eating situations rather than full-scale bingeing or diagnosable eating disorders. We conceive of social pressures to eat, at least in subtle forms, as a common phenomenon, one not limited to an eating-disorder context. This emphasis on everyday eating situations may enhance the applicability of these findings to the population at large. We propose that in everyday life, eating in order to make others comfortable is one potentially important way that eating choices can be shaped by an external influence rather than by personal goals or internal cues such as hunger. For example, STTUC concerns might serve as a trigger that causes some people to break their diets. Given that individuals often try to match the amount that others are eating (see Herman et al., 2003, for a review), sociotropy and STTUC concerns could intensify these desires to match.

Although eating disorders were not the focus here, it would be interesting to examine whether eating in response to perceived social pressure could play a role in the initiation, maintenance, or exacerbation of disordered eating. For example, future research might explore social pressures to eat as a potential predictor of overeating—even binge eating—in dyads or groups. Overeating in groups seems to occur, in part, because social norms are being set that allow people to eat more (Herman et al., 2003). For some people, however, an additional reason to eat more may be to avoid posing an interpersonal threat.

The idea of peer pressure surrounding self-control failures is, in itself, certainly not new (e.g., Crockett, Raffaelli, & Shen, 2006). However, this project added a new dimension by applying the STTUC framework to situations involving self-control. The self-control domain of interest here involved eating. However, in future work, it

would be useful to see whether the STTUC framework might help to explain self-control failures in other domains such as work habits, exercise, or substance use.

LIMITATIONS AND FUTURE DIRECTIONS

The studies presented in this article focused on undergraduates. On the one hand, college students are a sensible group to focus on for eating-related issues because eating disorders are prevalent at this age (e.g., Hudson, Hiripi, Pope, & Kessler, 2007), and social pressures surrounding eating should be relevant to study within this age group. Also, for many students, college represents their first extended time of making eating decisions on their own, without parental influence. At the same time, an important next step will be to see whether social pressures surrounding eating are present in other age groups and for non-students. It might be particularly useful to evaluate STTUC-related eating concerns among younger adolescents, given the pressures toward conformity that often characterize this age group.

This research represented a first step in examining STTUC dynamics in eating situations. These studies were not designed to compare STTUC-based explanations for eating with other normative explanations (e.g., Herman et al., 2003). Clearly, there are likely to be many social situations involving eating in which individuals do not feel any social pressure to eat, nor do they have any reason to feel concerned about posing an interpersonal threat. The STTUC framework should not apply in these situations. It also seems reasonable to expect that even in situations involving social pressure to eat, eating choices will still be shaped by a variety of motives (e.g., hunger; wanting to impress others; eating as much as seems socially allowable; wanting to make healthy choices). A valuable next step would be to examine STTUC-related factors alongside other documented explanations for eating choices in social situations. Such research would help to clarify the relative contributions of these factors, which may also vary considerably based on the situation.

To facilitate future experimental work on STTUC concerns and eating, it will be helpful to develop a robust, reliable, and ethical means of inducing high versus low social pressure to eat in the laboratory. Our initial attempt to manipulate social pressure to eat in

Study 1, based on a brief comment by a confederate (“otherwise I’ll just eat them all myself”), was ineffective in creating social pressure to eat. To create such pressure, it might be necessary to use more elaborate statements, or other experimental manipulations might be used that are not based on verbalizations by confederates.

Study 2 allowed us to examine STTUC dynamics in real-life eating situations. However, one limitation of this design was that it was based on retrospective reports. Some events had occurred long ago, and by and large the levels of emotional intensity were modest. Future studies might avert these problems by using time-sampling methodologies, laboratory situations, or shorter time frames for retrospective studies (e.g., eating situations from the past several weeks).

This research showed that sociotropy is a predictor of STTUC-related concerns in eating situations, but it remains possible that other individual-difference variables could moderate or overshadow sociotropy. For example, past research has demonstrated that sociotropy is a robust predictor of STTUC distress when controlling for other factors such as the Big Five, depressive symptoms, and self-esteem (Exline & Zell, 2011); however, it is not yet known whether the predictive role of sociotropy would be equally robust in eating situations. Other situational factors might also be important to consider as covariates or mediators, such as the extent to which participants felt tempted to eat, their motivation to lose or gain weight, or the intensity of social pressure perceived.

Another limitation of this work, one shared with many other eating studies, is that it did not provide a complete picture of possible gender dynamics. Although Study 1 included both men and women, the confederate was always female. A closer and more systematic look at gender effects remains an important area for future work. The challenge, of course, is that substantial statistical power is needed to test for gender differences, particularly if the goal is to consider possible interactions between the genders of two or more participants. Although the resulting analyses of interaction effects might be complex, particularly in experimental designs involving other manipulated variables, such findings may nonetheless have practical importance.

CONCLUSION

This research complements prior work on social influences on eating by applying a novel conceptual framework, STTUC (Exline & Lobel, 1999). The STTUC framework suggests that in some situations, people might eat more in order to avoid posing a social comparative threat to another person. We proposed that individuals scoring high on sociotropy would be especially susceptible to these types of social pressures to eat. As predicted, we found that sociotropy was linked with greater eating when participants believed that another person wanted them to eat (Study 1). Under these conditions, sociotropy was linked not only with eating more but also with greater reports of trying to match the other's eating and eating to make the other person feel comfortable. Sociotropy was also linked with greater reports of interpersonal concern and distress (i.e., STTUC) in these eating situations (Studies 1 and 2). Study 2 clarified that this interpersonal concern and distress predicted desires to appease the other person, which in turn were linked with reports of caving in to social pressure and associated dissatisfaction.

These findings echo a major theme that has surrounded research on the social costs of outperformance: How can people be sensitive to the feelings of others, including those that they outperform, without letting fear of posing a threat hold them back from important personal goals? Although the pros and cons of various strategies have been considered (Zell & Exline, 2009), more work is needed to identify the most effective ways to navigate these complex social dilemmas in ways that show respect for both self and other.

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