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Personality, perceived appropriateness, and acknowledgement of social influences on food intake

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ABSTRACT

Social influences are powerful determinants of food intake. Whereas some people are willing to acknowledge social influences on their food intake, others seem to actively deny being influenced by social cues. Across three samples (total $n = 835$), we examined factors that prior theory and research suggest might predict people's willingness to acknowledge social influences on their food intake. These included conformity, self-monitoring, sociotropy, self-esteem, empathy, and the Big Five personality traits. Conformity, self-monitoring, and sociotropy were the most consistent predictors of acknowledgement of social influences on food intake, and conscientiousness was also related to acknowledgement of social influences. Furthermore, those effects were mediated by the extent to which people believe that eating in response to social cues is appropriate. These findings suggest that people who are more concerned with, and attuned to, the social world are more willing to acknowledge being influenced by social factors. Importantly, individuals who are less willing to acknowledge social influences on their food intake may not actually be any less influenced by social cues. Failing to acknowledge social influences on food intake could have implications for people's ability to regulate their eating appropriately and also for their self-evaluations.

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1. Introduction

Social context is a powerful determinant of behavior. One domain in which social factors are particularly potent is in influencing people's food intake. For example, people adjust their food intake to model that of their eating companions, eating little when their companions eat only a little, and eating more when their companions eat more (Herman, Roth, & Polivy, 2003; Vartanian, Spanos, Herman, & Polivy, 2015). This modeling effect is one of the most robust influences on food intake. Modeling has been demonstrated in a number of correlational and experimental studies, and is observed under a wide variety of conditions. For example, modeling occurs with snack foods (Robinson, Tobias, Shaw, Freeman, & Higgs, 2011) and during meals (Hermans, Larsen, Herman, & Engels, 2012), among children (Salvy, Vartanian, Coelho, Jarrin, & Pliner, 2008), and even when participants have been food-deprived for up to 24 h (Goldman, Herman, & Polivy, 1991). Modeling persists even when the model is not physically present and participants are exposed instead to a "remote confederate" list indicating the amount of food eaten by supposed prior participants (Roth, Herman, Polivy, & Pliner, 2001).

Despite a substantial body of research demonstrating that social factors can strongly influence food intake, people typically fail to acknowledge these influences when explaining their eating behavior (Vartanian, Herman, & Wansink, 2008). For example, a series of experiments by Vartanian, Sokol, Herman, and Polivy (2013a) showed that, although participants' food intake is powerfully influenced by the behavior of the experimental confederate, participants are much more likely to use factors such as taste and hunger than the behavior of the confederate to explain their food intake. Not only did participants in those studies underreport the influence of the social model's behavior, but they were also inaccurate in their overall explanations for their food intake. That is, participants' reports of the extent to which they were influenced by the various cues (hunger, taste, or social factors) were unrelated to the extent to which their behavior was actually influenced by those particular cues. A similar failure to acknowledge social influences on behavior has also been observed in domains other than eating, such as energy-conservation behavior (Nolan, Schultz, Cialdini, Goldstein, & Griskevicius, 2008).

Are people unaware that social influences are operating, or are they simply reluctant to acknowledge those influences on their behavior? Considerable social psychological research indicates that people's explanations for their behavior may be motivationally driven. Research on the actor–observer effect and on the third-person effect has shown that people make different attributions for their own behavior than for the behavior of others. For example, people tend to acknowledge

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external influences (such as advertising) on the behavior of others, but typically deny these influences on their own behavior (e.g., Douglas & Sutton, 2004). Other studies have found that people can accurately predict other people's behavior but are prone to making inaccurate predictions of their own behavior (e.g., Epley & Dunning, 2000).

There is evidence that the failure to acknowledge social influences on one's own food intake might be motivationally driven. Spanos, Vartanian, Herman, and Polivy (2014) found that participants were able to accurately identify social influences on the food intake of other people, but that there were individual differences in the extent to which participants accurately identified social influences on their own food intake. Spanos et al. (2014) created the Social Eating Scale to assess people's self-reported tendency to eat in response to social cues in their everyday lives. During a social-eating situation, participants who scored high on this measure (high acknowledgers) were relatively accurate in reporting on the extent to which their food intake was influenced by the behavior of their eating companion. In contrast, participants who scored low on this measure (low acknowledgers) appeared to actively deny being influenced by their eating companion: the more their food intake closely mimicked that of their eating companion, the less likely they were to acknowledge being influenced by that companion. These findings suggest that some people are willing to acknowledge social influences on their food intake, whereas others appear to actively deny these influences.

1.1. Individual differences in the acknowledgement of social influences on food intake

Spanos et al. (2014) found that scores on the Social Eating Scale predicted the extent to which people were willing to report that their food intake was influenced by social factors in a specific social-eating situation. What remains unclear, however, is *why* some people are more willing than others to acknowledge social influences on their food intake. Two possibilities that we explore in the present research have to do with (a) variations in perceptions of the appropriateness of social influence as an explanation for one's own behavior and (b) variations in more general personality characteristics.

1.1.1. Appropriateness

Herman et al. (2003) suggested that people's food intake in a social context may depend on their perceptions of appropriate eating behavior in that particular context. That is, people often use the food intake of others as a guide to determining how much they themselves should eat. (More specifically, Herman et al. proposed that people will ordinarily try to eat a little less than what the others are eating.) Vartanian et al. (2013a) directly tested this prediction and found that participants eating with a confederate who ate very little reported a lower norm of appropriate intake than did participants eating with a confederate who ate a lot. Furthermore, the perceived norm of appropriate intake fully mediated the link between the social model's behavior and participants' own food intake. Just as perceived appropriateness plays a role in determining people's food intake in social situations, it is possible that people's willingness to acknowledge social influences depends on the degree to which it is perceived as appropriate to follow social cues when eating (or to use social cues to infer how much is appropriate to eat).

Nisbett and Wilson (1977) argued that people rely on lay theories, or common-sense models, when explaining their behavior. Similarly, with respect to explanations for eating behavior, researchers have argued that people rely on common-sense explanations about what drives food intake; these common-sense explanations focus on the individual's hunger level and on the taste of the available food (Vartanian et al., 2008, 2013a). It is likely that the common-sense factors of hunger and taste are also considered appropriate or acceptable reasons for eating a particular amount, whereas other factors (such as the behavior of others, portion size) are regarded as more arbitrary and therefore inappropriate reasons for eating as much or as little as one does. To the

extent that people believe that eating in response to social factors is appropriate or acceptable, they should be willing to acknowledge those influences on their own behavior and may be reasonably accurate in doing so; in contrast, to the extent that people believe that eating in response to social factors is inappropriate or unacceptable, they may be motivated to deny those influences on their own behavior.

1.1.2. Personality characteristics

There are some personality characteristics that might be related to people's willingness to acknowledge social influences on their food intake. These include: conformity, which refers to the tendency to adjust one's behavior to keep it consistent with the behavior of others (Cialdini & Goldstein, 2004); self-monitoring of expressive behavior, which reflects people's tendency to observe and control the way they present themselves and behave in social situations (Snyder, 1974); and extraversion, which generally reflects a socially attentive and "open" orientation (Peterson, Morey, & Higgins, 2005). These characteristics all seem to capture a willingness to be engaged with the social environment and a tendency to be influenced by that environment. Therefore, it might be that individuals who score high on these characteristics also believe that it is appropriate to eat in response to social cues, and would therefore be willing to acknowledge those influences on their food intake.

Other characteristics have been linked to people's eating behavior in a social context. For example, Exline, Zell, Bratslavsky, Hamilton, and Swenson (2012) found that sociotropy, an excessive concern with pleasing others and maintaining social harmony, predicted how much participants ate, but only when they believed that the confederate wanted them to eat. Furthermore, Robinson et al. (2011) and Robinson, Benwell, and Higgs (2013) found that modeling was stronger among individuals who were high in trait empathy and among individuals who were low in trait self-esteem, but only when the model was physically present. Given that these personality characteristics are related to people's food intake in social situations, they might also be associated with people's willingness to acknowledge social influences on their food intake.

1.2. The present research

There are individual differences in the extent to which people acknowledge social influences on their food intake, but little is known about what differentiates those who acknowledge social influences from those who are less willing to acknowledge social influences. The aim of this research is to determine whether perceptions of the appropriateness of social influences, as well as certain personality traits, are related to acknowledgement of social influences. First, we predicted that social factors would be perceived as less appropriate reasons for food intake compared to other more common-sense factors (e.g., hunger). Second, we predicted that acknowledgement of social influences would be positively related to the belief that eating in response to social cues is appropriate. Third, we explored a number of personality characteristics that might be related to the acknowledgement of social influences (e.g., conformity, self-monitoring, sociotropy, empathy, and self-esteem). Finally, we tested the possibility that perceived appropriateness of social influences would mediate the association between personality characteristics and acknowledgement of social influences on food intake.

2. Method

2.1. Participants

Data were collected from three different samples via Amazon's Mechanical Turk. Participants were excluded if they provided incomplete data or if they failed any of the validity checks that were included in the surveys. The data reported below are based on the final sample of

valid participants' data. Sample 1 consisted of 353 participants (200 men, 153 women; mean age = 32.54 years, SD = 10.44; mean body mass index [BMI; k/m^2] = 25.73, SD = 6.28; 79% identified as White). Sample 2 consisted of 231 participants (129 men, 102 women; mean age = 32.68, SD = 11.59; mean BMI = 26.10, SD = 6.00; 78% identified as White). Sample 3 consisted of 281 participants (121 men, 160 women; mean age = 35.14, SD = 10.37; mean BMI = 26.75, SD = 6.37; 82% identified as White). This research was approved by the university's ethics committee.

2.2. Procedure

All of the procedures were identical across samples, except that additional measures were added to Samples 2 and 3 (see below). Participants completed all of the measures online. After providing informed consent, participants completed a series of questionnaires at their own pace.

2.3. Measures

2.3.1. Acknowledgement of social influences (assessed in Samples 1–3)
The Social Eating Scale (Spanos et al., 2014) assesses the degree to which individuals report a general tendency to eat in response to social cues in their everyday lives. The scale was adapted from the External Eating subscale of the Dutch Eating Behaviour Inventory (van Strien, Frijters, Bergers, & Defares, 1986) and consists of 6 items (e.g., "If you are eating with someone who eats very little, do you also eat very little?"; "Do you eat when others are eating, even when you're full?"). Each item is rated on a 5-point scale ranging from 1 (*Never*) to 5 (*Very often*). Higher mean scores reflect a greater tendency to report eating in response to social cues (Sample 1 α = .71, Sample 2 α = .80, Sample 3 α = .83).

2.3.2. Appropriateness of reasons for food intake (assessed in Samples 1–3)
To assess perceived appropriateness of various influences on food intake, participants rated the degree to which they think it is appropriate for one's food intake to be influenced by "how much other people eat" (which we will refer to as appropriateness of social influences), as well as by "how hungry a person is," "how good the food tastes," and "how big a portion the person is served." Each item was rated on a 7-point scale (1 = *Not at all appropriate*; 7 = *Completely appropriate*).

2.3.3. Conformity (assessed in Samples 1–3)
The Conformity Scale (Mehrabian, 2005) assesses the degree to which individuals have "a characteristic willingness to identify with others and emulate them, to give in to others so as to avoid negative interactions, and generally, to be a follower rather than a leader in terms of ideas, values, and behaviors" (p. 2). Participants indicated on a 7-point scale the extent to which they agreed or disagreed (−3 = *Strongly disagree*; +3 *Strongly agree*) with each of the 11 statements (e.g., "I often rely upon, and act upon, the advice of others"; "I tend to follow family decisions in making political decisions"). Higher scores indicate a greater reported tendency to conform (Sample 1 α = .83, Sample 2 α = .80, Sample 3 α = .85).

2.3.4. Self-monitoring (assessed in Samples 1–3)
The Self-Monitoring of Expressive Behavior Scale (Snyder, 1974) assesses the degree to which people are concerned with, observe, and control the social appropriateness of their self-presentation and expressive behavior. Participants responded to 25 true or false statements concerning their personal reactions to a number of different situations (e.g., "I guess I put on a show to impress or entertain people"; "Even if I am not enjoying myself, I often pretend to be having a good time"). Higher scores indicate greater self-monitoring (Sample 1 α = .73, Sample 2 α = .80, Sample 3 α = .80).

2.3.5. Sociotropy (assessed in Samples 1–3)
Participants completed the sociotropy subscale of the Personal Style Inventory II (Robins et al., 1994), which assesses the extent to which people are concerned with their interpersonal relationships on three different dimensions: concern about what others think, dependency, and pleasing others. Participants indicated on a 6-point scale the extent to which they agreed or disagreed (1 = *Strongly disagree*; 6 = *Strongly agree*) with each of the 32 statements (e.g., "I often put other people's needs before my own"; "I am very sensitive to criticism by others"). Higher scores indicate a greater concern with social harmony within interpersonal relationships (Sample 1 α = .93, Sample 2 α = .91, Sample 3 α = .92).

2.3.6. Trait self-esteem (assessed in Samples 2–3 only)
Trait self-esteem was assessed with the 10-item Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965). Each item (e.g., "On the whole, I am satisfied with myself") was rated on a 4-point scale (1 = *Strongly disagree*; 4 = *Strongly agree*), with higher mean scores indicating greater self-esteem (Sample 2 α = .91, Sample 3 α = .94).

2.3.7. Empathic concern (assessed in Samples 2–3 only)
Participants completed the empathetic concern subscale of the Interpersonal Reactivity Index (Davis, 1980), which assesses the degree to which people experience warmth, compassion, and concern for others facing negative circumstances. The scale consists of 15 items (e.g., "When I see someone being taken advantage of, I feel kind of protective toward them"; "I am often quite touched by things that I see happen"), and participants indicated on a 5-point scale the extent to which each statement described them (1 = *Does not describe me well;* 5 = *Does describe me well*). Higher scores indicate greater empathic concern (Sample 2 α = .88, Sample 3 α = .91).

2.3.8. Big Five personality traits (assessed in Sample 3 only)
The Big Five Aspects Scale (BFAS; DeYoung, Quilty, & Peterson, 2007) was used to assess Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness-Intellect. Although only extraversion has been examined in previous research on modeling of food intake (Herman, Koenig-Nobert, Peterson, & Polivy, 2005), other Big Five traits might also be relevant in the current context. For example, conscientiousness and openness are associated with conformity and dissent (Packer, 2010) and agreeableness and neuroticism are both related to sociotropy (Bagby et al., 2001). Thus, we assessed all of the Big Five traits. The BFAS consists of 100 descriptive characteristics that participants rated on a 5-point scale (1 = *Strongly disagree*; 5 = *Strongly agree*). The measure has been validated against other measures of the Big Five (including the NEO PI-R), and has good internal and test retest reliability (DeYoung et al., 2007). In the present study, reliability was excellent for each domain (neuroticism α = .95, agreeableness α = .90, conscientiousness α = .90, extraversion α = .91, openness-intellect α = .89).

2.4. Statistical analyses

All analyses were conducted independently for each sample. First, Analysis of Variance (ANOVA) was conducted to determine whether perceived appropriateness of the various reasons for eating differed significantly from one another. Second, we examined bivariate correlations between perceived appropriateness of social influences on food intake and acknowledgement of those social influences (i.e., Social Eating Scale scores). Third, we examined bivariate correlations between the personality characteristics and both perceived appropriateness of social influences and acknowledgement of social influences. These bivariate correlations were followed by a multiple linear regression analysis to determine which personality characteristics were significant independent predictors of perceived appropriateness and acknowledgement of social influences. For each regression analysis, all of the personality

Table 1
Mean (SD) ratings of appropriateness for different influences on food intake.

	Sample 1	Sample 2	Sample 3
Hunger	6.31^a (0.98)	6.35^a (1.07)	6.06^a (1.12)
Taste	5.62^b (1.28)	5.39^b (1.29)	5.39^b (1.38)
Portion size	4.39^c (1.57)	4.17^c (1.57)	4.17^c (1.59)
Social influences	2.99^d (1.70)	2.84^d (1.55)	2.95^d (1.61)

Note: For each sample, means with a different superscript were significantly different at $p < .001$.

characteristics were entered simultaneously into the model. Finally, when a given personality characteristic was associated with both perceived appropriateness and acknowledgement of social influences, mediation analysis (using the PROCESS macro; Hayes, 2013) was conducted to test whether perceived appropriateness mediated the association between that personality characteristic and acknowledgement of social influences. This approach uses bootstrapping, which involves repeatedly sampling from the data set (in this case, 5000 bootstrap resamples) to create an approximation of the sampling distribution of the indirect effect and to generate confidence intervals for these effects.

3. Results

3.1. Appropriateness

The overall ANOVA for ratings of the appropriateness of the reasons for eating was significant: Sample 1, $F (3, 1047) = 516.46$, $p < .001$, $\eta^2_p = .60$; Sample 2, $F (3, 690) = 386.32$, $p < .001$, $\eta^2_p = .63$; Sample 3, $F (3, 840) = 362.06$, $p < .001$, $\eta^2_p = .56$. As shown in Table 1, the amount eaten by others (i.e., social influences) was rated as the least appropriate reason for eating a particular amount, followed by portion size and taste, with hunger being rated as the most appropriate reason for eating a particular amount. All of these differences were significant at $p < .001$. Furthermore, in all three samples, ratings of the appropriateness of social influences was positively correlated with participants' scores on the Social Eating Scale (Sample 1 $r = .48$, $p < .001$; Sample 2 $r = .39$, $p < .001$; Sample 3 $r = .54$, $p < .001$).

3.2. Associations with personality characteristics

3.2.1. Sample 1

Conformity, self-monitoring, and sociotropy were all positively correlated with ratings of the appropriateness of social influences, and also with scores on the Social Eating Scale (Table 2). When all three predictors were entered into a regression model simultaneously, the overall model predicting Social Eating Scale scores was significant, $F (3, 349) = 16.65$, $p < .001$, $R^2 = .12$, and conformity, self-monitoring, and sociotropy were all significant independent predictors. Finally, perceived appropriateness of social influences mediated the association between conformity and Social Eating Scale scores, between self-monitoring and Social Eating Scale scores, and between sociotropy and Social Eating Scale scores (see Table 3).

3.2.2. Sample 2

As in Sample 1, conformity and self-monitoring were positively correlated with ratings of the appropriateness of social influences and with scores on the Social Eating Scale. Sociotropy was positively correlated with Social Eating Scale scores, but not with appropriateness. Trait self-esteem and trait empathy were not correlated with either appropriateness of social influences or Social Eating Scale scores (Table 2).[1]

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[1] To assess whether the observed associations simply reflect socially desirable responding, participants in this sample also completed the Balanced Inventory of Desirable Responding (Paulhus, 1991). Neither the impression management subscale ($r = .03$, $p = .61$) nor the self-deceptive enhancement subscale ($r = -.01$, $p = .61$) was correlated with Social Eating Scale scores.

Table 2
Correlations between personality characteristics and appropriateness of social influences and Social Eating Scale scores.

	Sample 1		Sample 2		Sample 3	
	AppSoc	SES	AppSoc	SES	AppSoc	SES
Conformity	.32***	.23***	.20**	.29***	.35***	.48***
Self-monitoring	.15**	.24***	.28***	.23***	.22***	.23***
Sociotropy	.18**	.26***	.06	.32***	.29***	.53***
Self-esteem	–	–	.02	−.07	−.11	−.29***
Empathy	–	–	−.08	.07	−.09	.10
Neuroticism	–	–	–	–	.19**	.32***
Extraversion	–	–	–	–	−.02	−.18**
Openness	–	–	–	–	−.16**	−.17**
Conscientiousness	–	–	–	–	−.18**	−.39***
Agreeableness	–	–	–	–	−.21***	.01

Note: AppSoc = appropriateness of social influences, SES = Social Eating Scale.
** $p < .01$.
*** $p < .001$.

When all five predictors were entered into a regression model simultaneously, the overall model predicting Social Eating Scale scores was significant, $F (5, 225) = 8.70$, $p < .001$, $R^2 = .16$, and conformity, self-monitoring, and sociotropy were all significant independent predictors. Finally, perceived appropriateness of social influences mediated the association between conformity and Social Eating Scale scores, and between self-monitoring and Social Eating Scale scores (Table 3). (Mediation analysis was not carried out with sociotropy as a predictor because sociotropy was not correlated with appropriateness of social influences.)

3.2.3. Sample 3

Conformity, self-monitoring, and sociotropy were positively correlated with ratings of the appropriateness of social influences and with Social Eating Scale scores. Trait self-esteem was not correlated with appropriateness of social influences and was negatively correlated with Social Eating Scale scores. Empathy was not correlated with either appropriateness or Social Eating Scale scores. With respect to the Big Five domains, appropriateness of social influences was positively correlated with neuroticism, negatively correlated with agreeableness, conscientiousness, and openness, and not correlated with extraversion. Social Eating Scale scores were positively correlated with neuroticism, negatively correlated with conscientiousness, extraversion, and openness, and not correlated with agreeableness. The overall regression model predicting Social Eating Scale scores was significant, $F (10, 270) = 16.75$, $p < .001$, $R^2 = .38$, and conformity, self-monitoring, sociotropy, and conscientiousness were all significant independent predictors. Finally, perceived appropriateness of social influences mediated the association between conformity and Social Eating Scale scores, between self-

Table 3
Direct and indirect effects from personality characteristics to Social Eating Scale scores with perceived appropriateness as the mediator.

Personality characteristic	Direct effect		Indirect effect			
	Estimate	SE	Point estimate	SE	95% CI	
Sample 1						
Conformity	.04	.01	.04	.01	.02,	.06
Self-monitoring	.15	.04	.06	.02	.02,	.10
Sociotropy	.03	.01	.02	.01	.005,	.03
Sample 2						
Conformity	.07	.02	.02	.01	.01,	.04
Self-monitoring	.11	.05	.08	.02	.04,	.14
Sample 3						
Conformity	.11	.02	.05	.01	.03,	.07
Self-monitoring	.10	.04	.10	.03	.05,	.15
Sociotropy	.09	.01	.03	.01	.01,	.04
Conscientiousness	−1.95	.32	−.58	.23	−1.05,	−.16

monitoring and Social Eating Scale scores, between sociotropy and Social Eating Scale scores, and between conscientiousness and Social Eating Scale scores (Table 3).

Because past research suggests that the two facets of conscientiousness (industry and order) are differentially related to conformity (Packer, Fujita, & Herman, 2013), we conducted post hoc analyses in which industry and order were entered as predictors of perceived appropriateness and of Social Eating Scale scores. Industry was a significant negative predictor of both perceived appropriateness ($\beta = -.20$, $p = .004$) and of Social Eating Scale scores ($\beta = -.39$, $p < .001$), but order was not a significant predictor of either measure ($ps > .52$).

4. Discussion

Social influences play a powerful role in determining how much food people eat. Whereas some people appear to be willing to acknowledge social influences on their food intake, other people seem to actively deny those influences. The present research examined factors associated with people's willingness to acknowledge social influences on their food intake, including perceived appropriateness of social influences and certain personality traits. First, across all three samples, we found that social factors were rated as a much less appropriate reason to eat a particular amount than were other factors such as hunger, taste, and even portion size. These findings suggest that social influences do not fit with people's common-sense explanations for food intake. Furthermore, eating in response to social cues is considered even less appropriate than is eating in response to other external factors such as portion size. Although participants overall rated social influences as inappropriate, there was variability among participants, and the extent to which participants believed that it was appropriate to eat in response to social cues was positively correlated with their self-reported tendency to eat in response to social cues. Overall, then, these findings support our hypothesis that some people are relatively more willing to acknowledge social influences on their food intake because they believe that it is acceptable or appropriate to eat in response to social cues, whereas other people are relatively unwilling to acknowledge (and may actively deny) social influences on their food intake because they believe that it is unacceptable or inappropriate to eat in response to social cues.

Second, across all three samples, conformity, self-monitoring, and (to a lesser extent) sociotropy were associated with perceived appropriateness of social influences and with acknowledgement of social influences. Mediation analyses further showed that perceived appropriateness of social influences mediated the association between these personality characteristics and acknowledgement of social influences on food intake. These findings indicate that individuals who are generally willing to be influenced by social factors (those high in conformity and self-monitoring) and who are concerned with social harmony (those high in sociotropy) are more likely to acknowledge social influences on their food intake because they tend to believe that it is appropriate to follow social cues when eating.

The only other factor to be associated with both perceived appropriateness and acknowledgement of social influences was conscientiousness. Individuals high in conscientiousness were less likely to believe that it was appropriate to eat in response to social cues and were also less likely to acknowledge eating in response to social cues. On the one hand, this finding might seem counterintuitive because conscientiousness tends to be associated with conformity (Packer, 2010). On the other hand, research by Packer et al. (2013) suggests that conscientiousness leads to conformity only in situations that involve concrete "low-level construal" group goals. Furthermore, the degree to which conscientiousness is associated with conformity appears to depend on the specific aspect of conscientiousness (i.e., industry vs. order) being considered (Packer et al., 2013). Post hoc analyses from our own data indeed indicate that only the "industry" aspect of conscientiousness predicts lower levels of perceived appropriateness and acknowledgement of social influences on food intake.

When it comes to the personality characteristics associated with social influences on food intake, there appears to be a disconnect between the factors that predict acknowledgement of social influences and the factors that have been shown to predict actual eating behavior in past studies. Conformity and self-monitoring were both related to acknowledgement of social influences in the present study, but previous research found that these factors were unrelated to the extent to which participants modeled the intake of their eating companion (Herman et al., 2005; Vartanian et al., 2013b). Obversely, trait empathy and trait self-esteem have been found to predict modeling of food intake in previous research (Robinson et al., 2011), but these traits did not predict acknowledgement of social influences in the present research.

Sociotropy is the only characteristic included in the present study that was associated with acknowledgement of social influences and that has also been associated with eating behavior in previous research (Exline et al., 2012). This may be because the design of Exline et al.'s study differs from typical modeling studies in that the researchers were primarily interested in how participants' food intake was influenced by whether or not they believed that the confederate wanted them to eat. They found that sociotropy predicted increased food intake only among participants who believed that the confederate wanted them to eat. Thus, Exline's sociotropic participants were not only socially influenced but were influenced in a way that demanded a conscious awareness of this influence.

The present studies are cross-sectional, and therefore the standard caveats about causal inference must be considered. For example, although we have described perceived appropriateness as leading individuals to acknowledge social influences on their food intake, it is possible that acknowledging social influences on food intake leads people to justify those actions by indicating that it is appropriate to do so. Given that general personality characteristics such as conformity, self-monitoring, sociotropy, and conscientiousness predicted acknowledgement of social influences in a specific domain (i.e., eating), it is possible that these characteristics would also predict acknowledgement of social influences in other domains (e.g., prosocial or antisocial behavior, energy-conservation behavior). Indeed, it would be interesting for future research to examine the extent to which people who are willing to acknowledge social influences in one domain are also more likely to acknowledge social influences in another domain. Finally, it is important to note that the measures included in the present study (i.e., Social Eating Scale) capture a self-reported tendency to respond to social cues rather than an actual observed propensity to be influenced by social factors. Post hoc analyses of the data from Spanos et al.'s (2014) study suggest that individuals who score high on the Social Eating Scale (high acknowledgers) are no more likely to actually be influenced by social factors than are individuals who score low on the scale (low acknowledgers). Thus, it is not simply the case that individuals who are more influenced by social cues are also more likely to report being influenced by social cues.

The present research extends previous findings regarding attributions for food intake by identifying perceived appropriateness of social influences, as well as set of personality characteristics, as important predictors of the degree to which people are willing to acknowledge social influences on their food intake. Our findings suggest that people who are more concerned with, and attuned to, the social world (i.e., those who are higher in conformity, self-monitoring, and sociotropy) are more willing to acknowledge being influenced by social factors. This willingness to acknowledge social influences is mediated by perceptions of the appropriateness of social influences on food intake. That is, those who are less likely to acknowledge social influences also tend to think that social influences are less appropriate to follow. Taken with previous work in the area, the findings of the present research suggest that certain people are more willing to accept the *idea* of being influenced by social factors, but may not *actually* be any more or less influenced by social factors. If people believe that their food intake is not influenced by social factors when it actually is, then it could be difficult

for them to regulate their food intake. Specifically, people may overeat in some circumstances without later compensating for the extra calories consumed, which, if repeated overtime, could lead to weight gain. In other cases, people may unwittingly under-eat. Although eating less can be healthy for some people, for other people it can contribute to an unhealthy pattern of restriction (especially for individuals who are at risk for disordered eating). Furthermore, denying social influences on food intake could have implications for people's self-evaluations. For example, if people believe that their food intake is excessive but fail to acknowledge the possible influence of social factors, they might experience a sense of personal failure and self-blame. In these ways, failing to acknowledge social influences (or other external factors that are considered inappropriate, such as portion size) on food intake could affect people's overall health and wellbeing.

Acknowledgments

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