Effects of Type of Social Control Strategy and Perceived Agent Motivations on Eating and Relational Behaviors in Romantic Relationships Over Time

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Acknowledgments

Dedications

This dissertation is dedicated to my husband, Chris, who inadvertently helped me get my first research assistant position by lending me a book about evolutionary psychology in my sophomore year of college. He has supported me in my professional and personal goals ever since. Thank you for listening with rapt attention (or faking it really well) when I described my struggles with analyses, frustrations with teaching, and excitement over new projects, opportunities, and findings. I love you.

Abstract

One of the ways in which close relationship partners can affect each other's health

behavior is by enacting social control, in which partners intentionally try to change each

other's behavior by using specific social control strategies. Most research has

distinguished between the effects of different strategies on intrapersonal factors, such as

individuals' emotions, motivation, and health behavior, rather than considering the

interpersonal context in which social control is embedded. This dissertation research

addresses this gap by examining how the strategies that one partner uses to try to improve

the other's eating behavior elicit relational and eating responses over time. Study 1 used

an iterative hypothetical scenario to experimentally test whether the effects of different

social control strategies (autonomy-supporting versus autonomy-limiting) on relational

and eating behavior are moderated by individuals' perceptions of their partners' motives

for enacting social control (independent versus interdependent). Study 1 results showed

that although there were few moderating effects of individuals' perceptions of their

partners' motives on relational behaviors or healthiness of eating, autonomy-supporting

strategies were associated with more constructive relational behaviors after the first use

of social control and healthier eating over time. Study 2 used a daily diary approach to

obtain descriptive information on the use of social control in relationships and to examine

how different strategies elicit different relational and eating behaviors. Study 2 showed

that partners enact more social control than previous research has shown and that partners

often use both autonomy-supporting and autonomy-limiting social control strategies.

Study 2 also showed that on days when individuals perceived that their partner had more

interdependent motives, they engaged in more constructive relational behavior and

reported healthier perceptions of their eating, but not healthier eating behavior. Additionally, autonomy-supporting social control was associated with more constructive relational behaviors, healthier perceptions of eating and healthier eating behaviors the first time the strategies were used, but not over time. Together, these studies utilize a novel iterative scenario methodology and longitudinal assessments to examine both relational and health responses to social control and show that autonomy-supporting, but not autonomy-limiting social control has implications for relationships and health behavior.

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Introduction

Close relationships have a critical effect on health; in fact, they have been shown to have an effect at least equal to known health risk factors, such as smoking, obesity, and inactivity (Holt-Lunstad, Smith, & Layton, 2010). Yet, the specific mechanisms that explain how relationships impact health remain unclear (Pietromonaco & Collins, 2017). Social exchange processes – such as how and why close partners influence each other's health behavior – often fill minor roles (or are absent altogether) in traditional theories of health behavior change, yet they offer a promising avenue for health behavior interventions because partners can have potent, long-lasting effects on each other's behavior. In fact, couple-oriented interventions can be more efficacious than traditional psychosocial interventions (Martire, Schulz, Helgeson, Small, & Saghafi, 2010). Most research has focused on either how social exchange processes (e.g., social support, social control) or health decision-making processes (e.g., changes in risk appraisals, self-efficacy) affect health behavior change (Craddock, vanDellen, Novak, & Ranby, 2015). Thus, the extent to which there are reciprocal associations between social exchange processes and health decision-making processes, and the extent to which these associations affect and are affected by relationship and health behavior outcomes is unclear. A theoretical framework is needed that explains how health decision-making processes and social exchange processes jointly regulate how close others influence people's health behavior.

The current research tests a theoretical model that integrates constructs from health psychology and relationship science and examines the antecedents, moderators and consequences of social control in the context of eating behavior of individuals in

romantic relationships. Social control is one kind of social exchange process that has

been linked to health behavior. *Social control* refers to intentionally trying to change

another person's behavior (Craddock et al., 2015). The current research examines how

different behaviors that romantic partners enact to change each other's health behavior

(i.e., *social control strategies*) elicit unique relational *and* health behavior responses over

time. The individual that enacts social control is known as the "agent," whereas the

individual that is the target of social control is known as the "target." The current work

focuses on the perspective of the target and examines how repeated instances of social

control affect the target's relational responses and health responses. Study 1 uses an

iterative scenario to provide an experimental test of whether social control strategies that

differ in the extent to which they bolster or constrain the target's autonomy over their

own eating behavior leads targets to respond with different relational and eating

behaviors and whether these effects differ as a function of the target's attributions for the

agent's use of social control strategies.

Study 2 is comprised of observational, daily diary assessments and builds on the

findings from Study 1 by examining how social control attempts unfold in ongoing

romantic relationships over time. The aims of Study 2 are to (a) collect novel descriptive

data on the frequency and variability of social control strategies used by agents, as well as

the covariance between different types of social control strategies and different motives,

(b) examine the concurrent and subsequent eating and relational behaviors that targets

report in response to the agent's social control and examine how these associations are

moderated by the target's attributions for the agent's social control, and (c) examine how

targets' eating and relational responses to social control affect the social control strategies

the agent subsequently uses. Both studies have theoretical implications for deepening our understanding of how health-related social exchange processes operate in relationships and how such processes affect relational and health behaviors, and applied implications for the design and implementation of health behavior change interventions that are contextualized within romantic relationships.

Close Relationships and Health Behavior

Close relationships are characterized by interdependence, whereby "partners are dependent on one another to obtain good outcomes and facilitate the pursuit of their most important needs and goals" (Finkel, Simpson, & Eastwick, 2017, p. 47). Interdependence can manifest in many forms, including cognitions, affect, motivations, and behaviors. One manifestation of interdependence is a motivational shift away from one's immediate, self-interested behavioral impulses toward acting in the interests of one's partner or in the interests of the relationship (i.e., transformation of motivation, Agnew et al., 1998; Kelley & Thibaut, 1978). Thus, in close relationships, one partner is not only dependent on the other for help obtaining good outcomes, but that partner is also motivated to help the other obtain good outcomes (see also: transactive goal dynamics theory, Fitzsimons, Finkel, & vanDellen, 2015).

One positive outcome that partners should be motivated to help each other obtain is good health, which is linked to one's engagement in health behaviors. Health behaviors have short- and long-term implications for individuals' morbidity, mortality, and overall well-being (Bauer, Briss, Goodman, & Bowman, 2014; McGinnis, Williams-Russo, & Knickman, 2002), which, in turn, can impact their relationship partners' health and well-being outcomes. Thus, individuals' engagement in healthy or unhealthy behaviors can

have consequences for not only themselves, but for their relationship partners (e.g., Martire et al., 2010). To the extent that two people in a close relationship are interdependent, each person should be motivated to help the other person engage in healthy behaviors. Simply put, people in highly interdependent relationships have more to lose if their partner has poor health and more to gain if their partner has good health, compared to people in less interdependent relationships.

Romantic Relationships and Health Behavior

In adulthood, romantic relationships are often characterized by not only high levels of motivation for interdependence, but also opportunities for interdependence. Romantic partners often cohabitate, engage in shared routines, and share social circles, which all afford opportunities for partners to increase mutual dependence. Therefore, romantic partners should be especially motivated and capable of influencing all aspects of each other's behavior – including health behavior. Consistent with this idea, married couples show concordance across a variety of health behaviors, including eating patterns (Bove, Sobal, & Rauschenbach, 2003), alcohol consumption (Graham & Braun, 1999; Stimpson, Masel, Rudkin, & Peek, 2006), physical activity (Berli, Bolger, Shrout, Stadler, & Scholz, 2018, Study 2), and smoking behavior (Berli et al., 2018, Study 1; Stimpson et al., 2006). Concordance in health behaviors in couples is not entirely explained by shared environments or by the initial similarities that attract individuals to one another, which suggests that intentional or unintentional influence must be occurring between romantic partners (see Meyler, Stimpson, & Peek, 2007, for a review of health concordance within couples).

Romantic partners can affect each other's health behavior in intentional and unintentional ways (Huelsnitz, Rothman, & Simpson, 2018; Pietromonaco & Collins, 2017). For example, partners can affect each other's health behavior unintentionally, such as by engaging in capitalization (i.e., showing excitement or enthusiasm in response to a partner's good news, Feeney & Collins, 2015) or showing intimacy, affection, and love (among other behaviors), or by engaging in negative behaviors (e.g., hostility, withdrawal). Although partners may not intend to impact each other's health by engaging or not engaging in such behaviors, these behaviors can nonetheless impart psychological and physiological effects on the other partner that facilitate their engagement in healthier behaviors, health behavior maintenance, or engagement in unhealthy behaviors (Pietromonaco & Collins, 2017; Troxel, Robles, Hall, & Buysse, 2007).

Additionally, romantic partners can affect each other's health behavior intentionally, such as by enacting social control. Social control can have positive effects on health behavior (Craddock et al., 2015) and is thought to affect individuals' health behavior by discouraging behaviors that compromise health and by promoting behaviors that enhance health (Lewis & Rook, 1999; Umberson, 1987). Given these potential health benefits, people in romantic relationships should be motivated to both use social control (as agents) and to accept social control (as targets).

However, there are potential personal and relational costs associated with enacting and complying with social control that factor into its effectiveness for health behavior change and relationship maintenance processes. For example, enacting social control can be costly in terms of time and physical and self-regulatory resources for agents (e.g., monitoring the target's behavior and thinking of ways to change their

behavior requires energy). These costs could affect the likelihood of the agent continuing to use social control or the likelihood that the agent will use strategies that are most likely to change the target's behavior (but that may require more effort from the agent, such as the agent changing their own health behavior). Complying with social control can be equally costly for targets, as changing one's own health behavior is often fraught with challenges and barriers that draw from targets' own resources. The target's noncompliance could also communicate to agents that targets do not care about agents' desires or preferences, which could lead to relational tension. In turn, this could lead the agent to use social control strategies that are controlling or negative. Thus, there are costs for both the agent and the target that should determine the effects of social control for both individuals' health, as well as for their overall relationship functioning.

Theoretical Perspectives of Social Control

Two theoretical perspectives that are useful for considering the costs and benefits of social control for individuals and relationships are self-determination theory (SDT; Deci & Ryan, 2000; Ryan & Deci, 2000) and social control theory (SCT; e.g., Butterfield & Lewis 2002; Lewis, Butterfield, Darbes, & Johnston-Brooks, 2004; Lewis & Rook, 1999; Tucker & Mueller, 2000). Both theories address the potential effects of social control for targets' health behavior and affect, which can then be extended to make predictions about how social control should affect relational behaviors, as well.

Self-Determination Theory

In the context of health behavior, SDT suggests that the extent to which three psychological needs of autonomy (i.e., feeling of being the origin of one's own behaviors), competence (i.e., feeling efficacious), and relatedness (i.e., feeling understood

and cared for by partners) are supported and satisfied determines targets' motivation to initiate and maintain health behaviors (Ng et al., 2012). SDT advocates for providing autonomy support when enacting social control (Gorin, Powers, Koestner, Wing, & Raynor, 2014; Ng et al., 2012). *Autonomy support* is provided when an agent acknowledges a target's feelings, refrains from exerting excessive control and pressure, offers choices and options, and offers informational positive feedback (Reeve, Bolt, & Cai, 1999; Silva et al., 2010). The provision of autonomy support helps create an interpersonal environment that facilitates the fulfillment of the three psychological needs and promotes the development of personally meaningful reasons for behavior (i.e., autonomous motivation) (Gorin et al., 2014; Ng, Ntoumanis, & Thogersen-Ntoumani, 2014; Ng et al., 2012). In contrast, the provision of behaviors that limit autonomy (which SDT researchers often term 'directive behaviors', but will be referred to here as autonomy-limiting behaviors/strategies) fosters an environment that inhibits the fulfillment of individuals' needs and facilitates the development of motivations driven by external or internal pressures (i.e., controlled motivation) (Ng et al., 2012).

With respect to relationship-relevant experiences, research has shown that the more that the three psychological needs are fulfilled in people's romantic relationships, the higher their self-esteem and positive affect, and the less negative affect they experience overall (Patrick, Knee, Canavello, & Lonsbary, 2007). Additionally, greater need fulfillment is associated with greater relationship satisfaction and commitment. With regard to specific relational behaviors, greater need fulfillment is associated with greater willingness to express one's emotions (La Guardia, 2007) and greater willingness to rely on relational partners (Ryan, La Guardia, Solky-Butzel, Chirkov, & Kim, 2005).

Autonomous and controlled motivations are also important for relationship functioning. For instance, greater autonomous motivation for engaging in different relationship-relevant behaviors such as sexual intimacy and physical intimacy is associated with greater feelings of commitment, satisfaction, and intimacy within one's relationship (Gaine & La Guardia, 2007). Therefore, interpersonal environments that evoke fulfillment of autonomy, competence, and relatedness promote positive relationship behaviors and beliefs.

Within SDT research, social control is typically assessed using measures that ask targets to generally characterize agents' autonomy support through items that assess the extent to which agents offer reasons for behavior change, acknowledge targets' thoughts and feelings, and allow targets to make choices for themselves (e.g., Williams et al., 2006). Thus, research in this area tends to assess targets' evaluations of agents' autonomy support provision, in general, rather than assessing the characteristics, frequency, or intensity of specific autonomy-supporting strategies. Research examining autonomy-supporting strategies in the context of the health care provider and patient relationship has found that autonomy support is associated with healthier behavior (e.g., Halvari et al., 2010, Williams, Grow, Freedman, Ryan & Deci, 1996; see Ntoumanis et al., 2020 for a meta-analysis of the effects of interventions informed by SDT on health behavior, physical health, and psychological health).

Although fewer studies have examined social control from an SDT perspective in the context of romantic relationships, emerging evidence reveals that perceptions of autonomy support from close others are associated with greater weight-loss (Gettens, Carbonneau, Koestner, Powers, & Gorin, 2018; Gorin et al., 2014; 2019; Ng et al., 2014;

Powers et al., 2008), whereas autonomy-limiting behaviors enacted by close others are not associated with weight loss (Gorin et al., 2014; 2019; Powers, Koestner, & Gorin, 2008). Additionally, one study found that agents' daily autonomy support was concurrently associated with targets' greater daily exercise (Martire et al., 2013). Thus, although research has primarily focused on the effects of partners' use of autonomy-supporting/limiting strategies on health *outcomes* (e.g., weight), these findings can be extended to *behavior*, such that autonomy-supporting strategies should facilitate positive health behavior change and autonomy-limiting strategies should inhibit positive health behavior change.

Social Control Theory

Another important perspective on social control that can be used in conjunction with SDT to form predictions about the effectiveness of social control for health and relationships is social control theory (SCT). SCT is a theoretical framework that is based primarily on the dual-effects model, which posits that social control leads to two distinct responses from targets: positive health behavior change and increased negative affect (Hughes & Gove, 1981; Lewis & Rook, 1999). Researchers applying SCT have predominantly focused on the distinction between positive social control and negative social control (Craddock et al., 2015). Positive and negative social control are both defined based on their means, such that positive social control reflects the use of persuasion, rational arguments and discussion, modeling, and positive reinforcement, whereas negative social control reflects the expression of negative emotions by the agent or attempts to evoke negative emotions from the target (Lewis & Butterfield, 2005).

Research applying the SCT framework typically assesses positive and negative social control by asking individuals to view a list of strategies derived from research on social influence and qualitative interviews with married couples (Butterfield & Lewis, 2002; Lewis et al., 2004) and to indicate their likelihood of using each strategy (e.g., Lewis & Butterfield, 2005, Study 1) or their use of the strategies in the past (Burke & Segrin, 2017; Young, Burke, & Curran, 2019). The specificity with which social control strategies are measured is a strong point of many studies in this area. A limitation of this research is that the social control strategies are derived from theoretical and qualitative research that has not explicitly considered the relational causes and consequences of social control strategies when forming classes of strategies.

There are three extensions of the dual-effects model of social control that have been empirically tested. The domain-specific model distinguishes between positive and negative social control and argues that positive social control elicits positive emotions, whereas negative social control elicits negative emotions (Okun, Huff, August, & Rook, 2007; Tucker, 2002; Tucker & Anders, 2001). The mediational model builds on the domain-specific model and further specifies emotions as mediators between positive/negative social control and health behavior, respectively, such that positive emotions facilitate healthy behaviors and negative emotions inhibit or harm healthy behaviors (Okun et al., 2007; Tucker, Orlando, Elliott, & Klein, 2006). An extension of the mediational model adds two motivation-relevant mediators: motivation to change one's behavior and reactance, which refers to an impulse to reclaim one's freedoms and autonomy (Logic, Okun, & Pugliese, 2009).

Within the SCT framework, emotions are specified as a key target and determinant of behavior change. Consistent with this logic, a meta-analysis found that positive social control tends to be associated with positive emotions and shows small associations with health behavior ($d = 0.31$), whereas negative social control tends to be associated with negative emotions and is unassociated with health behavior ($d = -0.08$) (Craddock et al., 2015). In fact, negative social control was associated with doing the opposite of what the agent requests (i.e., backfiring behaviors) ($d = 0.65$), suggesting that enacting negative social control may be more harmful than doing nothing at all to attempt to change targets' behavior.

SCT does not make explicit theoretical assumptions about how positive and negative social control affect relationship behaviors and outcomes. However, different emotional responses to social control likely beget different behavioral responses, such that positive affect may elicit more positive relational behaviors and negative affect may elicit negative relational behaviors (Craddock et al., 2015). Relatedly, positive social control is positively associated with psychological well-being, whereas the inverse is true for negative social control (Craddock et al., 2015). Interestingly, a meta-analysis found that there is no evidence of an association between relationship satisfaction and social control (Craddock et al., 2015). However, this finding was based on a small number of studies ($k = 6$). The three studies that reported different effect sizes for positive/negative social control and relationship satisfaction provided preliminary support for the idea that positive social control is positively associated with relationship satisfaction, and the inverse is true for negative social control (Craddock et al., 2015). Thus, although research from an SCT perspective has not examined specific relational responses to different kinds

of social control strategies, associations between social control and affect, well-being, and relationship satisfaction suggest differential effects of positive and negative social control on emotional responses, which could then lead to different relational behaviors that affect outcomes like relationship satisfaction.

Integration of Self-Determination Theory and Social Control Theory

SDT assumes that attempts to directly influence a targets' behavior are inherently negative because they undermine the development of autonomous motivation. In contrast, SCT suggests that some forms of direct influence (e.g., positive social control) can be beneficial for targets because they serve a regulatory function that can push targets to engage in healthier behavior. Given that research has found positive effects for both autonomy-supporting strategies from an SDT perspective, and positive social control strategies on health behaviors from an SCT perspective, one way to reconcile these seemingly opposing perspectives and findings is to consider targets' perceptions of social control strategies as having implications for their health behavior as well as for their relational behavior. In a *social control situation* (i.e., a situation in which an agent enacts social control), targets are likely to make attributions for the agent's behavior that are not only based on *what* the agent is trying to change about their health behavior (e.g., "What is my partner trying to get me to change, and how easy is it for me to change that behavior?"), but also based on *why* the agent is enacting social control and what the implications of that social control are for the relationship (e.g., "My partner is trying to change my behavior because he cares about me and is committed to the relationship.").

These attributions should inform the effectiveness of social control for health behavior not only at the onset of social control enactment, but over time. For instance, if

the agent continues to use social control after the target has responded negatively or has not complied with the agent's request for change, social control, over time, could lead to backfiring behaviors, because the target may perceive that the agent has selfish motivations and/or does not respect their autonomy.

Importantly, no research to date has examined the effects of different kinds of social control strategies on relational behaviors in conjunction with health behaviors; neither has research tracked health behavior and relational behavior responses to social control over time to understand the reciprocal associations between them. Both SDT and SCT consider intrapersonal determinants of change (e.g., autonomous versus controlled motivation, positive versus negative affect), but neither explicitly accounts for the role of interpersonal variables – such as targets' attributions for agents' social control strategies or agents' attributions for targets' responses – in behavior change. Self-determination theory and social control theory can be integrated and extended to inform novel predictions about how targets should respond with relational and eating behaviors to social control.

Autonomy-Supporting and Autonomy-Limiting Social Control

One factor that likely determines whether social control predicts positive or negative health behavior and relationship outcomes is the type of social control strategy used by the agent. One way that agents enact social control is by using *social control strategies*, which are behaviors enacted by the agent with the intended goal of changing the target's behavior to be consistent with the agent's beliefs regarding the target or regarding what the target should do (Huelsnitz et al., 2018; Huelsnitz, Jones et al., *in preparation*). Conceptualizations of autonomy-supporting/limiting behaviors from SDT

and positive/negative social control strategies from SCT can be integrated to form a more comprehensive dimension of social control strategies as they relate to both health and relational responses.

SDT typically assesses autonomy-supporting/limiting behaviors more generally (e.g., "I feel that my important others have provided me with choices and options," ISCQ; Williams et al., 2006), whereas SCT typically assesses specific positive and negative social control strategies (e.g., "How often does your partner repeatedly remind you to engage in the health behavior?") (Lewis et al., 2004). It is important to distinguish between specific social control strategies (rather than general social control) because research has shown that the same social control strategies can be perceived differently by targets and that responses to specific strategies can vary based on how targets feel about the attempts (Okun et al., 2007; Tucker & Anders, 2001; Tucker & Mueller, 2000). Additionally, general assessments of the extent to which an agent engages in autonomy support offers little guidance as to what kinds of behaviors, specifically, agents can engage in that will induce positive relational and health responses from targets. The current research applies SDT's concept and measurement of general autonomy support to specific social control strategies used in SCT research and conceptualizes social control strategies on a dimension of autonomy support to autonomy limitation.

The dimension from *autonomy support* to *autonomy limitation* reflects the extent to which a social control strategy bolsters the target's autonomy over a behavior (autonomy support) versus the extent to which a social control strategy limits the target's autonomy over a behavior (autonomy limitation). Social control strategies that are high in autonomy support are ones that offer advice or encouragement to the target to engage in

the health behavior but leave the decision to act primarily in the hands of the target. Examples of autonomy-supportive strategies include modeling the health behavior for the target, encouraging the target to make their own choices, and complimenting the target when they make healthy choices. Social control strategies that are high in autonomy limitation are ones that constrain the target's behavioral decisions and that apply pressure to the target to think, feel, or behave in a specific way. For instance, autonomy-limiting strategies include attempting to elicit negative affect (e.g., guilt) from the target when they do not engage in the health behavior, punishing the target when they do not engage in the behavior, and changing the target's environment in ways that limit their behavioral choices (e.g., keeping the fridge full of frozen fruit, rather than ice cream).

Determining whether autonomy-supporting/limiting social control strategies are effective or not requires researchers to not only consider the relational context (e.g., romantic relationships), but also (1) the initial effects of the strategy used versus the effects of the strategy over time, (2) the potential range of health behavior responses that could be elicited, (3) the potential range of relational responses that could be elicited, and (4) the health behavior context in which social control occurs.

Immediate and Long-Term Effects of Social Control

The extent to which social control strategies are autonomy supporting versus autonomy limiting should be an important determinant of a target's health and relational responses, and these effects should emerge both initially (i.e., immediately following the agent's enactment of the strategy) and over time. Most research, to date, has either assessed the effects of social control retrospectively (e.g., targets are asked to recall a time the agent tried to change their health behavior; Tucker & Anders, 2001), or has

assessed social control more generally across a period of time (e.g., targets are asked to report on how often the agent uses different types of social control strategies; August, Abbamonte, Markey, Nave, & Markey, 2016). Although these studies are helpful for assessing the long-term, broad effects of social control on health behavior, they may not allow for a sensitive test of how specific strategies can lead to specific target response patterns. It is often the daily habits that matter most in determining health and relationship outcomes; thus, it is not only important to understand individuals' general evaluations of social control, but to understand what specific strategies are enacted on a daily basis that results in positive and negative outcomes for health and relationships.

For instance, it could be the case that autonomy-limiting strategies are effective at changing the target's health behavior or generating positive relational responses initially, but that the effectiveness decays over time. Likewise, autonomy-supporting strategies may be ineffective initially if they do not sufficiently motivate the target to change their behavior, but could become effective over time if they engender autonomous motivation. If the agent's use of social control and the targets' responses are measured on an infrequent basis, these important differences in trajectories may remain hidden. Therefore, it is important to assess both immediate and long-term responses to social control, for both health behavior and relational behaviors.

The current research examines (a) initial health and relational responses to social control (i.e., intercept effects); (b) the change in valence (i.e., healthiness, constructiveness) of responses over time (i.e., slope effects); and (c) if responses do change in valence over time, the time point at which they change (i.e., inflection point). There are several reasons why the current research focuses on intercept effects, slope

effects, and the inflection point. First, examining the effects of social control on initial responses will reveal how targets respond after a one-time use of a given strategy, which is important because it is likely to determine agents' subsequent use of social control. Initial reactions from the target should either reinforce or punish the agent's use of social control, which should determine their future use of social control strategies. Second, testing the effects of social control on the change in valence of health and relational responses over time will show whether the repeated use of different social control strategies elicits the same target responses over time, or whether repeatedly using different strategies can have positive or negative effects on health and relational behaviors. Finally, testing the effects of social control on the location of the inflection point in time will determine whether there is a critical point at which the repeated use of different social control strategies switches from having positive effects to having negative effects, or vice versa, on targets' health and relational responses.

Effects of Social Control on Health Behavior

Effects of Autonomy-Supporting Social Control on Health Behavior

With regard to determining health behavior responses, SDT posits that the provision of autonomy support, over time, will foster autonomous motivation, which is then linked to health behavior change in the short-term (e.g., 12 weeks; Wilson, Rodgers, Blanchard, & Gessell, 2003) and long-term (e.g., Silva et al., 2011) (see also Ng et al., 2012). SDT does not make formal predictions about how long autonomy support needs to be provided in order to instill enough autonomous motivation for behavior change, but it is likely that there is a lag between the initial provision of autonomy-supporting strategies and the development of autonomous motivation that promotes lasting behavior change.

Additionally, although there has been some experimental research showing that autonomy-supporting environments can facilitate autonomous motivation (e.g., Peng, Lin, Pfeiffer, & Winn, 2012), most of the research examining health behaviors from an SDT perspective is correlational and there is little experimental evidence examining how autonomy-supporting strategies lead to autonomous motivation and subsequent health behavior change (but see Gorin et al., 2017; Halvari, & Halvari, 2006). SCT suggests that autonomy-supporting strategies (i.e., positive social control strategies) will be more likely to promote engagement in healthy behaviors because they elicit positive beliefs, such as optimism, which can serve to increase targets' motivation and readiness to pursue healthier behaviors (Logic et al., 2009). Therefore, although it is unclear whether autonomy-supporting strategies will elicit healthier behaviors initially (because there may be limited pressure on the target to change their own behavior), SDT predicts that autonomy-supporting strategies should lead to healthier behavior over time. SCT predicts that autonomy-supporting strategies will predict healthier behavior, generally.

Effects of Autonomy-Limiting Social Control on Health Behavior

In contrast, autonomy-limiting strategies are more likely to beget controlled motivation, which, according to SDT, is unrelated to sustaining healthy behaviors in the long term (Ryan, Patrick, Deci, & Williams, 2008). SCT theorizes that autonomy-limiting strategies (i.e., negative social control strategies) will be less likely to facilitate healthier behavior (and may even result in more unhealthy behaviors) because they elicit negative beliefs and emotions, such as resentment, guilt, or anger. These emotions engender reactance, such that targets attempt to resist the social control (e.g., by hiding unhealthy behavior; August et al., 2016; Logic et al., 2009). However, SCT also posits that social

control may serve a regulatory function, such that autonomy-limiting strategies erect barriers to engaging in unhealthy behaviors and may compel targets to comply with social control attempts (at least in the short-term). Thus, autonomy-limiting strategies may lead to initial compliance (e.g., target engages in healthy behavior), but they are likely to lead to non-compliance over time, which could manifest in hiding unhealthy behavior, backfiring behaviors, or ignoring the agent's request.

In the context of romantic relationships, in which targets may be highly motivated to appease the agent, autonomy-limiting strategies should be especially likely to result in behavioral compliance initially. Thus, autonomy-limiting strategies may be initially effective in producing health behavior change, but the health behavior change is unlikely to be maintained over time.

Effects of Social Control on Relational Behavior

Range of Relational Responses to Social Control

Autonomy-supporting and autonomy-limiting strategies are likely to elicit both constructive and destructive relational responses. No research has identified the range of relational responses that could be elicited in a social control situation. However, it is likely that social control situations share similarities with conflict discussions in relationships, as couples report that social control can generate conflict in their relationship (Sullivan, Pasch, Bejanyan, & Hanson, 2010). The accommodation framework (Rusbult, Verette, Whitney, Slovik, & Lipkus, 1991), which was developed based on interdependence theory (Thibaut & Kelley, 1959) and the investment model (Rusbult, 1980), has guided theories and research on how romantic partners manage conflicts and maintain their relationship (e.g., Ogolsky, Monk, Rice, Theisen, &

Maniotes, 2017). This framework is used in the current research as a theoretically- and empirically-grounded starting point for the operationalization of relational responses to social control.

Research within the accommodation framework has often used the exit-voice-loyalty-neglect typology to classify relational responses to conflict (EVLN; Rusbult et al., 1991; Rusbult, Zembrodt, & Gunn, 1982; see also Hirschman, 1970). The typology classifies relational responses according to two dimensions: constructiveness/destructiveness and activity/passivity. The labels refer to the impact of a reaction on the relationship (Yovetich & Rusbult, 1994). *Exit* refers to engaging in behaviors that actively destroy the relationship (i.e., relationship dissolution), *voice* refers to behaviors that are active and attempt to improve relationship conditions (e.g., discussing problems, compromising, seeking solutions, changing oneself), *loyalty* refers to passively but optimistically waiting for conditions to improve (e.g., "waiting it out"), and *neglect* refers to passively allowing the relationship to deteriorate (e.g., ignoring one's partner, refusing to discuss problems, spending less time with one's partner) (Rusbult et al., 1982; Rusbult et al., 1991).

Although social control situations may be likely to incite conflict (thus making the EVLN typology relevant), there is also an opportunity for targets to respond with appreciation and gratitude if they perceive that the agent is enacting social control out of concern for their health, for example (Logic et al., 2009). Thus, the current research modifies the EVLN typology to include broader concepts of constructiveness/destructiveness, such that exit and neglect behaviors are destructive for

the relationship, whereas voice and appreciation/gratitude behaviors are constructive for the relationship and loyalty behaviors are neutral for the relationship.

Effects of Autonomy-Supporting Social Control on Relational Behavior

Although research has not examined the effects of specific autonomy-supporting/limiting strategies on relational responses, SDT and SCT can be used to generate such predictions. SDT posits that the provision of autonomy support facilitates the fulfillment of the needs for autonomy, competence, and relatedness (Ng et al., 2012). Individuals who feel more autonomous in their relationship report greater relationship satisfaction (e.g., Knee, Lonsbary, Canevello, & Patrick, 2005), and individuals who experience greater need fulfillment report better post-conflict relationship quality (Patrick et al., 2007). Thus, the use of autonomy-supporting strategies is likely to elicit constructive relational responses. And, if the agent responds to the target's constructive behavior with similarly constructive behavior, a pattern of reciprocity in constructive relational behaviors may persist over time. Thus, autonomy-supporting strategies should be likely to elicit constructive relational responses initially and over time.

Effects of Autonomy-Limiting Social Control on Relational Behavior

In contrast, autonomy-limiting strategies may be unlikely to lead to the fulfillment of autonomy, competence, and relatedness. Targets who do not feel as though these needs are being met may be more likely to engage in destructive relational responses. SCT similarly posits that autonomy-limiting strategies can elicit the negative emotions of anger and resentment, which can lead to reactance (Logic et al., 2009). In the context of health-related social control, targets could react with behavioral noncompliance, or they could react with destructive relational responses. In other words, autonomy-limiting

strategies may lead targets to enact the health behavior the agent requests, but to show their reactance by spending less time with the agent (e.g., the target may eat alone more often) or starting arguments with the agent.

According to interdependence theory, when one partner engages in destructive relational behaviors, the other partner is often inclined to reciprocate with destructive behavior (Yovetich & Rusbult, 1994). Thus, if the target perceives the agent's social control as destructive, the target may be more likely to respond with similarly destructive relational behavior than if the target perceives the agent's social control as constructive. However, research has shown that transformation of motivation can lead partners to disrupt reciprocal patterns of destructive responding and to engage in constructive behavior (Yovetich & Rusbult, 1994). Therefore, autonomy-limiting strategies are likely to lead targets to respond initially and over time with destructive relational behaviors, unless something about the situation leads targets to undergo transformation of motivation.

The Moderating Role of Target Perceptions in Reactions to Social Control

One factor that may affect transformation of motivation and moderate the effects of social control on health behavior and relationship outcomes is the target's perceptions of the agent's motives for using social control. In romantic relationships, agents can have various motives for enacting social control, such as wanting the target to become healthier, wanting to engage in healthy behaviors together with the target (Burke & Segrin, 2017), or wanting to improve the target's appearance (Lewis & Butterfield, 2005; Markey, Gomel, & Markey, 2008). One study found that having long-term motives for a target's health (e.g., being motivated to help the target be healthy in the long-run) is

associated with increased provision of autonomy-supporting social control and autonomy-limiting social control, whereas having short-term motives (e.g., wanting to avoid relational conflict) is associated with decreased provision of social control (Berzins, LaBuda, & Gere, 2020). Additionally, agents can have both health-relevant motivations for enacting social control (e.g., reducing health risks associated with the health issue) and relational or partner-focused motivations for enacting social control (e.g., supporting the partner's personal growth) (Tripathee, 2019).

Although evidence suggests that targets' responses to social control attempts are due, in part, to their perceptions of the attempts (Deichert, Fekete, Boarts, Druley, & Delahanty, 2008; Okun et al., 2007; Sullivan, Pasch, Schreier, & Healy, 2018; Tucker & Anders, 2001), the conditions under which social control elicits specific health and relational responses are unclear. Given that social control could lead targets to exert effort in changing their own health behavior, or could lead targets to engage in relational behaviors that could be detrimental for the relationship, targets are likely to consider the motives of the agent prior to reacting to social control (even if target perceptions are likely to be inaccurate; see Berzins, LaBuda, & Gere, 2018).

What motives are likely to be important in determining targets' reactions to social control? In romantic relationships, the extent to which motives are independent (i.e., self-serving) versus interdependent (i.e., partner/relationship-serving) should affect targets' reactions to social control because these motives are likely associated with different implications for the relationship between the agent and the target. If a target perceives that the agent is enacting social control for self-serving reasons (e.g., the agent is embarrassed by the target's behavior), this may communicate that the agent does not

respect the target's autonomy, desires control or power over the target's behavior, or has not experienced transformation of motivation – all cues that the agent is not acting out of interdependence. In contrast, if a target perceives that the agent is enacting social control for partner-serving reasons (e.g., the agent is concerned for the target's health), this may communicate that the agent cares about the target and feels interdependent with the target. Thus, independent motives for social control are likely to be perceived negatively by the target and should result in reactance to social control attempts, whereas interdependent motives are likely to be perceived positively and should result in compliance from the target.

Lewis and Butterfield (2005) applied social control theory to examine how different motives (attempting to change targets' behavior due to appearance concerns versus health concerns) interact with different social control strategy types (positive and negative strategies) to predict health behavior change intentions (e.g., "Would you change your behavior in the intended direction, not change your behavior, or change your behavior in the opposite direction intended?") and emotional reactions. Targets read hypothetical scenarios in which their romantic partner used negative strategies or positive strategies to change their smoking or exercise behaviors. The results showed that targets who perceived that the agent enacted social control due to health-based motives reported that they would experience more positive emotions than targets who perceived that the agent enacted social control due to appearance-based motives. However, the researchers did not find that motive type interacted with strategy type to predict either behavior change or emotions (positive strategies predicted more behavior change intentions, but otherwise there were no main effects of strategy type on emotions). Importantly, their

study did not assess changes in responses over time. The current research builds on this work and considers how combinations of different motives and social control strategies may be perceived differently by targets over time, subsequently leading to different response patterns.

How might targets' attributions for the agent's motives interact with the type of social control to determine health behavior and relational responses over time? It is important to consider that autonomy-supporting/limiting behaviors could take on different meanings if the target perceives them to be motivated by independent or interdependent reasons. The following sections illustrate specific predictions regarding the moderating effects of agent motives on the relationship between different types of social control on health and relational responses.

Autonomy-Supporting Predictions

The combination of autonomy-supporting strategies with interdependent motives is likely to communicate to the target that the agent respects the target's autonomy and is motivated to help the target change because the agent cares about the target. Attributions of interdependent motives should act as a booster of autonomy-support, such that agents are behaving in ways that reflect caring, responsiveness, and respect for the target's autonomy, and their interdependent motives are consistent with these actions. Thus, targets should consistently respond with constructive relational behaviors and there should be no inflection point. With regard to health behavior, given that the agent is providing a moderate - but not excessive – amount of pressure to the target to change, the target may choose to engage in slightly healthier than usual behavior initially. Over time, however, the target should be more likely to develop autonomous motivation to change

their behavior and should respond with increasingly healthier behaviors. The inflection point (i.e., point in time at which the target changes from slightly healthier behavior to significantly healthier behavior) should occur later when autonomy-supporting strategies are combined with interdependent motives than when autonomy-supporting strategies are combined with independent motives. Although a delay in health behavior change could be conceptualized as a negative outcome, it fits the predictions made by SDT; autonomy-supporting strategies and interdependent motives should facilitate autonomous motivation, which takes time to develop but is more strongly associated with health behaviors than controlled motivation (Hagger, Hardcastle, Chater, Mallett, Pal, & Chatzisarantis, 2014).

Whereas interdependent motives should bolster the positive effects of autonomy-supporting strategies, independent motives should dampen their positive effects. The combination of autonomy-supporting strategies with independent motives should communicate to targets that the agent is motivated by their own self-interests, but that the agent respects the target's autonomy. Thus, the target is unlikely to be initially bothered, relationally, by the agent's use of social control, and is likely to respond initially with constructive relational behaviors. However, given that the agent's motives are self-serving, this may lead the target to perceive the agent's social control as destructive, which would lead the target to reciprocate with more destructive behaviors over time. Therefore, whereas the combination of autonomy-supporting strategies with interdependent motives does not have an inflection point for relational behaviors, when combined with independent motives, the inflection point should occur earlier in time.

Additionally, autonomy-supporting strategies combined with independent motives may lead the target to perceive the strategies as manipulative or controlling, so they should be unlikely to facilitate long-term autonomous motivation for the target to change their health behaviors. Targets may also not feel as though there is a compelling reason to change their behavior and targets may even feel irritated that their partner wants to change their behavior, which could result in engaging in fewer healthy behaviors over time. Thus, targets are likely to respond initially with neutrally healthy behavior, and with less healthy behaviors over time, with the inflection point occurring earlier than when compared to autonomy-supporting strategies combined with interdependent motives.

Autonomy-Limiting Predictions

The combination of autonomy-limiting strategies with interdependent motives should communicate that the agent cares about the target, but is expressing that care and concern with behaviors that do not support the target's autonomy. Interdependent motives may buffer negative effects of autonomy-limiting strategies by promoting transformation of motivation and making long-term goals for the relationship more salient (Yovetich & Rusbult, 1994). However, if the agent continues infringing upon the target's autonomy over time, it is likely that the target will grow weary of the agent's social control strategies and the interdependent motives will lose their buffering effect. Thus, although the target should be initially patient with the agent and respond with behavioral compliance and neutral or slightly constructive relational responses, the positivity of these responses is likely to deteriorate over time. The inflection point should occur later than when autonomy-limiting strategies are combined with independent motives.

Additionally, targets should be motivated to engage in healthy behavior initially, as the target may worry about disappointing the agent if they do not comply, and there is also considerable pressure to comply. However, targets are likely to respond with less healthy behavior over time, because the use of autonomy-limiting strategies is likely to beget controlled motivation (meaning that the target does not have a personally meaningful reason to engage in the behavior). The inflection point should occur later than when autonomy-limiting strategies are combined with independent motives.

Interdependent motives should buffer the negative effects of autonomy-limiting strategies, whereas independent motives should exacerbate their negative effects. The combination of autonomy-limiting strategies with independent motives should communicate that the agent does not respect the target's autonomy; nor is the agent motivated by concerns for the target. This situation should activate targets' immediate self-interests and lead them to act based on their own goals and strivings for autonomy, competence, and relatedness. Thus, targets should respond with behavioral non-compliance and engage in less healthy behavior than usual initially and over time and more destructive relational behaviors initially and over time. The inflection points should occur earlier than when autonomy-limiting strategies are combined with interdependent motives.

Figure 1 illustrates the expected patterns of health and relational responses over time (across different strategy types and motive types). Predictions reflect targets' responses after the first social control attempt made by the agent (i.e., intercept effects), the inflection point of responses (referred to as the "knot" in piecewise linear mixed effects models) and the trajectory of the target's responses over time (i.e., slope effects).

Hypothesis 1: The effect of autonomy-supporting and autonomy-limiting social control strategies on relational behaviors will be moderated by motive type. Specifically:

> **Hypothesis 1a:** Autonomy-supporting strategies combined with interdependent motives will elicit constructive relational behaviors initially and over time, and there should be no inflection point, in comparison to when autonomy-supporting strategies are combined with independent motives, which should elicit fewer constructive behaviors over time and an earlier inflection point.

> **Hypothesis 1b:** Autonomy-limiting strategies combined with interdependent motives should elicit neutral or slightly constructive relational behaviors initially but more destructive relational behaviors over time (i.e., a steeper slope), and a later inflection point, in comparison to when autonomy-limiting strategies are combined with independent motives (which should also be associated with destructive behaviors, but the slope will be flatter).

Hypothesis 2: The effect of autonomy-supporting and autonomy-limiting social control strategies on health behavior responses will be moderated by motive type. Specifically:

> **Hypothesis 2a:** Autonomy-supporting strategies combined with interdependent motives will elicit healthier than usual behavioral responses initially, and increasingly healthier than usual behaviors over

time, and the inflection point will occur later, in comparison to when autonomy-supporting strategies are combined with independent motives.

Hypothesis 2b: Autonomy-limiting strategies combined with interdependent motives will elicit healthier behavioral responses initially, but less healthy behaviors over time, and the inflection point will occur later, in comparison to when autonomy-limiting strategies are combined with independent motives.

Health Behavior Context of Social Control

An additional consideration when determining the effectiveness of social control is the health behavior context. Social control has been examined across a variety of health behavior contexts, such as smoking cessation (e.g., Ochsner et al., 2015; Ochsner et al., 2014; Scholz et al., 2013), physical activity (e.g., Hohl et al., 2018), adherence to medical recommendations (e.g., pelvic-floor exercises following prostatectomy; Burkert, Knoll, Luszczynska, & Gralla, 2012), and weight loss efforts (e.g., Gorin et al., 2014). The current research focused on eating behavior as the targeted health behavior for several reasons. First, romantic partners have considerable opportunities to regulate (or attempt to regulate) each other's eating behavior. People who are in committed romantic relationships are more likely to report eating with other people than are those who are not in committed romantic relationships (Larson, Nelson, Neumark-Sztainer, Story, & Hannan, 2009), and qualitative data suggests that when people enter into cohabiting and/or marital relationships, there is an increase in sharing evening meals with one's partner (Bove et al., 2003; Marshall & Anderson, 2002). Additionally, even among newly

married couples, partners often share cooking responsibilities and decision-making about food purchases (Bove et al., 2003; Marshall & Anderson, 2002).

Eating is a health behavior that individuals engage in on a daily basis; thus, partners have multiple opportunities to use social control with regard to each other's eating behavior. Given that agents have multiple and varied opportunities to enact social control in the context of eating behavior, there should be a greater likelihood of prospectively capturing social control attempts in the context of eating than in other health behavior contexts. For instance, if another, less frequent health behavior was examined (e.g., scheduling an annual physical appointment), it would be more difficult to prospectively assess social control strategies used, as well as to capture the relational and health behaviors that occur in response to social control attempts. Study 2 uses a daily diary study design in order to maximize the likelihood of capturing social control attempts with regard to eating.

Second, research shows that romantic partners are often motivated to use social control with regard to each other's eating behavior. Unhealthy eating habits are among the most frequently reported health behaviors that romantic partners try to get each other to change (Lewis & Butterfield, 2007; Tucker & Mueller, 2000). Additionally, romantic partners can have independent and interdependent motives for using social control to try to change each other's eating. Given that unhealthy eating behavior can have important implications for individuals' health outcomes (e.g., Kant, 2004), some agents may be motivated to use social control to help the target to become happier, healthier, and to increase their lifespan. Other agents may be motivated to use social control for self-serving reasons, such as wanting the target to change their eating behaviors in order to

lose weight and change their appearance (Markey et al., 2008) or wanting the target to change their eating habits in order to help the agent with their own dietary goals. Thus, eating behavior is a context in which it is plausible that one's romantic partner could and would attempt to use social control.

Finally, some research suggests that romantic partners – intentionally or unintentionally – affect each other's eating behavior. For instance, partner concordance for unhealthy eating behavior was found to be strongest for married couples and couples who lived together for at least 2 years, which suggests that partners do affect each other's eating behavior, although the extent to which they do so intentionally versus unintentionally is unclear (The & Gordon-Larsen, 2009). Cohabitation is also associated with increases in body weight, which is affected by eating behavior (Anderson, Marshall, & Lea, 2004). Thus, some evidence suggests that romantic partners do affect each other's eating behavior, and it is important to understand the extent to which social exchange processes such as social control can be harnessed to increase positive health behavior change while decreasing harm to the relationship.

Iterative Paradigms

Given evidence that the use of social control can have negative impacts on individuals' affect, health behavior, and relationship satisfaction (Craddock et al., 2015), it is challenging to manipulate perceptions of agent motives or the types of social control strategies used without harming existing relationships. One solution is to use an iterative paradigm, such as Choose-Your-Own-Adventure stories (Vicary & Fraley, 2007), sequenced conflict scenarios (Merolla & Harman, 2018), or the Response Escalation Paradigm (REP; Huelsnitz, Farrell, Simpson, Griskevicius, & Szepsenwol, 2018), in

which individuals view evolving scenarios with multiple decision points at which they can choose how to respond to their partner's behavior. Iterative paradigms enable the use of high experimental control, while simultaneously boosting the realism of hypothetical scenarios. Iterative paradigms have been used to show that the kinds of choices individuals make (e.g., relationship-enhancing or relationship-harming) impact their perceptions of their relationship quality with their partner (Vicary & Fraley, 2007) and that individual differences such as attachment orientation (Huelsnitz et al., 2018) and relationship-specific hope (Merolla & Harman, 2018) can lead individuals to respond to the same scenarios with different emotional and behavioral reactions.

Iterative paradigms are a useful tool for studying target responses to different kinds of social control strategies for several reasons. First, the behaviors used by the agent and the behavioral response options available to the target can be held constant throughout the social control scenario, thus allowing researchers to test how targets' responses differ as a function of the agent's motives and the agent's use of specific social control strategies. Second, iterative paradigms enable researchers to capture data on variations in responses over time, which allows one to examine not only the initial response to a given social control strategy, but also the rate of change in responses and the inflection point. Finally, iterative paradigms are high in mundane and experimental realism, which increases the likelihood that results will be generalizable beyond the lab. Study 1 uses an iterative paradigm to examine how targets' responses to the same types of social control strategies (autonomy-supporting versus autonomy-limiting) differ as a function of the agent's motives for enacting social control (interdependent versus independent).

Current Research

The current research examines how the social control strategies that romantic partners enact to change each other's eating behavior evoke unique relational and eating behaviors over time that affect health and relationship outcomes. Drawing from social control theory and self-determination theory, this research tests whether targets' relational responses and eating behavior responses to autonomy-supporting and autonomy-limiting strategies differ as a function of whether the use of the strategies is attributed to interdependent or independent motives. Two pilot studies were conducted in order to help develop two Social Control Scenarios (SCS): an autonomy-supporting SCS and its autonomy-limiting counterpart. The SCS is an iterative paradigm designed to mimic real-world instances of one's romantic partner enacting eating-related social control. At each stage of the SCS, targets are asked to visualize their partner (the agent) engaging in behaviors that reflect either autonomy-supporting or autonomy-limiting social control. Then, targets indicate how they would respond relationally (by making a constructive, neutral, or destructive relational choice) and how they would respond in terms of the healthiness of their eating behavior at their next meal.

Then, two studies, one in the lab and one in the field, tested whether the same social control strategies are differentially effective as a function of targets' attributions for the agent's behavior. In Study 1, individuals viewed the SCS and responded with regard to their eating and relational behavior (testing Hypotheses 1 and 2). In Study 2, individuals completed daily diaries assessing whether the agent engaged in social control strategies and their attributions for the agent's social control attempt, as well as individuals' relational and eating behaviors that day. Study 2 conceptually replicates

aspects of Hypothesis 1 by examining whether there are differences in the constructiveness of targets' relational responses and the healthiness of their eating choices the same day and the next day after the agent enacts autonomy-supporting and/or autonomy-limiting strategies. Study 2 tests whether these differences are moderated by targets' perceptions of agents' motives as high or low in interdependence. Additionally, Study 2 examines exploratory questions such as whether targets' relational and eating responses affect agents' subsequent use of different social control strategies, and whether relationship quality moderates this association.

Pilot Study 1

The primary goal of Pilot Study 1 was to identify social control strategies that individuals perceived as similar in the degree to which they are autonomy-supporting versus autonomy-limiting, strategies perceived as similar in directness, and strategies perceived as similarly easy to imagine occurring in real life (i.e., realism). Of these priorities, realism was identified a priori as the least important feature of the strategies, such that as long as strategies met the criteria for the autonomy-supporting to autonomy-limiting dimension and were perceived by individuals as moderately direct, they were included in the Social Control Scenarios used in Pilot Study 2.

Directness

Although this research focuses on the distinction between strategies as high in autonomy support versus high in autonomy limitation, another feature of social control strategies – directness – should also be important in determining targets' reactions to social control. *Directness* reflects the extent to which a social control strategy is intended to explicitly target and address the health behavior. Social control strategies that are high

in directness include actions such as telling the target to change the behavior and asking the target if they have made steps toward changing the behavior. Social control strategies that are low in directness are ones that target and address the health behavior, but do so by modifying the context in which the behavior is performed/considered or factors that are peripherally linked to the behavior. Examples include engaging in non-verbal gestures (e.g., glaring, showing affection) when the target engages or does not engage in the behavior, giving the target space and showing patience in service of changing the target's health behavior, and engaging in the behavior with the target. Ultimately, if a strategy is high in directness, it is a clear manifestation of the agent's social control goals that can be addressed by the target, whereas strategies low in directness are more difficult for the target to "call out." Directness is important because social control strategies that are especially low in directness should be less likely to elicit variability in targets' relational and eating responses (presumably because it would be easier for targets to ignore the agent's behavior). Therefore, one goal of Pilot Study 1 is to obtain ratings of directness in order to hone in on strategies that should be more likely to elicit different responses across targets.

Study Design

The decision was made a priori to collect data in two phases. In the first phase, 100 individuals from Amazon's Mechanical Turk (MTurk) who met eligibility criteria (see below) completed the survey online. After consenting to participate, individuals viewed the interdependent motive and the independent motive (the order in which each motive was presented was random) and responded to the same set of questions about each specific motive. Then, participants were randomly assigned to view one of two sets of 12

social control strategies, which were presented in a random order. Each set contained 10 unique social control strategies (a mixture of autonomy-supporting and autonomy-limiting strategies). Additionally, two social control strategies were rated by all participants to assess whether there were any differences in ratings as a function of which set of strategies participants were randomly assigned to view.

After 100 participants had completed the survey, the "consistency" of the data was examined. Consistency was operationalized as having a high proportion of participants (at least 66% of participants) whose responses fell within a specific range (see Analyses for specific ranges). In the case that the data were not consistent, an additional, unique sample of 50 participants from MTurk would be recruited and consistency would be reevaluated. The methods and analytic plan were pre-registered at https://osf.io/mqpcv/.[1]

Method

Participants

Individuals were recruited from Amazon's Mechanical Turk (MTurk). Individuals were eligible to participate if they were at least 18 years old, currently in a cohabiting romantic relationship, reported eating habits that were *extremely unhealthy* to *somewhat healthy*, reported being at least *somewhat interested* in improving their eating habits, passed a Captcha, and reported eating at least five meals per week with their partner, on average, most weeks (see Appendix A for inclusion criteria across the studies).[2] These

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[1] The pre-registered plan was to collect 75 individuals in the first phase of data collection and 75 individuals in the second phase. Instead, we collected 100 individuals in the first phase and 50 individuals in the second phase.

[2] Qualitative research (e.g., Bove et al., 2003) shows that dinner is the meal that partners are most likely to eat together, as many people do not eat breakfast or eat breakfast and lunch at work. Thus, eating with one's partner for 5 out of 7 meals per week seems fairly average and was

inclusion criteria were used because research suggests that agents are more likely to use social control with targets that engage in unhealthy behaviors (Lewis & Butterfield, 2005, Study 1; Tucker & Anders, 2001), as well as with targets that have a desire to change their health behavior (Butterfield & Lewis, 2002). Thus, these inclusion criteria were intended to increase the likelihood that the participants had already experienced or would experience social control in the future from their romantic partner, which increases the realism of the studies.

As per a priori data collection plans, participants were recruited in two batches: the first batch included 100 participants and the second batch included an additional 50 participants (for a total of 150 participants). Participants who reported that they were extremely distracted, did not complete the survey in one sitting, or were highly inattentive were excluded from analyses ($n = 13$) and were not included in the calculation of the descriptive statistics (see Table 1).

The final sample consisted of 137 individuals (54% identified as male; 69% identified as White / Caucasian). Participants were in middle-adulthood (mean age = 37.46 years old) and well-educated (57% of participants had a 4-year degree or higher). Most participants were in married relationships with their partner (55%), were exclusive with their partner (91%), were in a relationship with someone of the opposite gender identity (87%), and had an average relationship length of 9.35 years. Participants ate an average of 9.66 meals with their partner each week. With regard to their health, most participants rated their own health as *good* (mean of 2.57 on a scale ranging from 1 = *poor* to 5 = *excellent*), rated the healthiness of their eating habits as *a mix of healthy and*

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chosen because targets should be eating with agents frequently enough that agents have opportunities to influence the target's eating behavior.

unhealthy (mean of 3.86 on a scale ranging from 1 = *extremely unhealthy* to 7 =

extremely healthy; participants who indicated their eating habits as *very healthy* or

extremely healthy were not eligible to participate), and indicated that they were *somewhat*

interested or *very interested* in improving their eating habits (mean of 3.52 on a scale

ranging from 1 = *not at all interested* to 5 = *extremely interested;* participants who

indicated they were *not at all interested* were not eligible to participate).

Measures

All measures can be viewed at https://osf.io/mqpcv/.

Partner Motives for Enacting Social Control

Participants were asked to imagine that they are interested in eating more

healthfully, but they have a hard time doing so. One day, they overhear their partner

talking on the phone to someone else about their eating behavior. Then, participants read

a description of what their partner said on the phone. The independent motives

manipulation was designed to cue that the agent was bothered by the target's eating

behavior and wanted the target to eat healthier so that they would not get sick (which

could negatively impact the agent).

The interdependent motives manipulation was similar in that the agent was

concerned for the target, but the agent was motivated by what is best for the target and

wanted the target to eat healthier so that they would feel happier and healthier. After

viewing each motive, participants indicated their agreement with six statements assessing

whether they perceive that their partner has independent versus interdependent motives

(e.g., "What I heard my partner say makes me think that my partner has my bests

interests at heart.") on a Likert-type 7-point scale (1 = *strongly disagree* to 7 = *strongly*

agree). See Appendix B for the motive manipulation and for items assessing perceptions of the motive manipulation. The items were developed based on emergent properties of interdependence, such as transformation of motivation, willingness to sacrifice, and commitment (Agnew et al., 1998).

The reliability of the items assessing perceptions of interdependence for the interdependent motive was low ($\alpha = .50$); however, the reliability of the items assessing perceptions of interdependence for the independent motive was sufficient ($\alpha = .82$). Dropping two items ("What I heard my partner say makes me think that my partner has their own best interests at heart" and "What I heard my partner say makes me think that my partner put his/her own happiness above my happiness") increased the reliability to $\alpha = .89$ (interdependent motive) and $\alpha = .92$ (independent motive). Thus, the two items were dropped and the remaining four items were averaged to form two scores of motive perceptions.

Social Control Strategies

Next, participants were instructed that they would view different behaviors that their romantic partner could use to try to change their eating behavior and were asked to indicate their perceptions of these behaviors according to whether they were limiting versus supportive, indirect versus direct, and how easy to imagine they were. To help participants understand the distinctions between autonomy support versus autonomy limitation, participants were shown definitions of autonomy support and autonomy limitation and were asked two questions to check their comprehension (see Appendix B). Participants were required to correctly answer these questions before they could proceed

in the survey. Similarly, participants viewed the definitions of directness versus indirectness and completed two comprehension questions.

Next, participants viewed a pre-determined, randomly selected subset of 10 social control strategies out of 22 total strategies, with the addition of two strategies that were shown to all participants (see Appendix B; strategies that were shown to all participants are marked with an asterisk). Participants were shown strategies that were determined by the author to be autonomy supporting and autonomy limiting and participants viewed a mixture of autonomy-supporting/limiting strategies. The social control strategies were contextualized according to the health behavior context (increasing fruit and/or vegetable consumption) and according to a real-life relationship situation (e.g., watching television and eating a snack with one's partner). Fruit and vegetable consumption were used as a proxy for healthy eating behavior because (a) the specificity likely makes it easier for participants to imagine the situation and (b) some research has found that fruits and vegetables are often included in individuals' conceptualization of healthy eating, regardless of the income level, race, or sex of the individual (e.g., Eikenberry & Smith, 2004).

The strategies were developed by compiling a list of strategies used in common measures of health-related social control (see Craddock et al., 2015; strategies were adapted from measures used in at least two of the studies reviewed by Craddock and colleagues: Butterfield & Lewis, 2002; Cohen & Lichtenstein, 1990; Lewis & Rook, 1999). Then, I removed strategies that were redundant across measures, that were highly indirect and not clearly targeting the health behavior (e.g. "My partner listened to me."), that were irrelevant to eating behavior (e.g., "My partner sets up doctor's appointments

for me."), and that required targets to have specific health goals (e.g., "My partner has been problem-solving about my goal attainment plan."). This method resulted in 22 social control strategies, which were then inserted into plausible social control situations that could occur in a romantic relationship in the context of eating behavior. The strategies were inserted into situations such that there was at least one autonomy-supporting strategy and one autonomy-limiting strategy in each context, so that the context (e.g., watching television and eating a snack with one's partner) would be equivalent between the two strategy types.

The strategies were presented in a random order for each participant. For each strategy, participants were asked to indicate the extent to which they found the strategy limiting versus supportive on a 7-point Likert-type scale (1 = *extremely limiting*; 4 = *neither limiting nor supportive [neutral]*; 7 = *extremely supportive*). Participants also indicated the extent to which they found each strategy indirect versus direct on a 7-point Likert-type scale (1 = *extremely indirect*; 4 = *neither indirect nor direct [neutral]*; 7 = *extremely direct*). Finally, participants indicated how easy it was to imagine that someone's partner could engage in each strategy on a 6-point Likert-type scale (1 = *extremely difficult to imagine* to 6 = *extremely easy to imagine*).

Demographics and Attentiveness Questions

Finally, participants completed demographic questions, which assessed their own and their partner's age, their race, their own and their partner's overall physical health, the meals they eat with their partner each week (i.e., which days of the week they eat different meals with their partner), their educational attainment, their relationship status with their partner, the relational exclusivity they have with their partner (e.g., "Are you

and your partner exclusive?"), their own and their partner's gender identity, and their relationship length. Participants also completed three items assessing their attentiveness while taking the survey: (1) How distracted were you while completing this survey? (1 = *not at all distracted* to 3 = *extremely distracted*), (2) Did you complete this survey in one sitting? (1 = *yes*, 2 = *no*), and (3) How attentive were you while completing this survey? (1 = *highly attentive* to 4 = *highly inattentive*).

Procedure

Participants who met the inclusion criteria and who consented to participate were asked to provide their romantic partner's first name or initials, which were inserted into different questions in the survey to enhance realism and to help participants better understand the items[3]. Next, participants were randomly assigned to view either the independent motive manipulation first or the interdependent motive manipulation first (all participants viewed both motives) and then rated each motive. Then, participants were randomly assigned to view one subset of 12 social control strategies and rate them on the three dimensions described above. Next, participants completed demographic questions and attentiveness questions. Finally, participants were thanked, debriefed, and provided with a code to receive their compensation ($1.00) through MTurk.

Results

Table 1 displays the demographic characteristics of the two samples of participants. There were no differences between the two samples on any of the demographic characteristics. Additionally, the results did not differ between the two

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[3] The partner's first name (provided by the target) was inserted into all questions and social control scenarios used in Pilot Study 1, Pilot Study 2, and Study 1, as well as all questions in Study 2.

samples of participants/waves of data collection, and thus the samples were collapsed for the results reported here.

Motive Perceptions

To examine whether the two motives were perceived as differing in interdependence, the scores for the four statements were aggregated for each of the motives to form a motive perception rating, such that lower scores indicate that the motive was perceived as more independent and higher scores indicate that the motive was perceived as more interdependent. To test whether the motives were perceived as significantly different, a paired samples t-test was run. The results showed that there was a significant difference between the motives in perceptions of interdependence, such that the independent motive ($M = 4.71$, $SD = 1.59$) was perceived as significantly less interdependent than the interdependent motive ($M = 5.80$, $SD = 1.21$), $t(136) = 7.46$, $p < .001$).

Examining Social Control Strategy Ratings for Consistency

After 100 participants completed the study, study recruitment was paused and ratings of the strategies were examined for consistency. A central goal of Pilot Study 1 was to find social control strategies that were rated similarly (e.g., similarly autonomy supporting or autonomy limiting) by participants. Prior to data collection, a target threshold of 66% of participants was set. For instance, social control strategies for which greater than or equal to 66% of the participants rated the strategy between 1-3 (1 = *extremely limiting* to 3 = *somewhat limiting*) were classified as limiting strategies. If considerably fewer than 66% of participants rated the strategy within a particular range, the data was considered to be inconsistent. Consistency in strategy ratings as autonomy

supporting or limiting was prioritized first, then consistency in strategy ratings as indirect or direct, and finally consistency in the realism of the strategy was the lowest priority. The results of the first round of the data consistency check revealed that, of the 22 strategies, nine of the strategies did not meet the consistency criteria. Thus, an additional 50 participants were recruited to complete the same survey. The results of the second round of the data consistency check revealed that only three of the strategies did not meet the consistency criteria (see Table 2 for proportions of participants who rated each strategy within the pre-specified ranges).

Two strategies were rated by both groups of participants (i.e., participants who viewed one set of strategies and participants who viewed the other set of strategies). For each of the two strategies, three linear regressions were conducted to examine whether there were differences in the ratings of the strategy as autonomy-limiting to supportive, indirect to direct, and difficult to easy to imagine (with participant group as the sole predictor). For the first strategy (Strategy 3a; see Table 2), participant group did not predict any of the outcomes: autonomy-limiting/supportive ($b = -.50$, $p = .145$), directness ($b = -.00$, $p = .997$), and ease of imagining ($b = -.28$, $p = .216$). For the second strategy (Strategy 14a, see Table 2), participant group did not predict autonomy-limiting/supportive ratings ($b = .02$, $p = .907$), nor ease of imagining ($b = -.09$, $p = .576$), but it did predict directness ($b = -.88$, $p < .001$). Thus, the second strategy was discarded (and not used in Pilot Study 2).

Eight strategies were rated by at least 66% of participants as *extremely supportive, very supportive*, or *somewhat supportive* and were retained for use in Pilot Study 2 as autonomy-supporting strategies. Of the eight autonomy-supporting strategies, three

strategies met the criteria for directness consistency (i.e., were rated by at least 66% of participants as *somewhat direct* to *extremely direct*), and the remaining five strategies fell between 47% and 65% of participants rating them as somewhat direct to extremely direct. Of the eight autonomy-supporting strategies, all strategies met the criteria for being easy to imagine (i.e., were rated by at least 66% of participants as *somewhat easy to imagine* to *extremely easy to imagine*).

There were fewer strategies that met the threshold for being categorized as autonomy-limiting strategies. Five strategies were rated by 56% to 65% of participants as *extremely limiting*, *very limiting*, or *somewhat limiting*. Given that the mean rating of these strategies fell between 3.05 and 3.58 (see Table 2), these strategies were retained for Pilot Study 2, but were revised in an effort to increase the extent to which they limit autonomy. Of the five strategies, four met the criteria for directness consistency, and one was rated by 61% of participants as *somewhat direct* to *extremely direct*. All five strategies met the criteria for being easy to imagine.

Discussion

The results from Pilot Study 1 showed that the independent and interdependent motives were perceived as significantly different with regard to the extent to which they reflected motivations for enacting social control that were in the best interest of the target versus the best interest of the agent. However, given that the independent motive was rated more neutrally than independent, the independent motive was revised for use in Pilot Study 2 and the revised motive and the original motive were rated by a new set of participants in Pilot Study 2.

The results also showed that most of the social control strategies that were designed to be autonomy supporting were rated as such and met the consistency criteria. However, many of the strategies that were designed to be autonomy limiting were rated more neutrally. This may be due to the independent motive – which was viewed by participants before rating the strategies – being more neutral and less independent than intended. In other words, when reading the strategies, participants may have reflected back to the motives they read about and may have been more likely to imagine that their partner enacted the strategies due to interdependent motives than due to independent motives (which were actually rated more neutrally). This is addressed in Pilot Study 2 by asking participants to rate the motives *after* viewing the social control strategies, rather than before viewing the strategies. The autonomy limiting strategies were also revised to be more limiting.

Pilot Study 2

Whereas the central goal of Pilot Study 1 was to assess the characteristics of social control strategies, the goal of Pilot Study 2 was to assess the valence of relational response options associated with the different social control strategies. The relational response options should be equivalent with regard to their constructiveness ratings and realism ratings across the stages of the SCS and across the two types of SCS (autonomy limiting versus autonomy supporting) so that any differences found in participants' response choices in Study 1 can be attributed to differences in the strategy type and motive type (rather than being attributed to variability in how constructive or realistic the response option is). Similarly to Pilot Study 1, the proportion of participants who rate responses within a certain range was examined.

Study Design

Similarly to Pilot Study 1, the decision was made a priori to collect data in two phases. In the first phase, 100 individuals from MTurk who met the inclusion criteria from Pilot Study 1 and who did not participate in either data collection phase of Pilot Study 1 were recruited to participate. After the first 100 participants completed the study, the consistency of the data was examined. Consistency was operationalized as having a high proportion of participants (at least 66% of participants) whose responses fell within a specific range (see Analyses for specific ranges). In the case that the data were not consistent, an additional, unique sample of 50 participants from MTurk would be recruited and consistency would be reevaluated. Given that the data were consistent after the first phase of data collection (see Analyses), an additional sample was not recruited. The methods and analytic plan were pre-registered at https://osf.io/txf5b/.

Method

Participants

100 individuals who met the inclusion criteria described in Pilot Study 1 and who did not participate in Pilot Study 1 participated in Pilot Study 2. Participants who reported that they were extremely distracted, did not complete the survey in one sitting, or were highly inattentive were excluded from analyses ($n = 7$) and were not included in the calculation of the descriptive statistics (see Table 3 for demographic characteristics).

The final sample consisted of 93 individuals on MTurk (53% identified as male; 68% identified as White / Caucasian). Participants were in middle-adulthood (mean age = 37.44 years old) and well-educated (60% of participants had a 4-year degree or higher). Most participants were in married relationships with their partner (55%), were exclusive

with their partner (95%), were in a relationship with someone of the opposite gender identity (95%), and had an average relationship length of 9.03 years. Participants ate an average of 9.83 meals with their partner each week. With regard to their health, most participants rated their own health as *very good* or *good* (mean of 2.51 on a scale ranging from 1 = *poor* to 5 = *excellent*), rated the healthiness of their eating habits as *somewhat unhealthy* or *a mix of healthy and unhealthy* (mean of 3.85 on a scale ranging from 1 = *extremely unhealthy* to 7 = *extremely healthy;* participants who indicated that their eating habits were *very healthy* or *extremely healthy* were not eligible to participate), and indicated that they were *somewhat interested* or *very interested* in improving their eating habits (mean of 3.81 on a scale ranging from 1 = *not at all interested* to 5 = *extremely interested;* participants who indicated they were *not at all interested* were not eligible to participate).

Measures

All measures can be found at https://osf.io/txf5b/.

Social Control Scenarios and Relational Response Options

Based on the strategies identified in Pilot Study 1 and informal piloting with content experts, six autonomy-supporting strategies and six autonomy-limiting strategies were developed. Each autonomy-supporting strategy had an autonomy-limiting strategy counterpart in the same context (see Appendix C for descriptions of strategies and relational response options). For instance, one autonomy-supporting strategy took place on a dinner date out at a restaurant, and its autonomy-limiting counterpart also took place on a dinner date out at a restaurant. The goal in designing the two kinds of strategies was to design them to be similar enough such that relational response options could be created

to be applicable to each situation. The number of strategies was chosen based on informal piloting with graduate students (i.e., although there were eight autonomy-supporting strategies that met the consistency criteria in Pilot Study 1, this number was reduced to six because eight strategies was deemed to be too cognitively taxing for participants).

After the strategies were developed, three relational responses options – one constructive response, one neutral response, and one destructive response – were developed based on the EVLN typology (e.g., Rusbult et al., 1991). Response options were designed to (a) be applicable for both autonomy-supporting and autonomy-limiting versions of strategies in the same context (e.g., agent says something about target's eating behavior while out to lunch) and (b) be clearly constructive, neutral, or destructive (see Appendix C). The order in which the response options were presented was different for each strategy to help ensure that participants' perceptions of the constructiveness/destructiveness of the response options are not affected by the order in which they were presented.

Rating relational response options from destructive to constructive. First, participants were given definitions of constructive and destructive relational behaviors (see Appendix C). Then, participants were instructed that they would view six hypothetical scenarios that depict their partner engaging in a pattern of behavior, along with three different options for how they might respond to their partner's actions.

Next, participants were randomly assigned to either view the autonomy-supporting social control strategies or the autonomy-limiting strategies. The purpose of the randomization was to test whether individuals perceived the same relational responses differently (e.g., more or less constructive) as a function of the strategy type. The order in

which the strategies were presented was random for each participant. The purpose of the randomization was to ensure that the results are not be affected by order effects (e.g., participants may find certain responses less destructive after the agent has enacted a limiting strategy multiple times).

After viewing each strategy and the three response options, participants were asked, "How constructive (i.e., positive, helpful for the relationship) versus destructive (i.e., negative, harmful for the relationship) is each response option?" and rated each response option on a 7-point Likert-type scale (1 = *extremely destructive*; 4 = *neither destructive nor constructive*; 7 = *extremely constructive*).

Rating relational responses on realism. Next, participants were shown the three response options again and were asked, "How easy is it to imagine someone responding in these different ways after their partner engaged in the behaviors above?" and rated each response option on a 6-point Likert-type scale (1 = *extremely difficult to imagine* to 6 = *extremely easy to imagine*).

Partner Motives for Enacting Social Control

Next, participants were randomly assigned to view either the independent motive manipulation first or the interdependent motive manipulation first (all participants viewed both motives) (see Appendix C). Participants viewed the same prompt as in Pilot Study 1, and the interdependent motive was also the same as was presented in Pilot Study 1. The independent motive manipulation was designed to be more focused on the agent's best interests than the original manipulation in Pilot Study 1.

After viewing each motive, participants indicated their agreement with the six statements used in Pilot Study 1 (see Appendix B). The reliability of the items assessing

perceptions of interdependence for the interdependent motive was similar to Pilot Study 1 and was low ($\alpha = .54$), and the reliability the items assessing perceptions of interdependence for the independent motive was moderate ($\alpha = .72$). Similarly to Pilot Study 1, two items were dropped ("What I heard my partner say makes me think that my partner has their own best interests at heart" and "What I heard my partner say makes me think that my partner put his/her own happiness above my happiness"), which increased the reliability to $\alpha = .77$ (interdependent motive) and $\alpha = .90$ (independent motive). Thus, the two items were dropped and the remaining four items were averaged to form two scores of motive perceptions.

Demographics and Attentiveness Questions

Finally, participants completed the same demographic questions from Pilot Study 1, along with the addition of one question assessing ethnicity.

Procedure

Participants were randomly assigned to either view the autonomy-supporting social control strategies or the autonomy-limiting strategies and were asked to rate how constructive/destructive and how easy to imagine each response option was. Next, participants viewed and rated both motives (the order in which each motive was presented was counterbalanced). Then, participants completed demographic questions and attentiveness questions. Finally, participants were thanked, debriefed, and provided with a code to receive their compensation ($1.00) through MTurk.

Results

Relational Response Options

Consistency

A central goal of Pilot Study 2 was to find relational response options that were rated as similarly constructive, neutral, or destructive across the different social control strategies. Prior to data collection, a target threshold of 66% of participants was set. For instance, social control strategies for which greater than or equal to 66% of the participants rated the response option between 1-3 (*extremely destructive* to *somewhat destructive*) were classified as destructive response options. If considerably fewer than 66% of participants rated the strategy within a particular range, the data was considered to be inconsistent. Consistency in response options as constructive to destructive was prioritized first and consistency in response options as easy to imagine was prioritized second. The results of the first round of the data consistency check revealed that, of the 18 response options, only one response option did not meet the consistency criteria for the constructiveness/destructiveness ratings. Thus, additional data were not collected. All response options were rated as *somewhat easy to imagine* to *extremely easy to imagine* by at least 66% of participants (see Table 4 for proportions of participants who fell within the thresholds).

Differences by Condition

In addition to the consistency check, t-tests were conducted to examine whether the same response options were rated differently as a function of whether participants viewed the autonomy-supporting strategies versus the autonomy-limiting strategies. There were six response options that were rated differently as a function of the condition (see response options marked with asterisks in Table 5). Of these six response options, two of the neutral response options (for SCS strategies at Stage 3, see Table 5) were rated as fairly constructive in both conditions (mean of 5.07). The Stage 3 strategies were

discarded. The remaining four response options were constructive response options and were rated as constructive (i.e., means between 5-7) and were retained for Study 1.

Motive Perceptions

To examine whether the two motives were perceived as differing in interdependence, the scores for the four statements were aggregated for each of the motives to form a motive perception rating, such that lower scores indicate that the motive was perceived as more independent and higher scores indicate that the motive was perceived as more interdependent. To test whether the motives were perceived as significantly different, a paired samples t-test was run. The results showed that there was a significant difference between the motives in perceptions of interdependence, such that the independent motive ($M = 4.49$, $SD = 1.61$) was perceived as significantly less interdependent than the interdependent motive ($M = 5.87$, $SD = 0.97$), $t(92) = 7.90$, $p < .001$).

<div align="center">

Pilot Study 2 Discussion

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The Pilot Study 2 results showed that, overall, the relational response options that were designed to be constructive, neutral, or destructive were perceived as such by participants. Additionally, the independent and interdependent motive manipulations were perceived as significantly different with regard to the extent to which they reflected motivations for enacting social control that were in the best interest of the target versus the agent. Thus, Study 1 uses the five autonomy-supporting and autonomy-limiting social control scenarios and the associated response options that met the consistency criteria in Pilot Study 2.

<div align="center">

Study 1

</div>

The primary aim of Study 1 was to test whether different combinations of social control strategies and motive types predict differences in targets' initial eating and relational responses, how those responses change over time, and the points of change in the valence of responses. Specifically, to examine differences in responses to the SCS, Study 1 tested how the type of social control strategy used (autonomy limiting or autonomy supporting) and the motivational attributions for the social control strategy used (independent or interdependent) affect the constructiveness of the relational behaviors and the healthiness of the eating behavior targets choose. Study 1 provides an opportunity to examine hypotheses regarding (1) the valence of targets' initial relational and eating response to the agent's first use of the social control strategy (i.e., intercept effect), (2) the point at which targets change in the valence of their relational behaviors and healthiness of eating in response to the agent's use of the social control strategy (i.e., the inflection point or "knot"), and (3) the trajectory of targets' relational behaviors and healthiness of eating across the stages of the SCS (i.e., slope effect). Hypotheses 1 and 2 are restated below, with intercept effects, slope effects, and the knot location specified.

> **Hypothesis 1:** The effect of autonomy-supporting and autonomy-limiting social control strategies on relational responses will be moderated by motive type. Specifically:

> > **Hypothesis 1a:** Autonomy-supporting strategies combined with interdependent motives will elicit constructive relational behaviors initially (i.e., **positive intercept**) and over time (i.e., **flat slope**), and there should be no inflection point (i.e., **no knot**), in comparison to when autonomy-supporting strategies are combined with independent motives,

which should elicit constructive relational behaviors initially (i.e., **positive intercept**), more destructive behaviors over time (i.e., **negative slope**) and an earlier inflection point (i.e., **earlier knot**).

Hypothesis 1b: Autonomy-limiting strategies combined with interdependent motives should elicit neutral or constructive relational behaviors initially (i.e., **positive intercept**) but more destructive relational behaviors over time (i.e., **steep negative slope**), and a later inflection point (i.e., **later knot**), in comparison to when autonomy-limiting strategies are combined with independent motives, which should elicit destructive relational behaviors initially (i.e., **negative intercept**), more destructive behaviors over time (i.e., **negative gradual slope**), and an earlier inflection point (i.e., **earlier knot**).

Hypothesis 2: The effect of autonomy-supporting and autonomy-limiting social control strategies on healthiness of eating will be moderated by motive type. Specifically:

Hypothesis 2a: Autonomy-supporting strategies combined with interdependent motives will elicit healthier eating initially (i.e., **positive intercept**), and increasingly healthier eating (i.e., **positive slope**), and the inflection point will occur later (i.e., **later knot**), in comparison to when autonomy-supporting strategies are combined with independent motives, which should elicit neutrally healthy eating (i.e., as healthy as usual) over time (i.e., **intercept of 0**), increasingly unhealthy eating over time (i.e.,

negative slope), and the inflection point will occur earlier (i.e., **earlier knot**).

> **Hypothesis 2b:** Autonomy-limiting strategies combined with interdependent motives will elicit healthier eating initially (i.e., **positive intercept**), but increasingly less healthy eating over time (i.e., **steep negative slope**), and the inflection point will occur later (i.e., **later knot**), in comparison to when autonomy-limiting strategies are combined with independent motives, which should elicit less healthy eating initially (i.e., **negative intercept**), increasingly unhealthy eating over time (i.e., **negative gradual slope**), and an earlier inflection point (i.e., **earlier knot**).

Additionally, Study 1 includes assessments of relationship characteristics that should be important determinants of targets' relational behavior responses to social control attempts. These characteristics include relationship quality and social control norms. Relationship quality includes aspects such as commitment, intimacy, trust, and satisfaction, and was assessed because the quality of a targets' relationship should be an important predictor of their reactions to social control, such that targets who have higher quality relationships are likely more motivated to behave in ways that preserve the relationship. Thus, people who report higher relationship quality should be more likely to respond constructively, across conditions, than people who report lower relationship quality.

> **Hypothesis 3:** Targets who report being in a higher quality relationship will respond with more constructive relational behaviors initially (i.e., positive

intercept effect) and over time (i.e., positive slope effect) than people who report

being in a lower quality relationship.

It is less clear how relationship quality might influence targets' relational behaviors in response to different strategy types and motive types. For instance, people who are in higher quality relationships might choose more destructive relational behaviors in the autonomy-limiting SCS conditions than people who are in lower quality relationships because they might be more confident that their relationship will be able to withstand conflict. Alternatively, people who are in higher quality relationships might choose more constructive relational behaviors in the autonomy-limiting SCS conditions than people who are in lower quality relationships because they have a more positive perception of their partner's behaviors (as their partner may have a history of engaging in more positive behaviors). In this case, it may be more informative to examine the role of strategy type and motive type separately (rather than looking at the role of motive type and relationship quality for the two autonomy-limiting conditions, for example). Thus, one research question is how relationship quality will affect targets' relational behaviors as a function of which strategy type and motive type agents use.

Research Question 1: Does relationship quality moderate the effect of strategy

type and motive type on targets' relational behaviors?

General social control norms (i.e., the appropriateness of one's partner trying to change one's health behavior) were assessed because they should guide targets' responses to social control, such that if social control is more normative, targets may respond more positively to agents' social control attempts. Thus, people who are in relationships in which social control is more normative should choose more constructive

relational behaviors in response to social control, across conditions, than people who are in relationships in which social control is less normative.

> **Hypothesis 4:** People who report that it is more normative to be a target of social control will respond with more constructive relational behaviors initially (i.e., positive intercept effect) and over time (i.e., positive slope effect) than people who report that it is less normative to be a target of social control.

With regard to how social control norms may affect targets' responses to different strategy types and motive types, there are competing predictions. For example, targets may respond more constructively to the autonomy-limiting conditions if social control is more normative in their relationship than people for whom social control is less normative. Targets for whom social control is more normative might also be less impacted by the motive manipulations because they might have a clearer idea of what agents' motives for enacting social control are in real life, and these real-life motives might have greater salience than the hypothetical motives. Thus, a final research question for Study 1 is how social control norms will interact with strategy type and motive type to affect targets' relational behaviors.

> **Research Question 2:** Do social control norms moderate the effect of strategy type and motive type on targets' relational behaviors?

Method

Pre-Registration, Data Cleaning, and Power Analysis

The hypotheses, methods, and analytic plan were pre-registered on the Open Science Framework (https://osf.io/qz5ws/). As per the pre-registered data collection

procedures, 1000 participants who met the inclusion criteria[4] used in Pilot Studies 1 and 2 and who did not participate in Pilot Studies 1 or 2 were recruited. Consistent with the pre-registration data cleaning plans, 291 participants were identified as "careless responders" and were removed. Careless responders were identified by inspecting open-ended responses for nonsensical responses (e.g., listing one's height of 8 feet, listing one's weight as 60 pounds), inspecting the entries for the cultural check (e.g., a substantial number of participants entered "mini eggplants" for the cultural check) ($n = 261$) and by identifying individuals who indicated they were *extremely distracted* while completing the survey, who indicated they did not complete the survey in one sitting, or who indicated they were *somewhat inattentive* or *highly inattentive*, while completing the survey ($n = 21$). Additionally, participants who completed the survey in +/- 2 standard deviations above the median survey completion time were excluded ($n = 9$). These exclusionary criteria resulted in a final sample of 709 individuals.

An a priori power analysis (G*Power; Faul, Erdfelder, Lang, & Buchner, 2007) showed that 1000 participants were needed to detect a small effect ($f = .10$) at 94% power. A post-hoc power analysis showed that the final sample of 709 individuals offers approximately 81% power to detect a small effect size.

Participants

Seven hundred and nine individuals from MTurk participated in Study 1. Participants were randomly assigned to one of four conditions in a 2 (Agent Motives: independent, interdependent) x 2 (SCS: autonomy limiting, autonomy supporting) design.

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[4] Study 1 also included additional inclusion criteria (see Appendix A). A cultural check was included to ensure that participants were native English speakers (Moss & Litman, 2018). Additionally, people who had been in a relationship for less than 3 months or longer than 10 years were excluded.

Descriptive statistics for the study sample can be found in Table 6. Most participants identified as women (60%), were not of Hispanic, Latino/a, or Spanish ethnicity (90%), and were White (79%). Participants were in middle-adulthood (mean age = 33.42 years old), had a range of educational backgrounds, reported a range of household incomes, and 80% of participants were employed. Most participants were either exclusively dating, almost engaged, or married to their partner. Most participants were exclusive with their partner (99%), were in a relationship with someone of the opposite gender identity (93%), and had an average relationship length of 5.23 years. Approximately half (51%) of the sample did not have children. Participants ate an average of 9.90 meals with their partner each week. With regard to their health, most participants rated their own health as *very good* or *good* (mean of 2.86 on a scale ranging from 1 = *poor* to 5 = *excellent*), rated the healthiness of their eating habits as *a mix of healthy and unhealthy* (mean of 4.01 on a scale ranging from 1 = *extremely unhealthy* to 7 = *extremely healthy*; participants who indicated that their eating was *very healthy* or *extremely healthy* were not eligible to participate) and indicated that they were *somewhat interested* or *very interested* in improving their eating habits (mean of 3.71 on a scale ranging from 1 = *not at all interested* to 5 = *extremely interested;* participants who indicated they were *not at all interested* were not eligible to participate).

Measures

All measures can be found at https://osf.io/qz5ws/.

Agent Motive Manipulation

Participants were asked to imagine that they overheard the agent (their partner) talking on the phone about their eating behavior and then read a description of their

partner saying something indicative of either independent motives or interdependent

motives (see Appendix D for descriptions). The motives were developed based on Pilot

Study 2.

Social Control Scenario (SCS)

Participants were given the following instructions:

"*A few days after you overhear [PARTNER] saying this on the phone,*

[PARTNER] starts engaging in different behaviors related to your eating.

Imagine the following series of events occurred over the course of 2 weeks. As

you read the scenario, imagine that [PARTNER] engaged in each of these

behaviors."

Participants were randomly assigned to the autonomy-supporting SCS or the autonomy-

limiting SCS, which each had five stages. At each stage, participants imagine they are

with their romantic partner in a context relevant to eating behavior (e.g., grocery

shopping, eating lunch, out on a dinner date). The romantic partner enacts a social control

strategy, which is always unique to the stage, but that is either autonomy supporting or

autonomy limiting. Using the results from Pilot Studies 1 and 2, the stages were designed

so that the only difference between the two conditions was the specific strategy used. For

each stage, the context, relational response options, and the health behavior response

options were the same. The autonomy-supporting SCS and the autonomy-limiting SCS,

along with the associated response options, are shown in Appendix D.

After each stage, participants indicated how they would respond relationally

(constructive, neutral, or destructive response options), and how they would respond with

regard to their eating behavior at their next meal (they would eat 1 = *much less healthy*

than usual; 4 = *as healthy as usual*; 7 = *much more healthy than usual*). The relational

choices were randomly counterbalanced throughout the SCS, such that the constructive

option was sometimes listed first, the neutral option was sometimes listed first, and the

destructive option was sometimes listed first.

Perceived Realism of SCS

Participants completed four questions to assess the realism of the SCS and the

extent to which the SCS reflects their past experiences with social control. Participants

rated the extent to which the scenario was easy to imagine on a 6-point Likert-type scale

(1 = *extremely difficult to imagine* to 6 = *extremely easy to imagine*). Participants

indicated that the scenario was *somewhat easy to imagine* to *very easy to imagine* (M =

4.83, SD = 1.12). Two linear regressions showed that perceptions of the scenario were not

associated with strategy type (b = .03, p = .457) nor motive type (b = .01, p = .837).

However, there was an interaction effect between relationship quality and motive type on

perceptions of the scenario, such that people who were in a poorer quality relationship

and who viewed the interdependent motive condition perceived the Social Control

Scenario as more difficult to imagine than people who were in a higher quality

relationship (b = .11, p = .023).

Participants also indicated whether their partners have engaged in any of the

behaviors mentioned in the SCS to try to change their eating behavior (-1 = *no*, 1 = *yes*),

and if, yes, which behaviors (range: 1 – 5). Forty-two percent of participants who viewed

the autonomy-limiting SCS indicated that their partner has engaged in some of the

behaviors mentioned in the SCS to try to change their eating behavior (M = 1.03

behaviors, SD = 1.40). The most-frequently selected autonomy-limiting behavior that

participants indicated their partner had engaged in was, "Warned me about the unhealthiness of the food I eat" (n = 119). Forty-seven percent of participants who viewed the autonomy-supporting SCS indicated that their partner has engaged in some of the behaviors mentioned in the SCS to try to change their eating behavior (M = 1.39 behaviors, SD = 1.73). The most-frequently selected autonomy-supporting behavior that participants indicated their partner had engaged in was, "Suggested a healthy meal for me to eat" (n = 112). The item reflecting whether their partner had ever used any of the social control strategies in the SCS (yes/no variable) was used as a covariate in analyses.

Relationships Measures

Participants completed several assessments of their relationship. First, participants completed the Perceived Relationship Quality Components (PRQC) Inventory (Fletcher, Simpson, & Thomas, 2000) (see Appendix D), which assesses individuals' satisfaction (α = .91), commitment (α = .92), intimacy (α = .82), trust (α = .87), passion (α = .86), and love (α = .88) in their relationship (e.g., "How satisfied are you with your relationship?" 1 = *not at all* to 7 = *extremely*). Items within each subscale were aggregated and items across subscales were also aggregated (resulting in scores for each subscale and a global score of relationship quality (see Table 6 for means and standard deviations). The overall reliability for the PRQC was high (α = .95).

Participants also completed two items assessing the frequency and acceptability of social control in their relationship regarding being a target of health-related social control: (1) How often does your partner try to change your health behaviors? (1 = *never* to 6 = *always*) and (2) Within your relationship, how acceptable is it for your partner to try to change your health behaviors? (1 = *not at all acceptable* to 5 = *very acceptable*).

The item reflecting how acceptable it is for one's partner to change one's health behavior was used as the item reflecting social control norms. See Table 6 for means and standard deviations.

Demographics and Attentiveness Questions

Participants completed the demographic questions included in Pilot Studies 1 and 2. Additionally, they completed questions assessing their household income, their current occupation status (e.g., employed), their own and their partner's height and weight, their amount of time they have been cohabiting with their partner, the number of children they have, and how many of their children currently live with them.

Procedure

Participants were randomly assigned to view either the interdependent agent motive manipulation or the independent agent motive manipulation and then were randomly assigned to view either the autonomy-supporting SCS or the autonomy-limiting SCS. At each stage of the SCS, participants visualized a situation in which their partner, the agent, enacted a social control strategy aimed at changing the participant's eating behavior. Participants indicated how they would respond to the strategy, both in terms of the healthiness of their eating and in terms of relational behavior. After completing the SCS, the participant responded to questions about the realism of the SCS, questions about aspects of their relationship and social control norms in their relationship, demographic questions about themselves and their partner, and the attentiveness questions. Finally, participants were thanked, debriefed, and provided with a code to receive their compensation through MTurk. Participants who completed the eligibility questions but

were deemed ineligible were compensated with $0.05. Participants who completed the full study were compensated an additional $1.25 for a total of $1.30.

<center>**Analysis Plan**</center>

Bivariate Correlations and Covariates

Bivariate correlations between key Study 1 predictors, moderators, dependent variables, and covariates are reported in Table 7. Relational behaviors and healthiness of eating (on average, across stages of the SCS) were moderately correlated ($r = 0.55$, $p < .001$). Based on the inspection of the bivariate correlations and the theoretical framework guiding this work, six covariates were identified to be included in the relational behavior models: participants' gender, cohabitation length, average PRQC score, partners' past use of the strategies included in the autonomy-supporting or autonomy-limiting SCS, and social control norms. Five covariates were identified to be included in the healthiness of eating models: average PRQC score, interest in improving eating habits, number of meals eaten with one's partner per week, partners' past use of the strategies included in the autonomy-supporting or autonomy-limiting SCS, and social control norms. Models were tested with and without covariates and estimates for both models are reported. When estimates and p-values are reported in the text, they refer to the estimates and p-values of the final models, that is, the models with covariates included.

Multilevel Modeling

Hypotheses 1 – 4 and Research Questions 1 and 2 were tested using multilevel modeling in R using the nlme package (Pinheiro, Bates, DebRoy, Sarkar, R Core Team, 2020) and the lmerTest package (Kuznetsova, Brockhoff, & Christensen, 2017). For each

outcome (relational behavior and healthiness of eating), exploratory analyses were conducted to determine the best-fitting error structure (e.g., compound symmetry, autoregressive, independent). Prior to conducting multilevel analyses, two-level unconditional models were tested to examine how much of the variance of the outcomes, relational behaviors and healthiness of eating, were within- and between-individuals and to determine whether multilevel modeling was appropriate. Intraclass correlations and design effect estimates were examined to determine whether multilevel modeling was appropriate for the outcome variables (Peugh, 2010). Design effect estimates greater than 2.00 indicate a need for multilevel modeling (e.g., Muthen, 1991). The intraclass correlation for relational behaviors was 0.36 and the design effect estimate was 2.44. The intraclass correlation for healthiness of eating was 0.52 and the design effect estimate was 3.08. Thus, multilevel modeling was deemed appropriate for both outcomes variables.

Hypothesis 1 and 2

Each outcome (relational behavior and healthiness of eating) was regressed on stage of SCS and motive type with and without controlling for covariates. Two condition variables were created: one reflecting autonomy-supporting SCS conditions and one reflecting autonomy-limiting SCS conditions. The condition in which autonomy-supporting strategies were combined with independent motives was coded as -1, and the condition in which autonomy-supporting strategies were combined with interdependent motives was coded as 1. Similarly, the condition in which autonomy-limiting strategies were combined with independent motives was coded as -1 and the condition in which autonomy-limiting strategies were combined with interdependent motives was coded as 1. To test the different sub-hypotheses (e.g., Hypothesis 1a, Hypothesis 1b), sub-setting

was used to examine only the relevant SCS condition (e.g., the two autonomy-supporting

SCS conditions). For example, for Hypothesis 1a, the mixed effects model was used:

$$RelationalBehaviors_{ij} = \beta_0 + b_{0j} + \beta1StageofSCS + b_{1j}StageofSCS + \beta2MotiveType +$$

$$\beta1StageofSCS*\beta2MotiveType + \beta3Gender + \beta4CohabitationLength + \beta5PRQC +$$

$$\beta6InterestinImprovingEating + \beta7MealsEatenWithPartner + \beta8PartnersUseofSC + e_{ij}$$

This estimated the grand mean in relational behaviors at each stage of the SCS (β_0) and

individual variance around the mean for person j (b_{0i}). Stage 1 of both the autonomy-

supporting and autonomy-limiting SCS was coded as zero, Stage 2 as 1, and so forth.

Thus, the slopes reflect changes in relational behaviors over the stages of the SCS (i.e.,

over time). Relational behaviors were coded such that the destructive choice was -1, the

neutral choice was zero, and the constructive choice was 1. Healthiness of eating was

coded such that negative values reflect eating that is less healthy than usual, a value of

zero reflects eating that is as healthy as usual, and positive values reflect eating that is

more healthy than usual. Thus, the intercept reflects the mean relational (or healthiness of

eating) response chosen at Stage 1, and the slope reflects the incremental change in

constructiveness (or healthiness) associated with moving up one stage.

Random effects of stage of SCS were estimated. This captured between-person

differences in the within-person association between stage of SCS and relational

behaviors (or healthiness of eating). When the random effect of stage of SCS was

estimated to be zero (i.e., participants' scores did not significantly vary around a given

estimate), it was dropped from the model to achieve model parsimony. Continuous Level-

2 predictors (e.g., cohabitation length, average PRQC score) were grand-mean centered;

therefore, the intercept represented the outcome at the average level of those predictors

and their coefficients represented between-person associations between the predictor and relational behaviors. The marginal R^2 value was estimated for each model and is associated with the fixed effects in the model (Nakagawa, Johnson, & Schielzeth, 2017). Maximum likelihood estimation was used to fit the models.

Hypothesis 3 and 4 and Research Questions 1 and 2

The relational behavior outcome was regressed on stage of SCS, motive type, and strategy type with and without controlling for covariates. For these models, motive type and strategy type were treated as unique predictors. For motive type, the independent motive was coded as -1 and the interdependent motive was coded as 1. For strategy type, the autonomy-limiting SCS was coded as -1 and the autonomy-supporting SCS was coded as 1. Other coding, centering, and model specifications were similar to the models testing Hypotheses 1 and 2.

Results

Hypothesis 1: Effect of Motive Type on Relational Behaviors

The mean constructiveness levels of relational behaviors across the five stages of the SCS, for each condition are displayed in Figure 2. A compound symmetry error structure was used for the models comparing the two autonomy-supporting conditions (Hypothesis 1a) as it provided the lowest Akaike Information Criteria value (AIC; Akaike, 1979) (smaller values indicate better fit) compared to others tested (i.e., independent, first-order autoregressive, unstructured). An independent error structure was used for the models comparing the two autonomy-limiting conditions (Hypothesis 1b), as it provided the lowest AIC compared to others tested. Given the assumptions of a random slope and a random intercept, a random coefficient model is appropriate. Figure 2 also

suggests that a linear function is acceptable for the data. Although the a priori analysis

plan was to test the relational behavior hypotheses using piecewise linear mixed-effects

(PLME) modeling (e.g., Cudeck & Harring, 2010; Kieffer, 2012; Kohli, Sullivan, Sadeh,

& Zopluoglu, 2015), the empirical representation of the data shows that the trajectories of

change in relational behaviors across the stages of the SCS are constant; thus, a piecewise

linear mixed-effects model is inappropriate (Kohli, Harring, & Zopluoglu, 2016).[5]

There are three assumptions of multilevel models: (1) random effects have a

multivariate normal distribution, (2) errors are normally distributed with a mean of zero,

and (3) errors are independent of each other. To test these assumptions, I extracted the

random effects from the null model (the model that only included the response variable).

The random effects were negatively skewed (-0.39), but within the realm of acceptable

skewness (-1 > skew < 1). Similarly, the random slopes had skewness of 0.39. Thus, the

random effects have a multivariate normal distribution (Assumption 1). The errors were

normally distributed with a mean of zero and a median of 0.04 (skewness = -0.20) and

Assumption 2 was met. Finally, plotting the residuals across the stages of the SCS

showed that there does not appear to be a systematic pattern across the residuals

(Assumption 3). In sum, the assumptions of the model were met.

Hypothesis 1a

To test Hypothesis 1a, that autonomy-supporting strategies combined with

interdependent motives would elicit constructive relational behaviors initially (i.e.,

positive intercept) and over time (i.e., flat slope), in comparison to when autonomy-

supporting strategies were combined with independent motives, a random coefficients

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[5] Similarly, the empirical representation of the eating choices data showed that a piecewise linear
mixed-effects model is inappropriate.

model was run. The model included stage of SCS (time variable) and motive type as fixed effects, as well as motive type as a fixed effect interaction term with stage of SCS. This model enabled me to examine the effect of motive type on the intercept (i.e., effect of motive type on relational behavior at Stage 1) and on the slope (i.e., effect of motive type on relational behavior across the stages of the SCS). When stage was included as a random effect, the model did not converge; thus, the random effect of stage was dropped from the model. The model was also run with the following covariates: gender, cohabitation length, the PRQC average score, partner's past use of social control, and social control norms. The marginal R^2 value of the model with covariates included is 0.05, indicating a small effect.

The estimates, standard errors, p-values, and 95% confidence intervals of the model with and without covariates are shown in Table 8. The estimate of the fixed intercept ($b = 0.35$, $p < .001$) indicates the predicted mean relational behavior chosen by participants after viewing the first stage of the autonomy-supporting SCS. Participants chose slightly constructive relational behaviors after Stage 1. The estimate of the fixed linear slope indicates the mean change in relational behaviors for an additional measurement occasion (i.e., moving forward one stage in the SCS). However, the slope effect is not significant, indicating that there are no differences in targets' relational behaviors over time, taking the predictors into account.

The effects of motive type on the intercept and slope are non-significant, indicating that there are no differences in targets' initial relational behaviors or relational behaviors over time as a function of whether targets viewed the autonomy-supporting SCS and the interdependent motive or whether they viewed the autonomy-supporting

SCS and the independent motive. Generally, the results do not change when the

covariates are added; however, the effect of motive type becomes weaker. Thus,

Hypothesis 1a was not supported.

Hypothesis 1.

To test Hypothesis 1b, that autonomy-limiting strategies combined with

interdependent motives should predict constructive relational behaviors initially (i.e.,

positive intercept) but more destructive relational behaviors over time (i.e., negative

slope), in comparison to when autonomy-limiting strategies were combined with

independent motives, a random coefficients model was run (with and without covariates).

The model was the same as tested in Hypothesis 1a, except that the two autonomy-

limiting conditions were compared instead of the two autonomy-supporting conditions.

The marginal R^2 value of the model with covariates was 0.16.

The estimates, standard errors, t-values, and 95% confidence intervals of the

model with and without covariates are shown in Table 9. When the covariates are

included, the effect of the intercept effect is significant ($b = 0.03$, $p < .01$), indicating that

people respond to Stage 1 with neutral relational behaviors, taking the predictors into

account. The slope effect is not significant; targets do not respond differently over time,

taking the predictors into account.

There is no effect of motive type on the intercept, which indicates that targets do

not respond differently to the first stage of the SCS as a function of whether they view the

autonomy-limiting SCS combined with the independent motive or the autonomy-limiting

SCS combined with the interdependent motive. Thus, the intercept prediction of

Hypothesis 1b is not supported. The estimate of the interaction between linear slope and

motive type is -0.03 and indicates that motive type is a significant predictor of individual variability in the slopes of relational behaviors over time. Specifically, the expected increase in slope for each 1-point increase in motive type is -0.03. Figure 3 shows the plotted interaction effect. For people who viewed the autonomy-limiting SCS, viewing the independent motive condition was associated with choosing more constructive relational behaviors over time, whereas viewing the interdependent motive condition was associated with choosing fewer constructive behaviors over time. It was predicted that both motive types should be associated with destructive relational behaviors over time (but that the interdependent motives condition would show a steeper negative slope); thus, the Hypothesis 1b slope prediction was not supported.

Hypothesis 2: Effect of Motive Type on Healthiness of Eating

Mean healthiness of eating across the five stages of the SCS, for each strategy type and motive type, are displayed in Figure 4. The unstructured error structure – which does not include a random slope – was used because it showed the lowest AIC compared to the others tested. Although the a priori predictions included a random intercept and random slope, the analysis of different error structures showed that a random slope does not fit the data well. Thus, a linear mixed effects model is appropriate.

Multilevel model assumption testing showed that the random effects were negatively skewed (skewness = -0.13 for intercept and -0.47 for slope random effects), but within the realm of acceptable skewness (-1 > skew < 1). Thus, the random effects have a multivariate normal distribution (Assumption 1). The errors were normally distributed with a mean of zero and a median of -0.01 (skewness = -0.50) and Assumption 2 was met. Finally, plotting the residuals across the stages of the SCS

showed that there does not appear to be a systematic pattern across the residuals

(Assumption 3). In sum, the assumptions of the model were met.

Hypothesis 2a

To test Hypothesis 2a, that autonomy-supporting strategies combined with

interdependent motives would elicit healthier eating initially (i.e., positive intercept) and

healthier eating over time (i.e., positive slope), in comparison to when autonomy-

supporting strategies were combined with independent motives, a linear mixed effects

model was run (with and without covariates). The model included stage of SCS (time

variable) and motive type as fixed effects, as well as motive type as a fixed effect

interaction term with stage of SCS. This model enabled me to examine the effect of

motive type on the intercept (i.e., effect of motive type on healthiness of eating at Stage

1) and on the slope (i.e., effect of motive type on healthiness of eating across the stages of

the SCS). A model was also run that included the following covariates: average PRQC

score, interest in improving eating habits, number of meals eaten with one's partner per

week, partners' past use of social control, and social control norms. The marginal R^2

value of the model with covariates was 0.14.

The estimates, standard errors, p-values, and 95% confidence intervals of the

fixed effects for the model with and without covariates are shown in Table 10. The

estimate of the fixed intercept is positive and significant ($b = 0.71$, $p < .001$), indicating

that the predicted mean healthiness of eating after viewing the first stage of the

autonomy-supporting SCS was slightly more healthy than targets would usually eat,

taking the predictors into account. The estimate of the fixed linear slope is positive and

significant ($b = 0.11$, $p < .001$), indicating the mean increase in healthiness for an

additional measurement occasion. In other words, across the stages of the autonomy-supporting SCS, targets eat healthier (hypothetically) over time. There is no effect of motive type on the intercept or slope; thus, Hypothesis 2a was not supported. Adding covariates to the model did not change the results.

Hypothesis 2.

To test Hypothesis 2b, that autonomy-limiting strategies combined with interdependent motives would elicit healthier eating initially (i.e., positive intercept), but increasingly unhealthy eating over time (i.e., negative slope), in comparison to when autonomy-limiting strategies were combined with independent motives, a linear mixed effects model was run (with and without covariates). The model was the same as the model tested in Hypothesis 2a, except that the two autonomy-limiting conditions were compared. The marginal R^2 value of the model with covariates was 0.12.

The estimates, standard errors, p-values, and 95% confidence intervals of the fixed effects for the model with and without covariates are shown in Table 11. The estimate of the fixed intercept is positive and significant ($b = 0.63$, $p < .001$), indicating the predicted mean healthiness of eating after viewing the first stage of the autonomy-limiting SCS is slightly more healthy than targets would usually eat, taking the predictors into account. The estimate of the fixed linear slope is positive and significant ($b = 0.04$, $p < .01$), indicating the mean increase in healthiness for an additional measurement occasion. This shows that targets eat healthier (hypothetically) over time. There is no effect of motive type on the intercept or slope; thus, Hypothesis 2b was not supported. The results did not change when covariates were included in the model.

Hypothesis 3: The Effect of Relationship Quality on Relational Behavior

It was predicted that there would be a positive main effect of relationship quality (as assessed by the PRQC) on relational behavior, such that, across conditions, people in better quality relationships would respond with more constructive relational behaviors. To test this prediction, a random coefficients model was run (with and without covariates). The model included stage of SCS (time variable), motive type, strategy type (autonomy-supporting or autonomy-limiting), and relationship quality (grand-mean centered) as fixed effects, as well as the fixed effect interactions terms of relationship quality x motive type, relationship quality x strategy type, and relationship quality x stage of SCS. This model enabled me to examine the effect of relationship quality on the intercept (i.e., effect of relationship quality on relational behavior at Stage 1) and on the slope (i.e., effect of relationship quality on relational behaviors across the stages of the SCS). Additionally, this model enabled me to test whether relationship quality moderated the effects of motive type or strategy type on relational behavior. A model was also run that added the following covariates: gender, cohabitation length, partner's past use of social control, and social control norms. The marginal R^2 value of the model with covariates was 0.15.

Table 12 provides the estimates, standard errors, p-values, and 95% confidence intervals for the model with and without covariates. There was a significant effect of relationship quality on the intercept ($b = 0.10$, $p < .001$), indicating that people who were in better quality relationships reported more constructive relational behavior at Stage 1 of the SCS than people who were in lower quality relationships (supporting the intercept effect of Hypothesis 3). The interaction term (relationship quality x stage of SCS) was not significant, indicating that people who were in better quality relationships did not

choose different relational behaviors over time compared to people who were in lower quality relationships. Thus, Hypothesis 3 was partially supported.

Research Question 1: The Moderating Effect of Relationship Quality on the Associations Between Strategy Type and Motive Type and Relational Behavior

To examine whether relationship quality moderated the effect of strategy type or motive type on relational behaviors, the interaction terms between relationship quality and strategy type and relationship quality and motive type in the model testing Hypothesis 3 were examined. Neither interaction term was significant, indicating that relationship quality did not moderate the effect of strategy type or motive type on relational behaviors.

Hypothesis 4: The Effect of Social Control Norms on Relational Behavior

It was predicted that there would be a positive main effect of social control norms on relational behavior, such that, across conditions, people who reported that it was more acceptable for their partner to try to change their health behavior would respond more constructively to the SCS than people who reported that it was less normative for their partner to use social control. A random coefficients model was run (with and without covariates). The model included stage of SCS (time variable), motive type, strategy type (autonomy-supporting or autonomy-limiting), and social control norms (grand-mean centered) as fixed effects, as well as the fixed effect interactions terms of norms x motive type, norms x strategy type, and norms x stage of SCS. This model enabled me to examine the effect of social control norms on the intercept (i.e., effect of norms on relational behavior at Stage 1) and on the slope (i.e., effect of norms on relational behavior across the stages of the SCS). Additionally, this model enabled me to test

whether social control norms moderated the effects of motive type or strategy type on relational behavior. A model including the following covariates was also run: gender, cohabitation length, the PRQC average score, and partner's past use of social control. The marginal R^2 value of the model with covariates was 0.16.

The estimates, standard errors, p-values, and 95% confidence intervals of the model with and without covariates are shown in Table 13. There was a significant effect of social control norms on the intercept ($b = 0.22$, $p < .001$), such that people who reported that it was more normative for their partner to use social control responded with more constructive relational behavior at Stage 1 than did people who reported that it was less normative. There was also a significant interaction effect of social control norms with stage ($b = -0.03$, $p < .001$) (see Figure 5). People who reported that being a target of social control is more normative in their relationship chose fewer constructive relational behaviors over time, whereas people who reported that being a target of social control is less normative in their relationship chose more constructive relational behaviors over time. Taken together with the intercept effect, this suggests that people for whom social control is more normative respond initially with more constructive behaviors, but their use of constructive behaviors declines over time. In contrast, people for whom social control is less normative respond initially with fewer constructive behaviors, but their use of constructive behaviors increases over time.

Research Question 2: The Moderating Effect of Social Control Norms on the Association Between Strategy Type and Motive Type and Relational Behavior

Additionally, there was a significant interaction effect of social control norms with strategy type ($b = -0.06$, $p < .001$) (see Figure 6). For people for whom being a

target of social control was less normative, viewing the autonomy-supporting SCS was

associated with more constructive relational behaviors initially than viewing the

autonomy-limiting SCS. However, for people for whom being a target of social control

was more normative, viewing the autonomy-limiting SCS was associated with more

constructive relational behaviors than viewing the autonomy-supporting SCS.

Exploratory Analyses

Given that motive type showed little predictive power when comparing the two

autonomy-supporting conditions and the two autonomy-limiting conditions, a series of

exploratory analyses was conducted to better understand the role of strategy type and

motive type as unique predictors of relational behaviors and healthiness of eating.

Relational Behaviors

The mean relational behaviors by strategy type across the stages of the SCS are

shown in Table 14. The average level of relational behavior for individuals in the

autonomy-supporting conditions was 0.36, whereas the average level of relational

behavior for individuals in the autonomy-limiting conditions was 0.02 (the constructive

response option was coded as 1, the neutral response option was coded as 0, and the

destructive response option was coded as -1). This indicates that autonomy-supporting

strategies elicited slightly more constructive relational behaviors, whereas autonomy-

limiting strategies elicited neutral relational behaviors. The mean relational behaviors by

motive type are shown in Table 15. The average level of relational behavior for

individuals in the interdependent motives conditions was 0.19, whereas the average level

of relational behavior for individuals in the independent motives conditions was 0.17.

This indicates that there was no meaningful difference between the two motives conditions in average relational behaviors.

A random coefficients model was run (with and without covariates) to examine the effects of strategy type and motive type on relational behaviors (see Table 16). The marginal R^2 value of the model with covariates was 0.14. The main effect of motive type was not significant. However, there was a significant main effect of strategy type on relational behaviors ($b = 0.16$, $p < .001$), such that people who viewed the autonomy-supporting SCS chose more constructive relational behaviors at Stage 1 than people who viewed the autonomy-limiting SCS. There was also a significant interaction between stage and motive type ($b = -0.02$, $p < .05$) (see Figure 7). People who viewed the interdependent motive chose fewer constructive relational behaviors over time, whereas people who viewed the independent motive chose more constructive relational behaviors over time. The results did not change when covariates were included in the model.

Healthiness of Eating

The mean level of healthiness of eating by strategy type is shown in Table 14. The average level of healthiness for the autonomy-supporting condition was 0.94, whereas the average level of healthiness for the autonomy-limiting condition was 0.68. Given that a value of zero reflects "as healthy as usual" eating, the averages show that, in general, both groups tended to respond to social control with slightly healthier than usual eating, and the difference between the two groups is not large. The mean level of healthiness of eating by motive type is shown in Table 15. The average level of healthiness for the interdependent motives condition was 0.82, whereas the average level of healthiness for

the independent motives condition was 0.81, indicating that there is no difference between the two motive conditions in average healthiness of eating.

A linear mixed effect model was run (with and without covariates) to examine the effects of strategy type and motive type on healthiness of eating (see Table 17). The marginal R^2 value of the model with covariates was 0.14. There was a significant interaction effect between stage and strategy type ($b = 0.03$, $p < .01$) (Figure 8). People who viewed the autonomy-supporting SCS engage in healthier eating over time compared with people who viewed the autonomy-limiting SCS. Motive type did not affect healthiness of eating initially or over time. The inclusion of covariates did not change the results.

Study 1 Discussion

Most previous research has either examined the effect of different social control strategies on targets' health behaviors or on their emotional reactions, and has focused on the effects of social control at one point in time, rather than examining how health behavior responses and relational responses change over time as a function of which social control strategies are used. Study 1 addresses these gaps. Study 1 examined targets' relational and eating responses to a series of hypothetical social control attempts by their partner that differed as a function of the type of social control strategy used (autonomy-supporting versus autonomy-limiting) and the type of motive that was associated with that strategy (interdependent versus independent).

Does Motive Type Moderate the Effect of Strategy Type on Relational Behaviors and Healthiness of Eating?

On average (collapsing across motive type conditions and across stages of the SCS), people responded to the autonomy-supporting SCS with slightly more constructive relational behaviors and slightly healthier than usual eating. In contrast, people responded to the autonomy-limiting SCS with neutral relational behaviors and slightly healthier than usual eating. The confirmatory analyses revealed that for targets who viewed the autonomy-supporting strategies, there were no effects of the motives manipulation on relational behaviors or on healthiness of eating. For targets who viewed the autonomy-limiting strategies, the independent motives manipulation was associated with more constructive relational behaviors over time than the interdependent motives manipulation, but this is in opposition to the prediction that both motive types would be associated with negative slopes for the autonomy-limiting strategy conditions. Additionally, there were no effects of the motives manipulation on healthiness of eating for targets who viewed the autonomy-limiting strategies. The lack of a moderation effect of the motives manipulation on strategy type for most of the predictions is in line with Lewis and Butterfield's (2005) findings that targets' attributions for their partner's use of social control do not moderate the impact of social control strategy type on targets' emotional or health behavior responses.

Does Relationship Quality Moderate the Effect of Strategy Type or Motive Type on Relational Behaviors?

Hypothesis 3 was partially supported; people who reported being in higher quality relationships chose more constructive relational behaviors at Stage 1, but there was no effect of relationship quality on relational behaviors over time. This finding suggests that although people in better relationships might respond more positively to social control

(either autonomy-supporting or autonomy-limiting) the first time the agent enacts a social control strategy, there are no differences in people's relational responses to social control over time as a function of relationship quality. To answer Research Question 1, relationship quality did not moderate the effect of strategy type or motive type on relational behaviors. This finding was surprising. Given that social control involves attempts by one partner to try to influence the other's health behavior, social control attempts could lead to relational conflict. Thus, one might expect, for example, that people who are in better relationships may respond more constructively to autonomy-limiting social control than people who are in worse relationships.

Do Social Control Norms Moderate the Effect of Strategy Type or Motive Type on Relational Behaviors?

It was predicted that people who reported that being the target of social control was more normative in their relationship would respond more constructively to the SCS than people who reported that it was less normative. Hypothesis 4 was partially supported: people who reported that social control was more normative responded more constructively at Stage 1, but less constructively over time, compared with people who reported that social control was less normative. In contrast, people who reported that being a target of social control is less normative chose fewer constructive behaviors at Stage 1, but more constructive relational behaviors over time. This somewhat surprising finding suggests that people who are more accustomed to being a target of social control are more tolerant of social control when it is enacted once, but that their tolerance declines over time, whereas the opposite is true for people who are less accustomed to being a target of social control.

Additionally, to address Research Question 2, there was a significant interaction between social control norms and strategy type. For people who report that social control is less normative, they respond more constructively to autonomy-supporting strategies than autonomy-limiting strategies, but for those who report that social control is more normative, they react similarly favorably to both types of strategies. One potential explanation for this finding is that people who perceive social control as more normative have experience with both types of social control strategies, and perhaps may find both types of strategies to be similarly non-threatening to their personal autonomy. In contrast, people who perceive social control as less normative may specifically perceive autonomy-limiting strategies as more negative or threatening to their autonomy than autonomy-supporting strategies. One next step for future research is to explore the nuances of social control norms; for instance, it could be the case that specific types of social control are acceptable or occur frequently in certain situations (e.g., autonomy-limiting strategies could be acceptable if one is concerned about their partner driving under the influence of alcohol than in the context of eating).

Do Strategy Type and Motive Type Show Unique Associations with Relational Behavior and Healthiness of Eating?

Given that the a priori hypotheses regarding the role of motive type were generally unsupported, a series of exploratory hypothesis tests were conducted to examine strategy type (viewing the autonomy-supporting SCS versus the autonomy-limiting SCS) and motive type (viewing the independent motive versus the interdependent motive) as unique predictors of relational behaviors and healthiness of eating. This approach offered a direct comparison between the effects of the autonomy-

supporting SCS conditions and the autonomy-limiting SCS conditions that was not captured in the confirmatory analyses. These analyses were informative because they enabled me to examine whether the results of Study 1 conceptually replicate what research on the effects of different social control strategies has found with regard to health behavior change (i.e., autonomy-supporting strategies should predict healthier eating behavior and autonomy-limiting strategies should predict no change in eating or less healthy eating). Additionally, these analyses enable me to build on prior research by examining the effect of strategy type on relational behavior. One caveat is that Study 1 was not designed to test the unique effects of strategy type on relational behavior and healthiness of eating because all participants were exposed to a partner motive type (i.e., independent or interdependent motive). The following discussion will focus on the results of the exploratory analyses.

Does Strategy Type Affect Relational Behavior and Healthiness of Eating?

Exploratory analyses examined the role of strategy type (autonomy-supporting SCS versus autonomy-limiting SCS) as a unique predictor for both relational behavior and healthiness of eating. The results showed that autonomy-supporting strategies generally elicited neutral to slightly constructive relational behaviors, whereas autonomy-limiting strategies elicited neutral to slightly destructive relational behaviors. While the difference in response valence between the two groups may not be statistically significant, the patterns suggest that targets respond more constructively to the autonomy-supporting strategies than to the autonomy-limiting strategies. Given research showing that targets report responding with more positive emotions when agents use autonomy-supporting strategies (e.g., Tucker & Anders, 2001), it follows that targets would also

behave more positively toward the agent when the agent uses such strategies, even in a hypothetical scenario.

It is interesting that the relational behaviors elicited by the autonomy-limiting strategies were not highly destructive. This could be due to either the hypothetical nature of Study 1 or because targets do not respond highly destructively to social control in real life. In a hypothetical scenario, one might predict that target would engage in more destructive responses than they might in real life, because the consequences of their destructive behavior for the relationship could be less salient than in reality. However, target might also feel less negatively about hypothetical social control than they would about social control actually occurring in their relationship, and thus may not react as negatively to social control. Study 2 will examine the effect of strategy type on relational behaviors that targets report engaging in and will help tease apart whether the findings in Study 1 were due to the hypothetical nature of the scenario or whether they reflect a true effect.

With regard to healthiness of eating, although there was no effect of strategy type on healthiness of eating the first time agents enacted a social control strategy, targets who viewed the autonomy-supporting SCS indicated they would eat healthier over time compared with targets who viewed the autonomy-limiting SCS. This suggests that there may be a delay in the effectiveness of autonomy-supporting strategies in positively affecting healthiness of eating. Although this is consistent with the premise that autonomy support facilitates healthier behavior over time by promoting the development of autonomous motivation (Ng et al., 2012), the Social Control Scenarios used in Study 1 unfolded over a matter of minutes, rather than over a longer period of time, and involved

hypothetical decisions. Thus, it is unclear whether the results would generalize to ongoing relationships and engagement in health behaviors over time beyond this experimental context. Study 2 is designed to address this limitation.

Does Motive Type Affect Relational Behavior and Healthiness of Eating?

Exploratory analyses examined the role of motive type (independent agent motives for enacting social control versus interdependent motives) as a unique predictor for both relational behavior and healthiness of eating. Past research has found that targets who were asked to imagine that the agent enacted social control for health concerns, which could be conceived as interdependent motives, reported that they would experience more positive emotions than targets who imagined that the agent enacted social control for appearance concerns, which could be conceived as independent (Lewis & Butterfield, 2005). However, the researchers found that motive type did not predict health behavior change intentions. Study 1 found that there was no effect of motive type on healthiness of eating responses, initially nor over time. With respect to relational behavior, targets who viewed the interdependent motive manipulation chose fewer constructive relational behaviors over time, whereas targets who viewed the independent motive manipulation chose more constructive relational behaviors over time. However, the effect does not appear to be meaningful; people generally responded with neutral relational behaviors, regardless of the motive condition they were in. Overall, motive type seems to have had a negligible effect on relational responses and no effect on eating responses.

One potential explanation for these findings is that the independent motive manipulation did not reflect independent motives as strongly as the interdependent motive manipulation reflected interdependent motives. A limitation of Study 1 is that the

motive manipulation was not tested for realism and individuals were not asked about whether they have ever attributed similar motivations to their romantic partner's use of social control. Despite extensive piloting of the motives manipulation, it was challenging to develop an independent motive manipulation that was sufficiently distinct from the interdependent motive manipulation. Rather, the independent motive manipulation was found to be more neutral than extremely independent. Given that Lewis and Butterfield (2005) found few effects of their motive manipulation, it could be that motive type is challenging to experimentally manipulate. One next step for future research is to examine the variety of motives that targets attribute to agents' use of social control and to determine how to recreate those motives in an experimental setting.

Study 2

Study 1 was designed to examine whether targets' health and relational responses to autonomy-supporting and autonomy-limiting social control strategies differ as a function of the type of motive attributed to the agent's use of social control (independent versus interdependent). One contribution of Study 1 is that it enables the examination of relational and eating responses to different kinds of social control strategies when the agent's use of social control is consistent over time. Additionally, Study 1 examined hypothetical responses to social control and asked the question, "How do people anticipate they would respond to their partner's use of different social control strategies?" In other words, Study 1 examined the hypotheses in a controlled environment where the strategies agents used and targets' response options were held constant.

In real-life, agents within relationships likely play a much more dynamic role in social control situations than is represented in the hypothetical scenarios used in Study 1.

In particular, agents are likely to adjust their use of social control strategies according to targets' reactions. Given that social control situations are, fundamentally, social *exchanges* between partners, it is important to understand the ways agents and targets affect, and are affected by, each other's behaviors. For instance, how do changes in agents' use of social control strategies affect changes in targets' responses to social control? Although Study 2 does not involve the collection of dyadic data, Study 2 represents a first step in understanding this dyadic process, as it will involve targets reporting on both their own and their partner's (i.e., the agent's) behavior. Study 2 is designed to (a) collect descriptive information on agents' use of different social control strategies, (b) examine how targets' perceptions of agents' social control strategies and motives determine their eating and relational responses, and (c) examine how targets' responses to social control affect agents' subsequent social control attempts. Study 2 uses experience-sampling methods (Bolger, Davis, & Rafaeli, 2003) to accomplish these three goals.

The Use of Social Control Strategies: Frequency, Variability, and Covariance with Motives

Little is known about the frequency with which agents use social control strategies, the variability in agents' use of social control strategies, or how different social control strategies co-vary with different motives. However, the frequency and variability of social control strategies, as well as how they co-vary with motives should be important determinants of targets' responses over time. The frequency with which agents use different types of social control strategies should be important because if autonomy-limiting strategies are used infrequently, for example, this may lead targets to respond

more constructively than if autonomy-limiting strategies are used on a daily basis. Targets may be more unwilling to engage in a behavior that is detrimental to the relationship if they perceive that the agent will only use a strategy once in a while, whereas if the use of autonomy-limiting strategies becomes a pattern, targets may respond destructively in order to stop the agent's behavior. The variability in agents' use of certain social control strategies over time is likely to lead to specific patterns of targets' health and relational responses. Additionally, it may be the case that different social control strategies naturally co-vary with different motives. Although Study 1 tested all four possible combinations of social control strategies and motives, examining the covariance between different strategies and motives in ongoing relationships may reveal that some combinations occur more often than others (e.g., autonomy-supporting strategies combined with interdependent motives may occur more often than autonomy-supporting strategies combined with independent motives). Thus, the first goal of Study 2 is to examine characteristics of social control situations with regard to agents' use of social control strategies and the covariance of different strategies with different motives.

Frequency

Studies on social control typically assess the use of social control strategies using general measures, such as assessing the extent to which it was present (e.g., "Today, I received emotional support from my partner," rated from 1 = *definitely not true* to 6 = *completely true*) (Lüscher & Scholz, 2017; Scholz, Stadler, Ochsner, Rackow, Hornung, & Knoll, 2016), assessing the frequency of a limited number of behaviors reflecting general types of social control (e.g., "My partner reminded me of strategies which help me to resist smoking;" Lüscher & Scholz, 2017) (Ochsner et al., 2015; 2014; Scholz et

al., 2016), or measuring frequency of social control on a limited time scale (e.g., how frequently one's spouse engaged in different strategies in the last month on a scale of 0 = *never* to 4 = *every day*; Franks et al., 2006) (Stephens, Rook, Franks, Khan, & Iida, 2010). Although a few studies have reported the frequency of social control on a weekly basis (Tucker & Anders, 2001) or even on a daily basis (Novak & Webster, 2011), these studies limit targets to a specific set of social control strategies generated by previous research, rather than enabling targets to indicate other ways in which the agent has enacted social control. Therefore, daily assessments that are inclusive of all possible specific strategies that agents could enact are needed to examine the frequency with which social control strategies are used.

Research Question 3: How often do agents use autonomy-supporting and autonomy-limiting social control strategies per day?

One challenge faced by social control researchers is how many social control strategies should be presented to targets. Most studies offer a limited number of strategies to targets. For instance, Butterfield and Lewis's (2002) commonly used measure includes 28 strategies. Additionally, strategies that are presented often have little context, which makes it challenging to determine whether they are autonomy-supporting or autonomy-limiting. For instance, one strategy included in Butterfield and Lewis's (2002) social control measure is "Try to change something in the target's home or work," which was coded by the researchers as a positive strategy. Arguably, this strategy could be positive or negative (or autonomy-supporting or autonomy-limiting), depending on the context. Ultimately, providing additional context necessitates providing more strategies to targets. However, participant burden and fatigue must be mitigated in diary studies. One solution

to this problem is to present social control strategies more generally (e.g., in a broad category) and then, if a target indicates that the agent has used a general strategy, a more precise list could be presented. Study 2 uses a hierarchical presentation of strategies to assess both the breadth of strategies used and specific strategies used.

Variability

Agents can vary in their use of different types of social control strategies, both in terms of varying across strategy type (e.g., varying whether autonomy-supporting or autonomy-limiting social control is used) and varying within strategy type (e.g., using different autonomy-supporting strategies). Study 2 is designed to examine both kinds of variability, but will focus on variability across strategy type here. No research to date has examined whether agents vary in their use of different types of social control strategies over time. Variability should be important in determining targets' health and relational responses primarily because it should set up targets' expectancies for the type of social control that the agent will use in the future. Targets are likely to respond differently if they anticipate that the agent will continue using a strategy versus if they anticipate that the agent will stop using a strategy. The consistent use of one type of strategy over another is likely to lead the target to expect that the agent will continue using that type of strategy. If the target expects that the agent will continue using a certain strategy, then the target may be more likely to change their own health behavior (e.g., because they have constant support or constraint of their partner). Targets who expect that the agent will continue using a strategy type may also change their relational behavior. For example, if the agent is using social control strategies that the target does not like (and the target expects them to continue using such strategies), the target may respond with destructive

behavior in an effort to prevent the agent from using such strategies in the future. In turn, the target's destructive behavior could lead the agent to be more variable with their enactments of social control in the future.

If the agent varies in their use of social control strategies, the target may be unsure of whether or not the agent will enact different strategies in the future, and this could lead the target to not comply with the requested change, because they may be unsure of the agent's motives or goals, or the target's behavior may not be reinforced consistently enough to elicit change. These are all empirical questions that are not examined explicitly in the current research, but that illustrate the importance of understanding agents' variability in their use of social control strategies.

> **Research Question 4:** Do agents vary in the degree to which they use different types of social control strategies (autonomy-supporting versus autonomy-limiting) over time?

Covariance with Motives

Some research has examined the extent to which agents' use of a type of social control strategy is associated with different motives (as reported by agents). For instance, agents retrospectively report using more social control strategies in the past six months (both positive and negative), when they also (currently) report greater desire for the target to improve their health and quality of life, and more positive control strategies when they report greater desires for living a healthy lifestyle together with the target (e.g., the agent wanting the target to eat healthy with them) (Burke & Segrin, 2017). Research has also shown that agents report using negative strategies as their dissatisfaction with the target's appearance increases (Markey et al., 2008). However, no research has examined whether

different types of strategies co-vary with different target perceptions of agents' motives. It is likely that targets perceive different types of strategies as stemming from different motives. For instance, it could be that autonomy-limiting strategies are more likely to be associated with perceptions of independent motives than with interdependent motives because attempts to control the target's behavior may be perceived as selfish. It is important to examine how different social control strategies naturally co-vary with different motives because such data would speak to the generalizability of the combinations of motives and strategies used in Study 1 to real-life relationships.

> **Research Question 5:** How do different types of social control strategies (autonomy-supporting and autonomy-limiting) used by agents co-vary with the different types of motives (independent and interdependent) that targets ascribe to agents' behavior?

Effects of Social Control Strategies on Targets' Relational and Eating Behavior

The second aim of Study 2 is to examine associations between the social control strategies agents use and targets' same-day and next day relational and eating responses. In Study 1, the types of social control strategies enacted were held constant, the relational response options were limited, the scenario and response choices were hypothetical, and the type of social control strategy and motive were randomly assigned to participants. All of these features are likely to vary and change in real-life relationships. Study 2 tests the extent to which the patterns found in Study 1 are conceptually similar when observed in ongoing romantic relationships in which agents' social control strategies have implications for their relationship and targets' responses have implications for their health and relationship. The Study 2 predictions for how the type of social control

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strategy used and targets' attributions for agents' motives are based on the same theoretical principles that shaped the predictions for Study 1. Although Study 1 showed support for main effects of strategy type on relational behaviors and healthiness of eating, Study 1 tested hypotheses in a controlled environment. Study 2 offers an examination of the hypotheses in a natural setting.

Hypothesis 5: The effect of autonomy-supporting and autonomy-limiting social control on relational responses will be moderated by targets' perceptions of agents' motives. Specifically:

Hypothesis 5a: Autonomy-supporting strategies will be more likely to elicit constructive relational behaviors the same day and the day after they are enacted when targets' perceptions of agents' motives are higher in interdependence than when they are lower in interdependence.

Hypothesis 5b: Autonomy-limiting strategies will be more likely to elicit destructive relational behaviors the same day and the day after they are enacted when targets' perceptions of agents' motives are lower in interdependence than when they are higher in interdependence.

Hypothesis 6: The effect of autonomy-supporting and autonomy-limiting social control strategies on health behavior will be moderated by targets' perceptions of agents' motives. Specifically:

Hypothesis 6a: Autonomy-supporting strategies will be more likely to elicit slightly healthier eating behaviors the same day they are enacted, and increasingly healthy behaviors the day after they are enacted (due to greater likelihood of target developing autonomous motivation) when targets' perceptions of agents'

motives are higher in interdependence than when they are lower in interdependence.

Hypothesis 6b: Autonomy-limiting strategies will be more likely to elicit healthy eating behaviors the same day they are enacted, but not the day after they are enacted (due to greater likelihood of target developing controlled motivation), when targets' perceptions of agents' motives are lower in interdependence than when they are higher in interdependence.

Effects of Targets' Health and Relational Responses on Agents' Subsequent Social Control Strategies

Finally, the third aim of Study 2 is to examine whether targets' health and relational responses to an agent's social control strategies affects the social control strategies the agent subsequently uses. Social control situations are not one-off interactions in which the agent enacts a social control strategy and the target responds. Rather, what occurs during a social control situation at one point in time is likely to affect social control situations in the future. In fact, given that both partners can be both agents and targets, one person's use of social control can affect the other person's use of social control (see Butterfield & Lewis, 2002). Most research on social control considers how the agent's social control strategies affect the target's behavior. However, neither theory nor research has considered how target responses to social control are perceived, interpreted, or taken into account by the agent in ways that inform the agent's future use of social control. Study 2 provides the first descriptive examination of whether targets' health and relational responses to an agent's social control strategies affects the social control strategies the agent subsequently uses.

Given that targets are likely to have both health and relational responses to social control, agents are likely to take both kinds of responses into account when deciding whether or not social control was successful and in weighing the costs and benefits of enacting social control in the future. If the target responds in relationally constructive ways to social control, this may reinforce the agent's behavior, thus leading the agent to use the same type of strategies (e.g., autonomy-supporting) in the future. Constructive target responses may also lead agents to use more social control strategies (i.e., increase in quantity). In contrast, if the target responds in a relationally destructive way, this may either lead the agent to stop using the same type of strategy, use fewer social control strategies, or it may lead the agent to use a different type of strategy.

> **Research Question 6:** Do targets' relational behaviors lead agents to change their use of social control? Specifically, do targets' constructive relational behaviors on days when agents use social control predict agents using the same type of social control strategy (i.e., continue to use autonomy-supporting or autonomy-limiting strategies)? Do targets' destructive relational behaviors on days when agents use social control predict agents using different types of social control strategies (e.g., switching from autonomy-limiting to autonomy-supporting strategies)?

With regard to how the target's behavioral response should impact agents' future social control, there are several competing possibilities. If the target complies with the agent's request for change and engages in the healthy behavior, this may lead the agent to think that social control is no longer needed, and the agent may discontinue social control efforts. Alternatively, the target's compliance could lead the agent to think that social control is effective and that they should continue using it (e.g., if an agent reminds the

target that there are fresh vegetables in the fridge and the target then eats the vegetables, the agent may feel compelled to continue using such reminders in the future). In contrast, if the target does not comply with the agent's request for change, agents may continue to use social control to change the target's behavior. These associations may also differ as a function of the health behavior being targeted. In the case of eating behavior, behavioral compliance may not change the agent's social control, because eating occurs multiple times a day, every day. Thus, the target may need to comply (or not comply) repeatedly before the agent shifts their use of social control. Study 2 examines the associations between targets' eating responses and agents' future social control, which will pave the way for future research examining moderators and mediators.

> **Research Question 7:** Do targets' health behaviors on days when agents use social control predict agents' next day social control? Do healthier behaviors on days when agents use social control predict agents using the same type of social control strategy (i.e., continue to use autonomy-supporting or autonomy-limiting strategies)? Do targets' unhealthy behaviors on days when agents use social control predict agents using different types of social control strategies?

Relationship Quality as a Moderator of the Effect of Targets' Responses on Agent's Social Control

Given that targets may have conflicting reactions to social control (e.g., constructive relational responses but unhealthy eating responses), it is likely that agents are sometimes forced to make trade-offs in their priorities. In some contexts, targets' relational responses are likely to be more powerful determinants of agents' future enactment of social control strategies, whereas in other contexts, targets' health responses

are likely to take precedence. One factor that should determine the relative predictive power of relational responses, in particular, is relationship quality. Specifically, relationship quality should moderate the association between targets' relational responses and the type of social control strategies the agent subsequently uses. In high quality relationships, agents may be more attentive and responsive to targets' relational responses than in low-quality relationships, because agents in high quality relationships should be more likely to care about relationship maintenance. However, it could also be the case that agents in high quality relationships may be less responsive to targets' relational responses because the maintenance of the relationship is more secure (e.g., a destructive response from the target is unlikely to cause dissolution). In high quality relationships, targets also may have more constructive responses to social control. This is supported by the Study 1 finding that people in high quality relationships responded more constructively after their partner enacted the first instance of social control than people in low quality relationships.

In low quality relationships, agents' use of social control may have especially negative implications for the relationship, such that it may be more costly for agents to use social control because the relationship may not be able to endure conflict well. In addition, targets in low quality relationships may be more likely to have more negative responses to social control, in general. The moderating effect of relationship quality on the association between targets' relational responses and agents' social control should also be determined by the extent to which the agent is motivated to change the target's behavior. For example, in high quality relationships, agents who are highly motivated to change the target's health behavior may be more likely to continue enacting social

control despite targets' negative reactions. Agents may also be more motivated to enact social control, in general, in high quality relationships, because agents may be more concerned about the target's long-term health and well-being.

The current research is not designed to test all of these questions. However, collecting descriptive information regarding how targets' relational responses to an agent's social control strategies affects the social control strategies the agent subsequently uses will provide preliminary evidence of such associations that can be used to inform future studies.

Research Question 8: Does relationship quality moderate the association between targets' relational responses and the type of social control strategies the agent subsequently uses?

Method

Pre-Registration and Power Analysis

The hypotheses, methods, and analytic plan were pre-registered on the Open Science Framework (https://osf.io/w4xdh). At the time of pre-registration, it was planned that 90 participants would be enrolled in the study. This sample size was determined to be adequate to detect a small effect ($f = .10$) at 93% power (G*Power, Faul et al., 2007). Due to a subsequent increase in funding for this study, the sample size goal was increased to 150 participants. The final sample included 147 participants. A post-hoc power analysis determined that this sample was adequate to detect a small effect ($f = .10$) at 99% power.

Participants

One hundred and forty-seven individuals in romantic relationships who reported that they (a) are over the age of 18, (b) cohabit with their romantic partner, (c) have been

in a relationship with their partner for more than 3 months, (d) are fluent in English, (e) eat at least 5 meals per week with their partner, (f) engage in *very unhealthy, somewhat unhealthy, a mix of healthy and unhealthy*, or *somewhat healthy* eating habits, (g) are *a little interested* to *extremely interested* in improving their eating habits, (h) have a smartphone, (i) do not work overnight shifts, and (j) typically fall asleep after 8:00PM were eligible to participate. Participants were recruited from October 26, 2019 through November 13, 2019 and from January 16, 2020 through April 2, 2020. There were no participants enrolled in the study from November 25, 2019 through January 15, 2020 in order to avoid data collection during Thanksgiving, Christmas, New Year's, or Winter Break, as participants may engage in different eating behaviors during the holidays (e.g., Hull, Hester, & Fields, 2006).

Participants were recruited from the University of Minnesota and the Twin Cities metropolitan area by promoting the research study in undergraduate psychology courses, posting advertisements around campus, posting on Craigslist, by emailing graduate students at the University of Minnesota using a list of email addresses from the Office of Institutional Research, and by contacting participants from previous relationship studies who agreed to be contacted with future research opportunities. Additionally, participants were recruited from online sources, such as Facebook.com, Reddit.com, and ResearchMatch.org.

Descriptive statistics for the study sample can be found in Table 18. Most participants identified as women (69%), were not of Hispanic, Latino/a, or Spanish ethnicity (94%), and were White (85%). Participants were in young adulthood (mean age = 28.50 years old), had a range of educational backgrounds, reported a range of

household incomes, and were either employed or students. Most participants were either almost engaged to their partner or were married to their partner. Most participants were exclusive with their partner (95%), were in a relationship with someone of the opposite gender identity (92%), did not have children (79%), and had an average relationship length of 6.12 years. Participants ate an average of 9.35 meals with their partner each week.

With regard to their health, most participants rated their own health as *very good* or *good* (mean of 2.62 on a scale ranging from 1 = *poor* to 5 = *excellent*), rated the healthiness of their eating habits as *a mix of healthy and unhealthy* (mean of 4.37 on a scale ranging from 1 = *extremely unhealthy* to 7 = *extremely healthy*; participants who indicated that their eating was *very healthy* or *extremely healthy* were not eligible to participate) and indicated that they were *somewhat interested* or *very interested* in improving their eating habits (mean of 3.56 on a scale ranging from 1 = *not at all interested* to 5 = *extremely interested;* participants who indicated they were *not at all interested* were not eligible to participate).

Measures and Procedure

Participants that indicated interest in participating were emailed a link to a Qualtrics survey, which contained screening questions to determine their eligibility (see Appendix A). Participants who met eligibility criteria viewed the consent form, and participants who consented were then asked to select a day and time to meet virtually with a researcher via Google Hangouts or Zoom to go over the details of the study. Participants were instructed to choose a day and time to start the study that preceded a 2-

week period of time during which both they and their partner would be at home (i.e., neither person would be traveling).

Participant Meeting with Researcher and Participant-Researcher Interactions

Each participant met individually with a research assistant to review the details of the study, to go over the questions in the daily surveys, and to register their smartphone with SurveySignal (Hofmann & Patel, 2015). SurveySignal was used to send participants one SMS with the link to the daily survey on Qualtrics and one reminder SMS each day for 15 days. Participants were instructed that they would receive an SMS at 8:00PM (in whichever time zone they were in) and that they would be able to complete the survey until 3:00AM, after which the link would become invalid. Participants were also instructed that they would receive one reminder SMS at 9:00PM if they did not complete the survey by that time. Then, the research assistant shared their screen with the participant and went through each question of the daily survey, using specific examples of responses for each question in order to ensure a uniform training experience for each participant (see Appendix E for examples). The research assistant frequently asked the participant if they had any questions in order to help ensure that participants understood each aspect of the survey. After reviewing the survey, the research assistant sent the participant a link to the SurveySignal registration page and the participant registered their smartphone to receive the daily SMS with the survey links.

The day after the meeting, the participant was sent an email at 9:00AM to remind them that they would receive the link to the first survey at 8:00PM that evening. The first time a participant missed a survey (if they missed any surveys), the researcher emailed the participant to make sure that there were not any technical issues and to resolve any

issues that occurred. Participants completed surveys for 15 days. All participants, regardless of how many surveys they completed, received an Amazon gift card for $15 or $25[6] or 4 REP points (if they were in the Research Experience Program participant pool at the University of Minnesota). If participants completed at least 11 surveys, they received an additional $5 on the Amazon gift card (for a total of $20-$30) and were entered in a lottery for a chance to win 1 of 10 $50 Amazon gift cards at the end of data collection in April 2020.

Baseline Questionnaire (Day 1)[7]

The baseline questionnaire included all questions that were assessed in Study 1, including demographic characteristics, the Perceived Relationship Quality Components Inventory, and questions about participants' relationship and health. Two items were added: participants were asked to indicate the time they typically fall asleep and wake up and the time they typically stop eating meals for the day.

Relationships Measures. As in Study 1, participants completed the Perceived Relationship Quality Components (PRQC) Inventory (Fletcher, Simpson, & Thomas, 2000), which assesses individuals' satisfaction ($\alpha = .96$), commitment ($\alpha = .93$), intimacy ($\alpha = .83$), trust ($\alpha = .86$), passion ($\alpha = .84$), and love ($\alpha = .83$) in their relationship (e.g., "How satisfied are you with your relationship?" 1 = *not at all* to 7 = *extremely*). Items within each subscale were aggregated and items across subscales were also aggregated (resulting in scores for each subscale and a global score of relationship quality (see Table

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[6] The amount of the gift card was changed from $15 to $25 at the end of February 2020 in an effort to increase study recruitment. 28 participants were recruited with the $15 compensation rate and 119 participants were recruited with the $20 compensation rate.

[7] Individuals who completed the study in October and November of 2019 completed an online baseline questionnaire prior to their virtual meeting with the researcher. Individuals who completed the study in January onwards completed the online baseline questionnaire the day after their virtual meeting with the researcher.

18 for means and standard deviations). The overall reliability for the PRQC was high (α

= .95).

Participants also completed two items assessing the frequency and acceptability of

social control in their relationship regarding being a target of health-related social

control: (1) How often does your partner try to change your health behaviors? (1 = *never*

to 6 = *always*) and (2) Within your relationship, how acceptable is it for your partner to

try to change your health behaviors? (1 = *not at all acceptable* to 5 = *very acceptable*).

The item reflecting how acceptable it is for one's partner to change one's health behavior

was used as the item reflecting social control norms. See Table 18 for means and standard

deviations.

Daily Surveys (Day 2 – 15)

For 14 days, participants completed an identical survey that assessed their

partner's use of social control, their perceptions of their partner's motives for enacting

social control, their relational behaviors toward their partner, the healthiness of their

eating, and their eating behaviors (see Appendix F). Participants were encouraged to

complete the questionnaire in a private space and to refrain from discussing their answers

with their partners. First, participants entered their unique participant ID number and their

partner's first name or initials. Participants completed the measures in the following

order:

Agents' Use of Social Control Strategies. Participants were shown the following

instructions:

"*Romantic partners can affect each other's eating behavior in many ways. Below*

is a list of behaviors that your partner may have engaged in that could affect your

eating. Please select all behaviors that your partner engaged in during the last 24 hours."

Participants were shown a list of nine categories[8] of social control strategies that their partner could have engaged in that day that could affect their eating (see Appendix F). The list of categories was shown in a random order. Notably, participants were **not** instructed, at first, to indicate whether their partner had engaged in any of the behaviors to *intentionally* affect their eating (i.e., social control behaviors). Thus, the first set of behaviors is referred to as "partner behaviors" and the second set of behaviors will be referred to as "partner social control behaviors." In addition to the nine categories of social control strategies, participants had the option to indicate that their partner did not do anything to affect their eating and the option to indicate that they did not interact with their partner that day (participants were instructed that interactions included physical and virtual communication with their partner). Participants were asked to select all behaviors that their partner engaged in during the last 24 hours.

This method of showing participants a smaller number of categories and then more specific behaviors was developed in order to reduce participant burden and fatigue. To develop the list of social control strategies and the categories they fell under, I compiled a list of strategies from the most commonly used measures of social control (as was used in the development of the strategies used in Pilot Studies 1 and 2 and Study 1), removed redundant strategies, and generated strategies that were not included in the measures. This method resulted in 60 strategies. Two experts categorized the strategies

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[8] Participants were also shown an additional category that they could select to indicate that their partner did something to encourage them to eat less healthy. Sixty-nine percent of participants indicated that their partner engaged in at least one behavior to encourage them to eat less healthy during the study period. This category is not included in the analyses reported here.

and indicated whether each strategy could fall under multiple categories (and indicated which category). Informal piloting showed that participants understood the categories. Participants indicated that their partner engaged in a behavior that could affect their eating on 67% of the diary days (or approximately 8.55 days of the 14-day study period for the average participant). Figure 9 shows the distribution of the number of days on which participants selected at least one category (indicating that their partner engaged in a behavior that could affect their eating). The average participant selected 1.25 categories per day ($SD = 0.69$, median = 1.17, range: 0 – 7 categories).

If participants indicated that their partner engaged in a category of behaviors, participants were then shown a list of specific behaviors their partner could have used within that category. These specific behaviors were shown in a random order. For instance, if a participant indicated that their partner tried to change their home or routines to help them eat healthier, on the next screen, participants viewed a list of specific behaviors, such as that their partner cooked healthy meals with them, planned healthy meals with them (e.g., meal prepped), purchased healthy foods for them, avoided buying unhealthy foods, etc. Participants also were given the opportunity to write in a behavior that fell in the category but was not listed in the options provided. On days when participants indicated that their partner engaged in a behavior that could affect their eating, the average number of behaviors the average participant selected was 3.42 behaviors ($SD = 1.78$, median = 3.22, range: 1 - 24).

Targets' Perception of Partner Behaviors as Social Control. Participants who indicated that their partner engaged in one or more behavior that could affect their eating were then asked to indicate if any of the behaviors their partner used were designed to

intentionally affect their eating. Participants were shown a list of the behaviors they chose and were asked to select any that they believed their partner engaged in to intentionally affect their eating. On days on which a participant indicated that their partner engaged in at least one behavior that could affect their eating, the average number of behaviors the average person indicated was a social control behavior per day was 1.55 behaviors (SD = 1.43, median = 1.17, range: 1 – 20 behaviors).

Classifying Partner Behaviors as Autonomy-Limiting, Neutral, and Autonomy-Supporting. In order to create variables to capture the type of social control the partner used, the behaviors were independently rated along the autonomy-supporting to autonomy-limiting dimension. Undergraduate research assistants (n = 5) rated the 60 specific behaviors within each category, along with participants' open-ended responses including something their partner did to affect their eating, on the autonomy-limiting to autonomy-supporting dimension (7-point Likert-type scale with responses ranging from 1 = *extremely limiting*; 4 = *neither limiting nor supportive [neutral]*; 7 = *extremely supportive*). In each instance, the coders viewed the category that the behavior was in (e.g., "My partner tried to make me feel good about my eating") and the specific behavior in that category (e.g., "Complimented or praised my eating choices") and then gave the specific behavior a rating on the limiting to supporting dimension. Reliability was assessed using intraclass correlations (Shrout & Fleiss, 1979) and was sufficient (ICC = 0.76, p < .001) (ICC values between 0.75 and 0.90 are indicative of good reliability; Koo & Li, 2017).

To classify the behaviors as autonomy-supporting or autonomy-limiting, I used the overall mean for each strategy and tested whether it significantly differed from the

scale midpoint (which denotes a strategy as neutral) using a one-sample t-test (see Table 19 for means, t-test results, and categorization for each strategy). Of the 60 strategies, 9 were categorized as autonomy-supporting, 20 were categorized as neutral, and 31 were categorized as autonomy-limiting (see Table 19). An example of an autonomy-supporting strategy is "avoided criticizing my eating choices." An example of a neutral strategy is "shared healthy eating information or recipes with me." An example of an autonomy-limiting strategy is "avoided buying unhealthy foods."

Additionally, 80 of the diary responses included one or more specific behaviors generated by participants (that they reported their partner engaging in). Reliability for the open-ended responses was moderate (ICC = 0.65, $p < .001$); ICC values between 0.50 and 0.75 are indicative of moderate reliability; Koo & Li, 2017). Of the 80 strategies, 9 were categorized as autonomy-supporting, 35 were categorized as neutral, and 36 were categorized as autonomy-limiting.

Targets' Perception of the Agent's Motives for Enacting Social Control. Next, participants who indicated that their partner engaged in behaviors to affect their eating were given the following instructions:

> "*Partners often have different reasons for trying to change each other's eating behavior. Sometimes partners try to affect each other's eating behavior due to their own best interests (e.g., what's best for them, personally). Other times, partners are motivated by their partner's interests (e.g., what's best for their partner).*"

Then, they were asked, "To what extent were your partner's behaviors related to your eating today motivated by what is best for them versus what is best for you?" Participants

indicated their response on a 5-point Likert-type scale (1 = *my partner's behaviors were completely motivated by what is best for them*; 3 = *my partner's behaviors were equally motivated by what is best for them and what is best for me*; 5 = *my partner's behaviors were completely motivated by what is best for me*). The motives item was recoded such that negative values reflect agent motives that are more independent, values of zero reflect agent motives that are neutral, and positive values reflect agent motives that are interdependent (in the sense that the agent is motivated by what they think is best for the target). For the average person on a given day, the average motive rating was 0.05 (SD = 0.61, median = 0, range: -2 – 2), indicating perceptions that one's partner's behaviors were equally motivated by what is best for them and what is best for the individual.

Targets' Relational Behaviors. Next, all participants were shown a series of 11 items regarding how they thought, felt, and behaved during interactions with their partner that day (Overall, Sibley, & Travaglia, 2010, Study 2) and were asked to select all that applied to their interactions with their partner that day. The items were based on items assessing EVLN behaviors during interactions with romantic partners (Drigotas et al., 1995; Kammrath & Dweck, 2006). Two items tapped each of the four EVLN behaviors, including exit ("I said something or acted in a way that could be hurtful to my partner" and "I was critical or unpleasant toward my partner"), voice ("I openly shared and discussed my feelings and opinions with this person" and "I focused on maintaining or improving the quality of my interactions with this person"), loyalty ("I was willing/tried to ignore anything this person did or said that irritated or upset me" and "I was willing to let this person have things his/her way") and neglect ("I wanted to be left alone and/or spend less time with this person" and "I withdrew from this person and started doing my

own thing"). Two items reflecting appreciation/gratitude and one item reflecting the display of affection were added. Items are worded to ensure relevance to all types of everyday social interactions between romantic partners (see Appendix F). Additionally, there was an option for participants to indicate they did not interact with their partner that day. Items that reflect exit or neglect were categorized as destructive relational behaviors and averaged; items that reflect voice, loyalty, or appreciation/gratitude were coded as constructive relational behaviors and averaged (see Appendix F)[9].

The average number of constructive relational behaviors and the average number of destructive were negatively and significantly correlated ($r = -0.06$, $p < .05$). The average person reported that they engaged in at least one relational behavior (a constructive behavior, destructive behavior, or both) toward their partner on 12.59 days of the 14-day study period ($SD = 1.68$, median = 13.00, range: 7 – 14 days). Figure 10 shows the distribution of individuals who reported engaging in relational behaviors across the diary days. On the days that individuals reported engaging in a relational behavior, the constructive behavior that was most frequently selected was "I showed affection toward my partner" (96% of the sample indicated they showed affection toward their partner at least once during the study period) and the destructive behavior that was most frequently selected was "I withdrew from my partner and started doing my own thing" (31% of the sample indicated they withdrew from their partner at least once during the study period). On days on which individuals reported engaging in relational behaviors

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[9] I pre-registered that destructive relational behaviors would be coded as -1 and constructive relational behaviors would be coded as 1. This was changed to an average in order to examine the amount of constructive or destructive relational behaviors engaged in, rather than the occurrence of constructive or destructive relational behaviors.

toward their partner, the average person reported using an average of 3.78 relational behaviors (SD = 1.16, median = 3.77, range: 0 – 11 relational behaviors).

For analyses, a balance variable was created by subtracting the destructive behavior average from the constructive behavior average; values above zero indicate that a participant engaged in more constructive relational behaviors than destructive behaviors and values below zero indicate that a participant engaged in more destructive relational behaviors than constructive relational behaviors. For the average person on a given day, the average relational behaviors score was 0.35 (SD = 0.32, median = 0.43), indicating that people typically engaged in more constructive relational behavior than destructive relational behaviors.

Targets' Eating: Healthiness of Daily Eating. Then, participants were asked to think about what they ate for each of their meals and snacks in the last 24 hours and to think about how what they ate compares to the way they typically eat. Specifically, participants were asked, "How would you describe the healthiness of your eating in the last 24 hours, compared to most days?" and responded on a 7-point Likert-type scale (1 = *much less healthy than usual*; 4 = *as healthy as usual*; 7 = *much more healthy than usual*). Healthiness of eating was recoded such that scores below zero indicate eating that was less healthy than usual, scores at zero indicate eating that was as healthy as usual, and scores above zero indicate eating that was more healthy than usual. For the average person on a given day, the average healthiness was -0.17 (SD = 0.38, median = -0.15, range: -3 – 3), indicating that eating was slightly less healthy than usual.

Targets' Eating: Eating Behaviors. Finally, participants were shown a list of 12 items and were asked to select all that were generally true of their eating that day

(adapted from Dailey, Richards, & Romo, 2010). Examples of items included "I ate a variety of foods," "I ate foods high in sugar," and "I went long periods without eating during the day." The six items reflecting healthier eating behaviors were summed and the six items reflecting less healthy eating behaviors were summed.

The sum of healthy eating behaviors and the sum of unhealthy eating behaviors were significantly and negatively correlated ($r = $ -0.23, $p < $ .001). The average person reported that they engaged in at least one eating behavior (healthy or unhealthy) on 12.59 days of the 14-day study period ($SD = $ 1.55, median $= $ 13.00, range: 7 – 14 days). Figure 11 shows the distribution of individuals who reported engaging in eating behaviors across the diary days. On the days that individuals reported engaging in eating behaviors, the healthy behavior that was most frequently selected was "I ate natural foods (e.g., unprocessed foods)" (96% of the sample indicated they ate natural foods at least once during the study period) and the unhealthy behavior that was most frequently selected was "I ate processed foods (e.g., chips, packaged meals, fast food)" (85% of the sample indicated they ate processed foods at least once during the study period). On days on which individuals reported engaging in eating behaviors, the average person reported engaging in an average of 5.19 eating behaviors ($SD = $ 1.29, median $= $ 5.21, range: 0 – 12 eating behaviors).

For analyses, a balance variable was created by subtracting the unhealthy behaviors from the healthy behaviors; values above zero indicate that a participant engaged in more healthy behaviors than unhealthy behaviors and values below zero indicate that a participant engaged in more unhealthy behaviors than healthy behaviors. For the average person on a given day, the average eating behaviors score was 1.92 ($SD = $

1.42, median = 2.07, range: -2 - 5), indicating that people typically engaged in more healthy eating behaviors than unhealthy eating behaviors.

Reflection Questions (Day 15)

On the final night of the study, participants completed the same measures in the survey used on Days 2-14. Then, participants completed a series of reflection questions designed to assess whether the previous two weeks (i.e., the study period for each participant) were typical with regard to their interactions with their partner (see Appendix F). Participants were asked to indicate the extent to which they interacted with their partner during the study period (1 = *I interacted with my partner much less than usual*; 3 = *I interacted with my partner as much as usual*; 5 = *I interacted with my partner much more than usual*) (*M* = 3.80, *SD* = 0.71). Participants indicated the extent to which their partner paid attention to their eating during the study period (1 = *my partner paid much less attention to my eating than usual*; 3 = *my partner paid as much attention to my eating as usual*; 5 = *my partner paid much more attention to my eating than usual*) (*M* = 3.09, *SD* = 0.59). Participants were asked to describe anything atypical that happened in their life during the study period. Additionally, participants were given the descriptions of limiting and supportive behaviors and were asked to indicate how limiting versus supportive they found their partner's behaviors related to their eating to be during the study period on a 7-point Likert-type scale (1 = *extremely limiting*; 4 = *neither limiting nor supportive [neutral]*; 7 = *extremely supportive*) (*M* = 5.10, *SD* = 1.18). These questions were not used in the present analyses.

COVID-19 Questions. Items were added to the final night's survey to reflect the emergence of COVID-19 in March 2020 and to assess any changes to individuals'

interactions with their partners, their motivation or their partner's motivation to improve

their own eating habits, the availability of various food groups, their social interactions,

and their employment status (see Appendix G). Additionally, the existing items were

modified to include the first two months of the year (January and February 2020) as the

referent, rather than the past six months (e.g., "How much did you interact with your

partner in the last 2 weeks, compared to the first 2 months of this year [i.e., January and

February]?"). Appendix G displays the full list of COVID-19 items, the means and

standard deviations of these items, and differences between participants who completed

the survey prior to the COVID-19 pandemic and during the COVID-19 pandemic.

Analysis Plan

Social Control Variables

I created continuous autonomy-supporting social control (SC) and autonomy-

limiting SC variables by summing the number of autonomy-supporting and autonomy-

limiting strategies selected by participants as social control each day. These variables

were highly skewed, such that skewness for the continuous autonomy-supporting SC

variable was 3.19 and skewness for the continuous autonomy-limiting SC variable was

4.43). The variables were skewed because autonomy-supporting social control only took

place on 22% of diary days and autonomy-limiting social control only took place on 15%

of diary days. The continuous social control variables were used for descriptive purposes

(i.e., examining Research Question 3).

For multilevel modeling, two dichotomous variables were created from

participants' reports of daily social control. Autonomy-supporting social control (SC)

denotes whether or not the participant reported that the agent enacted autonomy-

supporting social control that day (1 = *Yes, at least 1 autonomy-supporting strategy on the checklist was marked by the participant*; 2 = *No, 0 autonomy-supporting strategies were marked by the participant*). Autonomy-limiting SC denotes whether or not the participant reported that the agent enacted autonomy-limiting social control that day (1 = *Yes, at least 1 autonomy-limiting strategy on the checklist was marked by the participant*; 0 = *No, 0 autonomy-limiting strategies were marked by the participant*).

Research Questions 3 – 5

Research Question 3 (frequency of social control) was assessed by calculating descriptive statistics (e.g., mean, standard deviation, median, range) for the continuous social control strategies. Additionally, the descriptive statistics of neutral social control strategies and the descriptive statistics of all social control strategies (i.e., autonomy-supporting, autonomy-limiting, and neutral) were examined. Research Question 4 (consistency of partners' use of social control strategies) was assessed by examining the variance of participant-reported autonomy-supporting and autonomy-limiting SC. Research Question 5 (associations between different social control types and partner motives) was assessed by examining the mean motives rating on days when individuals' partners only used one type of social control or used both types of social control.

Hypothesis 5 and 6 and Research Questions 6-8

Hypotheses 5 and 6 and Research Questions 6, 7, and 8 were tested using multilevel modeling. Linear mixed effects modeling was conducted using R using the nlme package (Pinheiro et al., 2020) and the lmerTest package (Kuznetsova et al., 2017) and restricted maximum likelihood estimation was used to accommodate the data nestedness and missingness. For each outcome (relational behaviors, healthiness of

eating, eating behaviors, autonomy-supporting SC, autonomy-limiting SC), exploratory analyses were conducted to determine the best-fitting error structure. A first-order autoregressive error structure was used for the relational behavior outcome and the eating behavior outcome. An independent error structure was used for the healthiness of eating outcome, the autonomy-supporting SC outcome, and the autonomy-limiting SC outcome. These error structures were selected because they showed the lowest AIC values of the error structures tested (i.e., independent, compound symmetry, auto-regressive, and unstructured).

Hypothesis 5 and 6 and Research Question 8 Synchronous Models.

Synchronous models were used to test Hypothesis 5 and 6 and Research Question 8. Synchronous models examine the concurrent effects of the predictor on the outcome; for example, what is the effect of autonomy-supporting SC on day *t* on relational behaviors on day *t?* For each outcome, the grand mean of the daily outcome (e.g., relational behaviors) was regressed on the agent's autonomy-supporting SC or the agent's autonomy-limiting SC across the 14 days of assessment with and without controlling for covariates. Additionally, targets' perceptions of agents' motives was included as an interaction term with the agent's autonomy-supporting or autonomy-limiting SC. This involved modeling temporal, within-person variation at Level 1 and between-person variation at Level 2. For example, to test the synchronous associations between autonomy-supporting social control (within-person mean-centered) and relational behaviors, as well as the extent to which they were moderated by perceptions of agents' motives, the mixed effects model (without covariates) is:

$$Relational\ Behaviors_{ij} = \beta_0 + b_{0j} + \beta_1 DailyAutonomySupport_{ij} + b_{1j}Daily$$

$$AutonomySupport_{ij} + \beta_2 PerceptionsofAgentMotives + b_{2j}PerceptionsofAgentMotives +$$

$$\beta_1 DailyAutonomySupport*\beta_2 PerceptionsofAgentMotives +$$

$$b_1 DailyAutonomySupport*b_2 PerceptionsofAgentMotives + e_{ij}$$

This estimated the grand mean in daily relational behaviors (β_0) and individual variance around the grand mean for person j (b_{0i}). Centering followed recommendations by Enders and Tofighi (2007). Specifically, continuous Level-1 predictors (i.e., daily autonomy-supporting SC, perceptions of partner motives) were person-mean centered; this estimated the within-person association between the predictor and relational behaviors (i.e., β_1, β_2) for each person j based on all of their days i. For Level-1 predictors and moderators (e.g., daily autonomy-supporting SC, perceptions of agent motives), random effects of slopes (e.g., b_{1j}) were estimated. This captured between-person differences in the within-person association between the predictor and daily relational behaviors. When random effects were estimated to be zero (i.e., participants' scores did not significantly vary around a given estimate), they were dropped from the model to achieve model parsimony. Continuous Level-2 predictors (i.e., covariates such as relationship quality) were grand-mean centered; therefore, the intercept represented the outcome at the average level of those predictors and their coefficients (e.g., β_4, not featured in the above model) represented between-person associations between the predictor and daily relational behaviors. Marginal R^2 coefficients were estimated for each model to approximate an overall standardized effect size. This reflects the variance in relational behaviors (for example) accounted for by all fixed effects (model predictors).

Research Question 8. To examine whether relationship quality moderates the effect of the target's relational behaviors on agent's subsequent use of autonomy-supporting SC or autonomy-limiting SC, a similar multilevel model structure was used as the one described above. However, instead of including motive perceptions as a fixed effect interaction term, relationship quality was included as a fixed effect interaction term. Relationship quality was grand-mean centered; thus, the intercept represented the outcome at the average level of relationship quality and the coefficient represents the between-person associations between relationship quality and the outcome.

Hypothesis 5 and 6 and Research Questions 6-8 Lagged Models. Lagged models were used to test Hypothesis 5 and 6 and Research Questions 6-8. Lagged models examine the effect of one day's predictor on the next day's outcome. For example, what is the effect of autonomy-supporting SC on day t on relational behaviors on day $t + 1$? The prior day's outcome was also included in the model (to control for autocorrelation; continuous predictors were grand-mean-centered). For example, to test the lagged associations between autonomy-supporting SC (within-person mean-centered) and relational behaviors, as well as the extent to which they were moderated by perceptions of agents' motives, the mixed effects model (without covariates) is:

$RelationalBehaviors\ (day\ t + 1)_{ij} = \beta_0 + b_{0j} + \beta_1 DailyAutonomySupport\ (day\ t)_{ij} +$

$b_{1j} DailyAutonomySupport\ (day\ t)_{ij} + \beta_2 RelationalBehaviors\ (day\ t) +$

$b_{2j} RelationalBehaviors\ (day\ t) + \beta_3 PerceptionsofAgentMotives\ (day\ t) +$

$b_{3j} PerceptionsofAgentMotives\ (day\ t) + \beta_1 DailyAutonomySupport\ (day$

$t)*\beta_3 PerceptionsofAgentMotives\ (day\ t) + b_1 DailyAutonomySupport\ (day$

$t)*b_3 PerceptionsofAgentMotives\ (day\ t) + e_{ij}$

As in the synchronous models, when random effects were estimated to be zero (i.e., participants' scores did not significantly vary around a given estimate), they were dropped from the model to achieve model parsimony.

Data Cleaning

Prior to removing careless responses, a total of 1,932 daily diaries remained out of 2,058 (94% completion rate), with an average completion time of 5 minutes and 40 seconds (SD = 31 minutes and 12 seconds; median = 2 minutes and 28 seconds). Participants, on average, completed 13.28 of the 14 daily diaries (94% response rate) (range: 7 – 14, median = 14, SD = 1.09 diaries). Two diary entries (for different participants) were removed because they indicated that they did not interact with their partner but reported that their partner did something to affect their eating behavior. Two diary entries were also removed because the participant indicated that they did not interact with their partner but reported that they engaged in relational behaviors toward their partner. Following daily diary data cleaning guidelines (McCabe, Mack, & Fleeson, 2012), diaries completed in the fastest 2.5% response times (i.e., less than 48 seconds) were excluded from analysis. The final total number of daily diaries for analysis was 1,877. Due to an error with SurveySignal, four Day 14 surveys were missing, as they were not delivered to participants via SMS. Visual inspection indicated that, although there was higher proportion of diaries missing at Day 10 (e.g., 14% missing on Day 10), the proportion of diaries missing did not increase over time (e.g., 3% missing on Day 9, 5% missing on Day 14).

<div align="center">

Results

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Attrition and Missing Data

All participants who completed the baseline questionnaire also completed at least 7 diary entries. 815 individuals completed the screening survey and 234 individuals who completed the survey were eligible to participate. Of the 234 individuals who were eligible to participate, 197 emailed the lab contact to indicate their interest. 50 individuals either failed to show up for the meeting with the researcher and did not express interest in rescheduling or withdrew their interest in participating. To assess whether missing data can be attributed to differences in any of the key variables or demographic variables, I compared differences in descriptive statistics between individuals who showed different response rates of the daily assessments. Participants were categorized into two groups based on the median number of diaries completed (median = 14; 81 participants completed 14 diaries, 66 participants completed fewer than 14 diaries). Participants did not differ considerably in their demographic characteristics (e.g., age, income, education, gender, relationship quality) nor did they differ in their relational behaviors, eating behaviors, the healthiness of their eating, or the amount of autonomy-limiting or autonomy-supporting SC behaviors enacted by the agent. Thus, it is unlikely that missingness is related to the key variables.

Bivariate Correlations and Covariates

Bivariate correlations between key Study 2 predictors, moderators, dependent variables, and covariates are reported in Table 20. A chi-squared test showed that the number of days targets reported experiencing autonomy-supporting social control and autonomy-limiting social control (dichotomous variables) were significantly and positively associated: $X^2(1) = 4.13, p < .05$). In other words, agents who used autonomy-supporting social control were also more likely to use autonomy-limiting social control.

Relational behaviors were positively correlated with both autonomy-limiting SC ($r =$ 0.06, $p < .01$) and autonomy-supporting SC ($r = 0.14$, $p < .01$), such that targets who are in better relationships also report that the agent engages in both types of social control more frequently. Eating behaviors were positively and significantly correlated with autonomy-supporting social control ($r = 0.11$, $p < .01$), but were not correlated with autonomy-limiting social control. This suggests that targets who report that the agent uses autonomy-supporting SC more frequently also report engaging in healthier eating behaviors, but that reports of autonomy-limiting social control are not associated with eating behaviors. Similarly, healthiness of eating was correlated with autonomy-supporting control ($r = 0.07$, $p < .01$), but not with autonomy-limiting control. Healthiness of eating was positively and moderately correlated with eating behaviors ($r = 0.47$, $p < .01$), indicating that the two variables are related, but distinct reflections of eating. Perceptions of agent motives were significantly associated with all predictors and outcomes.

Based on the inspection of the bivariate correlations and the theoretical framework guiding this work, five covariates were identified to be included in the relational behavior outcome models: average PRQC score, interest in improving one's own eating habits, number of meals eaten with one's partner per week, social control norms, and whether the participant completed the study prior to or during COVID-19 (shortened to "COVID timing"). Six covariates were identified to be included in the eating behavior outcome models (healthiness of eating, eating behaviors): gender, average PRQC score, interest in improving eating habits, number of meals eaten with one's partner per week, social control norms and COVID timing. Four covariates were

identified to be included in the autonomy-limiting or autonomy-supporting outcome models: interest in improving eating habits, meals eaten with one's partner per week, social control norms, and COVID timing.

Data Analysis

Research Question 3: How Often do Partners Use Social Control Strategies? The following results will be reported for the average person.

  All Social Control Behaviors (Autonomy-Supporting, Autonomy-Limiting, and Neutral). Across participants and across diary days, targets indicated that social control occurred on 870 diary days (46% of diary days). The average person reported that the agent used at least one social control strategy on 5.92 days of the 14-day study period ($SD = 3.53$, median = 6.00, range: $0 - 14$ days). Figure 12 shows the distribution of targets who reported that the agent used social control across the diary days. Six targets (4% of the sample) indicated that the agent never used social control during the study period. On days on which targets reported that the agent used any social control, the average person reported that the agent used an average of 2.10 strategies ($SD = 1.37$, median = 1.75, range = $1 - 24$ strategies per day).

  Autonomy-Supporting Social Control. The average person reported that the agent used an autonomy-supporting social control strategy on 2.85 days of the 14-day study period ($SD = 2.82$, median = 2.00, range: $0 - 14$ days). Figure 13 shows the distribution of targets who reported that the agent used autonomy-support across the diary days. Twenty-nine targets (20% of the sample) indicated that the agent never used an autonomy-supporting strategy during the study period. On the days that targets reported that the agent used autonomy-supporting SC, the autonomy-supporting SC strategy that

was most frequently selected was "Showed acceptance of my eating choices" (53% of the sample indicated that the agent used this strategy at least once during the study period). On days on which targets reported that the agent used autonomy-supporting social control, the average person reported that the agent used an average of 1.72 strategies (SD = 0.86, median = 1.50, range = 1 – 8 strategies per day).

Autonomy-Limiting Social Control. The average person reported that the agent used an autonomy-limiting social control strategy on 1.96 days of the 14-day study period (SD = 1.88, median = 2.00, range: 0 – 10 days). Figure 14 shows the distribution of targets who reported that the agent used autonomy-limiting social control across the diary days. Forty-one targets (28% of the sample) indicated that the agent never used an autonomy-limiting strategy during the study period. On the days that targets reported that the agent used autonomy-limiting SC, the strategy that was most frequently selected as "Noticed or commented on my eating choices" (25% of the sample indicated that the agent used this strategy at least once during the study period). On days on which targets reported that the agent used autonomy-limiting social control, the average person reported that the agent used an average of 1.49 strategies (SD = 0.74, median = 1.00, range = 1 – 9 autonomy-limiting strategies per day).

Neutral Social Control. The average person reported that the agent used a neutral social control strategy on 3.65 days of the 14-day study period (SD = 3.11, median = 3.00, range: 0 – 13 days). Figure 15 shows the distribution of targets who reported that the agent used neutral social control across the diary days. Twenty targets (14% of the sample) indicated that the agent never used a neutral social control strategy during the study period. On the days that targets reported that the agent used neutral SC,

the strategy that was most frequently selected was "Cooked or ate healthy meals with me" (52% of the sample indicated that the agent used this strategy at least once during the study period). On days on which targets reported that the agent used neutral social control, the average person reported that the agent used an average of 1.55 strategies (SD = 0.71, median = 1.33, range = 1 – 9 strategies per day).

Research Question 4: Are Agents Consistent in Their Use of Social Control?

To examine whether agents consistently use autonomy-supporting social control or autonomy-limiting social control, or whether they use both types of social control strategies, I examined the types of social control targets reported across the study periods. Specifically, I created a categorical variable using the autonomy-supporting dichotomous variable and the dichotomous autonomy-limiting variable. There were four groups: (1) Agent only used autonomy-limiting SC across the diary days (n = 13, 9% of the sample), (2) Agent only used autonomy-supporting SC across the diary days, (n = 25, 17% of the sample) (3) Agent used both autonomy-limiting SC and autonomy-supporting SC across the diary days (n = 93, 63% of the sample), and (4) Agent did not use autonomy-limiting SC nor autonomy-supporting SC at all during the study period (n = 16, 11%). For the average person, the agent used only autonomy-limiting SC for 11% of the diary days, only autonomy-supporting SC for 18% of the diary days, both autonomy-limiting SC and autonomy-supporting SC for 4% of the diary days, and neither autonomy-supporting SC nor autonomy-limiting SC for 66% of the diary days.

Research Question 5: Do Social Control Strategies Co-vary with Target Perceptions of Agent Motives?

To assess how different types of social control strategies co-vary with targets' perceptions of agents' motives, I examined the average motives perception on days on which the agent used only autonomy-limiting SC, only autonomy-supporting SC, or both autonomy-limiting and autonomy-supporting SC. On days on which the agent used only autonomy-limiting SC, the average person rated the agent's motives as 0.51 ($SD = 0.94$, median = 0.00). On days on which the agent used only autonomy-supporting SC, the average person rated the agent's motives as 0.50 ($SD = 0.78$, median = 0.33). On days on which the agent used both autonomy-limiting and autonomy-supporting SC, the average person rated the agent's motives as 0.51 ($SD = 0.91$, median = 0.00).

Multilevel Modeling

Prior to conducting multilevel analyses, I tested two-level unconditional models to examine how much of the variance of relational behaviors, healthiness of eating, eating behaviors, autonomy-supporting SC, and autonomy-limiting SC were within- and between-individuals (see Table 21 for ICC and design effect estimates). Intraclass correlations and design effect estimates were examined to determine whether multilevel modeling was appropriate for the outcome variables (Peugh, 2010). Design effect estimates greater than 2.00 indicate a need for multilevel modeling (e.g., Muthen, 1991, 1994).[10]

Additionally, unconditional growth models that included time as a fixed effect were run to examine whether the outcomes were predicted by day. Some research has found that in studies with repeated measurements, some variables show an unpredicted decrease over time (Shrout et al., 2018). Results showed that healthiness of daily eating

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[10] Design effect estimates were above 2.00 for all outcomes except for healthiness of daily eating. For the purposes of conceptually replicating the hypotheses tested in Study 1, multilevel modeling was used for this outcome with that caveat in mind.

increased over time, healthiness of eating behaviors increased over time, and number of autonomy-supporting behaviors decreased over time. Thus, for those outcomes, time will be included as a fixed effect.

Hypothesis 5a: Moderating Effect of Agent Motives on Association Between Autonomy-Supporting SC and Relational Behaviors. Hypothesis 5a tested whether perceptions of agent motives moderated the association between autonomy-supporting SC and relational behaviors. First, the synchronous effects will be presented, and then the lagged effects will be presented.

Synchronous Model. The estimates, standard errors, and 95% confidence intervals for the fixed effects of the synchronous model with and without covariates are displayed in Table 22. The estimate of the fixed effect ($b = 0.40$, $p < .001$) indicates the predicted mean relational behavior on average, taking the predictors into account. This indicates that individuals engaged in more constructive relational behaviors, on average, on a given day (t). There was a significant main effect of motives ($b = 0.03$, $p < .05$), indicating that having greater perceptions that the agent had interdependent motives was associated with more constructive relational behaviors. There was no main effect of autonomy support, indicating that whether or not the agent used autonomy support had no effect on targets' relational behaviors that day, taking the other predictors into account.[11] Additionally, motives did not have a moderating effect on the association between autonomy support and relational behaviors. Adding covariates did not change the results.

Lagged Model. The estimates, standard errors, and 95% CIs for the fixed effects of the lagged model with and without covariates are displayed in Table 23. The lagged

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[11] However, when autonomy support was the only predictor, it had a significant effect on relational behaviors ($b = 0.08$, $p = 0$). These effects were explored further in follow-up exploratory analyses.

models examined whether autonomy-supporting strategies on day t predicted relational behaviors on day $t + 1$, controlling for relational behaviors on day t. In the model without covariates, there is a significant effect of motives, such that greater perceptions that the agent had interdependent motives on day t was associated with more constructive behaviors on day $t + 1$. This effect weakened when covariates were included in the model ($b = 0.02$, $p = .065$). Targets' perceptions of agents' motives on day t did not moderate the association between autonomy-supporting social control on day t and relational behavior on day $t + 1$. Additionally, there was no effect of autonomy support on relational behaviors. Thus, Hypothesis 5a was not supported.

Hypothesis 5b: Moderating Effect of Agent Motives on Association Between Autonomy-Limiting SC and Relational Behaviors. Hypothesis 5b tested whether perceptions of agent motives moderated the association between autonomy-limiting SC and relational behaviors.

Synchronous Model. The estimates, standard errors, and 95% confidence intervals for the synchronous model with and without covariates are displayed in Table 24. Motives significantly predicted relational behavior ($b = .02$, $p < .05$); however, motives did not moderate the effect of autonomy-limiting SC on relational behaviors. Additionally, the main effect of autonomy-limiting SC on relational behaviors was not significant[12].

Lagged Model. The estimates, standard errors, and 95% confidence intervals for the lagged model with and without covariates are displayed in Table 25. The lagged models examined whether autonomy-limiting SC on day t predicted relational behaviors

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[12] Similarly to what was found for Hypothesis 5a, when motives were not included in the model, there was a significant main effect of autonomy-limiting SC on relational behaviors ($b = 0.06$, $p < .01$). This will be examined in exploratory analyses.

on day $t + 1$, controlling for relational behaviors on day $t + 1$. Targets' perceptions of agents' motives on day t did not moderate the association between autonomy-limiting social control on day t and relational behavior on day $t + 1$. Additionally, there were no main effects of autonomy-limiting SC or motives. The results did not change when the covariates were added to the models. Thus, Hypothesis 5b was not supported.

Hypothesis 6a: Moderating Effect of Agent Motives on Association Between Autonomy-Supporting SC and Eating Behavior. Hypothesis 6a tested whether perceptions of agents' motives moderated the association between autonomy-supporting SC and eating behavior. There were two eating behavior outcomes – healthiness of eating and eating behaviors – and thus, two sets of multilevel models were run (synchronous and lagged).

Healthiness of Eating: Synchronous Model. The estimates, standard errors, and 95% confidence intervals for the fixed effects of synchronous model with and without covariates are displayed in Table 26. The estimate of the fixed effect ($b = -0.30$, $p < .05$) indicates the predicted mean healthiness on average, taking the predictors into account. This indicates that, on average, people ate slightly less healthy than usual on a given day. Targets' perceptions of agents' motives did not moderate the association between autonomy-supporting social control and healthiness of eating. However, there was a main effect of motives on healthiness of eating ($b = 0.09$, $p < .05$), such that having greater perceptions that the agent has interdependent motives is associated with engaging in healthier eating that day. Adding covariates did not change the significance of the effects.

Healthiness of Eating: Lagged Model. The estimates, standard errors, and 95% confidence intervals for the lagged model with and without covariates are displayed in

Table 27. The lagged models examined whether autonomy-supporting SC on day t predicted healthiness of eating on day $t + 1$, controlling for healthiness of eating on day t. Targets' perceptions of agents' motives on day t did not moderate the association between autonomy-supporting social control on day t and healthiness of eating on day $t + 1$. Additionally, there were no main effects of autonomy-supporting SC or motives on healthiness of eating.

Eating Behaviors: Synchronous Model. The estimates, standard errors, and 95% confidence intervals for the synchronous model with and without covariates are displayed in Table 28. The estimate of the fixed effect ($b = 0.96$, $p < .05$) indicates the predicted mean eating behaviors score on average, taking the predictors into account. This indicates that, on a given day, individuals engaged in more healthy eating behaviors than unhealthy eating behaviors. There were no effects of autonomy support[13], motives, or the interaction between autonomy support and agent motives on eating behavior.

Eating Behaviors: Lagged Model. The estimates, standard errors, and 95% confidence intervals for the lagged model with and without covariates are displayed in Table 29. The lagged models examined whether autonomy-supporting SC on day t predicted eating behaviors on day $t + 1$, controlling for eating behaviors on day t. Targets' perceptions of agents' motives on day t did not moderate the association between autonomy-supporting social control on day t and eating behaviors on day $t + 1$. Additionally, there were no main effects of autonomy-supporting SC or motives on eating behaviors. Hypothesis 6a was not supported.

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[13] When only autonomy support and day were included in the model, the main effect of autonomy support on eating behaviors was significant ($b = 0.35$, $p < .01$). This was examined in exploratory analyses.

Hypothesis 6b: Moderating Effect of Agent Motives on Association Between Autonomy-Limiting SC and Eating Behavior. Hypothesis 6b tested whether perceptions of agents' motives moderate the association between autonomy-limiting SC and eating behavior. There were two eating behavior outcomes – healthiness of eating and eating behaviors – and thus, two sets of multilevel models were run (synchronous and lagged).

Healthiness of Eating: Synchronous Model. The estimates, standard errors, and 95% confidence intervals for the synchronous model with and without covariates are displayed in Table 30. There was a significant main effect of motives, such that targets who perceive that the agent's motives are more interdependent report healthier than usual eating that day. However, there was not a main effect of autonomy-limiting SC and there was not a moderating effect of motives on the association between autonomy-limiting SC and healthiness of daily eating. The results did not change when covariates are added.

Healthiness of Eating: Lagged Model. The estimates, standard errors, and 95% confidence intervals for the lagged model with and without covariates are displayed in Table 31. There was a marginal effect of autonomy-limiting social control ($b = 0.14$, $p = .078$), such that if the agent used autonomy-limiting SC on day t, the target reported healthier than usual eating on day $t + 1$. The effect of motives was not significant, and there was not a significant interaction between motives and autonomy-limiting SC. The results did not change when covariates were added.

Eating Behavior: Synchronous Model. The estimates, standard errors, and 95% confidence intervals for the synchronous model with and without covariates are displayed in Table 32. There was a marginal effect of motives ($b = 0.12$, $p = .076$) and a marginal

moderation effect of motives on the association between autonomy-limiting SC and eating behavior ($b = -0.32$, $p = .079$). This indicates that greater perceptions of agents' motives as interdependent was associated with healthier eating behaviors. The results did not change when covariates were added.

Eating Behavior: Lagged Model. The estimates, standard errors, and 95% confidence intervals for the lagged model with and without covariates are displayed in Table 33. There was no effect of motives on eating behavior, and the interaction between motives and autonomy-limiting SC was not significant. There was a marginal main effect of autonomy-limiting SC ($b = 0.26$, $p = .068$), such that if the agent used autonomy-limiting social control on day t, targets engaged in more healthy eating behaviors on day $t + 1$, controlling for eating behaviors on day t. Hypothesis 6b was not supported.

Research Question 6: Do Targets' Relational Behaviors Predict Agents'

Subsequent Use of Social Control? To examine whether targets' relational responses predict agents' subsequent use of social control, a lagged multilevel model was run. The lagged models examined whether targets' relational behaviors on day t predicted autonomy-supporting (or autonomy-limiting) SC on day $t + 1$, controlling for autonomy-supporting or autonomy-limiting SC on day t. One model was run for each outcome (i.e., type of social control). The estimates, standard errors, and 95% confidence intervals for the lagged model predicting autonomy-supporting SC with and without covariates are displayed in Table 34. The estimates, standard errors, and 95% confidence intervals for the lagged model predicting autonomy-limiting SC with and without covariates are displayed in Table 35. There were no main effects of targets' relational behaviors on agents' use of autonomy-supporting or autonomy-limiting SC.

Research Question 7: Do Targets' Eating Behaviors Predict Agents'

Subsequent Use of Social Control? To examine whether targets' eating behaviors

predict agents' subsequent use of social control, two lagged multilevel models were run.

The lagged models examined whether targets' eating on day *t* predicted autonomy-

supporting (or autonomy-limiting) SC on day *t + 1*, controlling for autonomy-supporting

or autonomy-limiting SC on day *t*. Both eating behaviors on day *t* and healthiness of daily

eating on day *t* were included in each model as predictors. One model was run for each

outcome (i.e., type of social control). The estimates, standard errors, and 95% confidence

intervals for the lagged model predicting autonomy-supporting SC with and without

covariates are displayed in Table 36. There was a main effect of eating behaviors on day *t*

on autonomy-supporting SC on day *t + 1*, such that individuals who reported more

unhealthy eating behaviors on day *t* were more likely to receive autonomy-supporting

social control on day *t + 1*. There was no effect of healthiness of daily eating on

autonomy-supporting SC. The estimates, standard errors, and 95% confidence intervals

for the lagged model predicting autonomy-limiting SC with and without covariates are

displayed in Table 37. There were no effects of healthiness of eating or eating behaviors

on day *t* on autonomy-limiting SC on day *t + 1*.

Research Question 8: Does Relationship Quality Moderate the Effect of

Targets' Relational Behaviors on the Type of Social Control Used by the Agent? To

examine whether relationship quality moderated the association between targets'

relational responses and the type of social control strategies the agent subsequently uses,

two lagged models were run. The lagged models examined whether targets' relational

behaviors on day *t* predicted autonomy-supporting (or autonomy-limiting) SC on day *t +*

1, controlling for autonomy-supporting or autonomy-limiting SC on day *t*. Relationship

quality (average PRQC score) was included as a fixed effect interaction term with

relational behavior. One model was run for each outcome (i.e., type of social control).

The estimates, standard errors, and 95% confidence intervals for the lagged model

predicting autonomy-supporting SC with and without covariates are displayed in Table

38. There were no main or moderating effects of relationship quality on autonomy-

supporting social control. The estimates, standard errors, and 95% confidence intervals

for the lagged model predicting autonomy-limiting SC with and without covariates are

displayed in Table 39. There were no main or moderating effects of relationship quality

on autonomy-limiting social control.

Exploratory Analyses

Given that the synchronous models predicting relational behaviors, eating

behaviors, and healthiness of eating showed that there were main effects of autonomy-

supporting SC and/or autonomy-limiting SC when perceptions of agents' motives were

not included in the model, exploratory analyses were conducted. Additionally, to

conceptually replicate some of the exploratory analyses conducted in Study 1, the models

included time (day) as both a main effect and an interaction effect with each kind of

social control strategy.

Relational Behaviors

The estimates, standard error, and 95% confidence intervals for the synchronous

model predicting relational behaviors from autonomy-supporting SC, autonomy-limiting

SC, time, and interactions between the three predictors are shown in Table 40.

Autonomy-supporting SC had a significant and positive main effect on relational

behaviors ($b = 0.09$, $p < .05$). However, there were no effects of autonomy-limiting SC, and the interactions between day and autonomy-supporting SC and autonomy-limiting SC were not significant. Given that time (diary day) was included in the model and was coded such that zero reflects Day 1 of the study period, the results show that targets report engaging in more constructive relational behaviors than destructive relational behaviors the first time the agent engages in an autonomy-supporting strategy, but that targets' relational behaviors are not affected by the agent's use (or non-use) of autonomy-supporting SC over time. The results do not change when covariates are included in the model.

Healthiness of Eating

The estimates, standard error, and 95% confidence intervals for the synchronous model predicting healthiness of daily eating from autonomy-supporting SC, autonomy-limiting SC, time, and interactions between the three predictors are shown in Table 41. There was a significant main effect of autonomy-supporting SC ($b = 0.28$, $p < .05$), such that targets report engaging in healthier than usual eating the first time the agent uses autonomy-supporting SC. However, the interaction between time and autonomy-supporting SC is not significant; thus, whether or not the agent enacts autonomy-supporting SC has no bearing on the target's healthiness of daily eating over time.. Additionally, there was a significant interaction between autonomy-supporting SC and autonomy-limiting SC ($b = 0.81$, $p < .05$). Figure 16 shows the plotted interaction. These findings suggest that on days when agents do not use autonomy-supporting SC or autonomy-limiting SC, the healthiness of the target's eating (self-reported, "How would you describe the healthiness of your eating in the last 24 hours, compared to most days?")

is unaffected, but when targets receive both autonomy-supporting SC and autonomy-limiting SC, they report healthier than usual eating.

Eating Behaviors

The estimates, standard error, and 95% confidence intervals for the synchronous model predicting eating behaviors from autonomy-supporting SC, autonomy-limiting SC, time, and interactions between the three predictors are shown in Table 42. There is a main effect of autonomy-supporting SC ($b = 0.44$, $p < .05$), such that targets who report receiving autonomy-support initially also report engaging in more healthy eating behaviors than unhealthy eating behaviors, compared to targets who do not report receiving autonomy-support. However, given that the interaction between autonomy-supporting SC and time is not significant, this indicates that this pattern does not hold over time. There are no main or interaction effects of autonomy-limiting SC.

Study 2 Discussion

Study 2 was designed to examine targets' experiences with social control in ongoing relationships. Most past research examining social control in naturalistic settings has been limited by only examining how reports of the provision or receipt of social control affect targets' health behaviors or intrapersonal factors, such as targets' mood or emotional reaction when agents enact social control (e.g., Lewis & Butterfield, 2005; Okun et al., 2007). Study 2 not only examines how social control is linked to targets' health behavior, but also how it affects targets' relational behaviors (i.e., interpersonal factors). Although most extant research has focused on how social control impacts targets' health behaviors, it is critical to focus equally on how social control impacts targets' relational behaviors toward the agent, because these behaviors may shape future

social control attempts. Additionally, targets' relational responses to social control should have important implications for the relationship between the agent and the target.

Research examining social control has also focused on a limited set of social control strategies and/or has examined social control retrospectively (e.g., asking targets how often the agent has enacted different social control strategies over the past six months; Burke & Segrin, 2017; Tucker & Anders, 2001). A more nuanced examination of social control strategies is needed in order to better understand the precursors and consequences of social control in close relationships. Study 2 contributes to our understanding of social control by offering greater depth and breadth of information regarding the social control strategies used by agents. Study 2 offers preliminary evidence that can be used to inform theory and measures of social control.

Additionally, Study 2 offers a conceptual replication of Study 1. Whereas Study 1 examined targets' health behavior and relational behavior responses to social control in a hypothetical scenario, Study 2 examines these reactions in a naturalistic setting. Study 1 examined targets' behavior when agents' behavior was held constant; Study 2 examines how targets respond to social control in a dynamic context in which the agent's behaviors – their use of social control, their own eating, their relational behaviors toward the target – can all vary from day to day. The discussion will first focus on the descriptive characteristics of social control in Study 2 (addressing Research Questions 3, 4, and 5). Then, the confirmatory analyses assessing the targets' responses to social control will be discussed (Hypothesis 5 and 6). Next, the results of analyses examining how targets' behaviors affect agents' use of subsequent social control will be discussed (Research

Questions 6, 7, and 8). Finally, exploratory analyses that conceptually replicate aspects of Study 1 will be discussed.

What are the Features of Social Control in Ongoing Relationships?

Study 2 examined the frequency of social control strategies (Research Question 3), the variability of the use of different types of social control strategies (Research Question 4), and the covariance of different types of social control strategies with perceptions of agent motives (Research Question 5) on a daily basis over the course of two weeks.

Frequency

Research that has reported the frequency of social control strategies has typically focused on the distinction between positive and negative strategies (e.g., Burke & Segrin, 2017; Tucker & Anders, 2001). Although the current research examined a different conceptualization of social control, generally, positive strategies map onto the conceptualization of autonomy-supporting social control and negative strategies map onto autonomy-limiting social control. Research has varied in the amount of strategies presented to targets, the time frame (e.g., social control in the past six months), the timing of the measurement (e.g., retrospective, prospective), and the health behavior focus of the strategies (e.g., general health behaviors, dieting behaviors). These varying factors have likely affected the amount of social control that targets report. For instance, Tucker and Anders (2001) asked targets how often during the past six months the agent did something to attempt to persuade the target to change their health behavior and found that targets reported that the agent used 1.87 strategies per week. In contrast, Novak and Webster (2011) used a prospective study design and presented targets with strategies

tailored to be specific to diet, exercise, and weight and found that targets reported that the agent used 1.04 strategies per day. Study 2 presented targets with a broader array of social control strategies tailored to be specific to eating and found that targets reported that the agent used an average of 2.10 strategies per day. One explanation for these differing findings is that reports of social control are contingent upon the frequency and timing with which social control is assessed (e.g., daily reports versus retrospective reports), as well as the number of strategies presented to individuals. There may not be an optimal way to assess social control – the frequency of assessments and the number of strategies presented are likely to be contingent upon the research question – but Study 2 suggests that researchers should be aware that the way social control is assessed can bias the amounts of social control reported.

Replicating prior research (e.g., Tucker & Anders, 2001; Butterfield & Lewis, 2002; Burke & Segrin, 2017), Study 2 also showed that, despite the number of autonomy-supporting strategies and autonomy-limiting strategies being unbalanced in the daily social control measure, targets reported that the agent used more autonomy-supporting strategies than autonomy-limiting strategies. This suggests that the proportion of autonomy-supporting strategies and autonomy-limiting strategies used may be even more skewed than what is suggested by the Study 2 data because targets had more autonomy-limiting strategies they could select but still chose more autonomy-supporting strategies. Additionally, one challenge that was realized during the classification of social control strategies in Study 2 is that a dichotomous view of social control (e.g., autonomy-supporting or autonomy-limiting) may impede our understanding of how social control affects targets. For instance, many strategies were rated by coders as neutral, that is, not

clearly reflecting autonomy-supporting SC nor autonomy-limiting SC. One next step for future research might be to take a weighted or dosage approach when examining the effects of social control on targets' responses. Strategies within a category of social control (e.g., autonomy-supporting) can vary in the extent to which they are autonomy-supporting, and incorporating the degree of support/limitation may provide a more nuanced understanding of how social control affects downstream target behaviors.

Variability

No research to date has examined whether agents vary in their use of autonomy-supporting and autonomy-limiting strategies over time. Study 2 allowed me to examine the extent to which agents varied in whether they provided only one type of social control over time. For most targets, the agent used both autonomy-supporting SC and autonomy-limiting SC during Study 2; however, they rarely used both in one day (targets reported that the agent used both types of SC on only 4% of diary days). Replicating past research (e.g., Craddock et al., 2015), autonomy-supporting SC and autonomy-limiting SC were also positively correlated. Thus, it seems that if an agent uses social control, they tend to use both types of social control over time, but not together. A future direction for research is to examine whether agents vary in the specific strategies they use within a social control strategy type (e.g., using different autonomy-supporting behaviors) and if variability in their social control use has implications for targets' relational and health behaviors.

Covariance with Motives

In Study 1, targets were randomly assigned to different combinations of motive types (independent versus interdependent) and strategy types (autonomy-supporting

versus autonomy-limiting). It revealed that motive type, in general, did not moderate the effect of strategy type on targets' relational and eating behavior. One potential reason for this finding is that these combinations of motive type and strategy type do not exist in most naturalistic settings. Study 2, on the other hand, found that targets' perceptions of agents' motives do not differ as a function of whether the agent used only autonomy-limiting SC, only autonomy-supporting SC, or both kinds of SC. Generally speaking, targets perceived that agents were motivated by what was in targets' best interests rather than just the agent's own best interests. Thus, one explanation for the findings in Study 1 is that targets perceive that agents are motivated by both of their interests, and that the motives manipulations were not effective in changing motive perceptions because the motive perceptions are fairly stable and difficult to change.

One limitation of Study 2 is that perceptions of agent motives were assessed by asking targets to rate the extent to which the agents' behaviors related to the targets' eating behavior was motivated by the agents' own interests or the target's best interests; thus, this measure may not have been precise enough to capture targets' perceptions of the agent's *specific* social control behaviors. A next step for future research is to examine motive perceptions more precisely, such as by asking targets why they think the agent engaged in specific social control behaviors (e.g., autonomy-supporting versus autonomy-limiting) rather than behaviors related to their eating, in general.

Do Motive Perceptions Moderate the Effect of Strategy Type on Relational Behavior, Healthiness of Eating, and Eating Behavior?

Study 2 conceptually replicated aspects of Study 1 by examining whether perceptions of the agent's motives moderate the effect of autonomy-supporting SC

(Hypothesis 5a and Hypothesis 6a) and autonomy-limiting SC (Hypothesis 5b and Hypothesis 6b) on relational behaviors, healthiness of daily eating, and eating behavior. Synchronous (same day) and lagged (next day) models were tested. Whereas Study 1 did not find main effects of motive type, Study 2 found several main effects of motives in the synchronous models, such that perceptions that the agent's behavior was driven by interdependent motives was associated with more constructive relational behaviors than destructive relational behaviors and with perceptions that one ate healthier than usual that day. However, motives were not related to eating behavior. That is, whether or not a target engaged in more healthy behaviors than unhealthy eating behaviors was not affected by their perceptions of the agent's motives. Except for one model (Hypothesis 5a), there were no lagged effects of motive type on target behaviors. Additionally, there were no moderating effects of motive on the association between social control and target behaviors, nor were there significant main effects of social control (when motive was included in the model). The main effects of agent motives on relational behaviors and healthiness of eating were robust to the inclusion of covariates that are theoretically and/or empirically linked to the predictors and outcomes, including relationship quality, social control norms, and interest in improving one's eating behavior.

Viewed together, these results suggest that targets' perceptions of agents' motives may be a stronger determinant of targets' relational behavior than whether or not the agent uses autonomy-supporting or autonomy-limiting social control. In other words, if targets perceive that the agent has interdependent motives, they are likely to engage in constructive relational behaviors that day, regardless of the agent's use or non-use of social control. The finding that perceptions of agent motives as more interdependent is

associated with constructive relational behaviors is in line with past research on partner

meta-perceptions (i.e., beliefs about one's partner's beliefs, such as motives) and

relationship behaviors. For instance, Visserman and colleagues (2018) found that when

individuals perceived their partner made a daily sacrifice to make the individual happy

(i.e., an interdependent motive), they experienced higher gratitude toward their partner.

With regard to eating, there was an effect of perceptions of agents motives on

healthiness of daily eating, but not on eating behaviors. This discrepancy may be because

the healthiness of daily eating variable reflects targets' perceptions of their eating,

whereas the eating behaviors variable is less subjective. Emotion may be a key

mechanism linking the associations between perceptions of agent motives, relational

behaviors, and healthiness of eating. Indeed, some research shows that people project

their own emotional states, characteristics, and motives onto their romantic partners

(Fletcher & Kerr, 2010; Gagné & Lydon, 2004; LaBuda, Gere, & Impett, 2019). The

positive perceptions that drive individuals' ratings of the healthiness of their eating on a

given day (e.g., "Today I ate healthier than usual") may also be linked to their

perceptions of their partner's motives that day (e.g., "My partner was thinking more

about me today than about themselves"). Additionally, positive perceptions or emotional

states might also explain the finding that interdependent motives are tied to more

constructive relational behaviors. People tend to show positive bias about their partner

and relationship in that their subjective perceptions of their partner are more positive than

warranted by objective reality (e.g., Murray, Holmes, & Griffin, 1996). Thus, there may

be a halo effect at play, such that positive emotions beget positive perceptions and

positive behaviors. These are speculations; additional research that assesses mechanisms

such as emotion is needed to determine why the effects of autonomy-supporting SC and autonomy-limiting SC are weakened when perceptions of agent motives are taken into account.

Do Targets' Relational and Eating Behaviors Affect Agents' Next-Day Use of Social Control?

The provision of both autonomy-supporting and autonomy-limiting social control should be determined, in part, by targets' responses to previous social control attempts. Research to date has not examined whether targets' relational behaviors and health behaviors are associated with agents' subsequent use of social control using prospective study designs. Some research has examined predictors of social control that are related to the targeted health behavior, such as lapses in the maintenance of previous health behavior changes (Lewis et al., 2004), the severity of the consequences of the health behavior (more social control being used for more severe consequences), the frequency of engagement of the health behavior (more social control being used for more frequent behavior), and whether the behavior is health-compromising or health-promoting (more social control being used for health-compromising behaviors, such as smoking) (Lewis & Butterfield, 2005).

Additionally, some research suggests that agents weigh both potential relational costs and health benefits when determining whether to use social control. For instance, in one study that examined focus groups with spouses discussing social control, the relational consequences of social control were implicitly expressed (Lewis et al., 2004). One spouse, for example, said, "Anger has produced results in our relationship, but it's also very difficult, it costs as much as it gains, in some ways, at the expense of getting

one to change one's behavior" (Lewis et al., 2004, p. 678). In another study, female

partners reported a variety of motives for supporting their male partners' decision to join

a weight loss intervention, which included concerns about health risks related to weight

and desires to support their partner's personal growth and independence (Tripathee,

2019). Additionally, one retrospective study found that the extent to which agents

perceived social control constraints (which included relational motives, such as not

wanting to risk possible damage to the relationship by enacting social control) moderated

the association between health motives and social control use (Burke & Segrin, 2017).

Specifically, the association between wanting the target to improve their health and

agents' use of positive and negative social control was stronger if agents perceived fewer

constraints to using social control. In sum, although research has not examined whether

targets' health behavior and relational behavior inform agents' use of social control in

prospective studies, there is some evidence that both factors may be determinants of

social control.

Targets' Relational Behaviors Predicting Agents' Subsequent Social Control (Research Question 6)

Study 2 showed that targets' relational behaviors on one day did not predict

agents' autonomy-supporting or autonomy-limiting social control on the next day. One

explanation for this finding is that the relational behaviors measure was not precise

enough to assess nuanced reactions to social control. The relational behaviors measure

assessed behaviors that the target engaged in toward the agent throughout the day, rather

than in response to a specific social control strategy. Thus, this measure may not be

sufficiently fine-grained to detect relational responses to social control versus responses

to other behaviors one's partner engaged in on a given day. Additionally, given that social control strategies exist on a continuum of autonomy limitation or support, it may be necessary to weight the social control strategy when examining whether relational behaviors affect social control strategies. For instance, imagine that an agent uses an autonomy-limiting strategy that is extremely limiting on one day and the target responds with destructive relational behaviors. The next day, the agent may still enact autonomy-limiting SC, but perhaps the agent now uses a strategy that is only somewhat limiting. This level of nuance cannot be captured by a dichotomous measure of social control. Thus, one step for follow-up analyses with the current research is to measure and model both the occurrence of different social control strategies and the degree to which they are limiting or supporting.

Targets' Eating Predicting Agents' Subsequent Social Control (Research Question 7)

Study 2 also revealed that there was a main effect of eating behaviors on one day on autonomy-supporting SC the next day, such that individuals who reported more unhealthy behaviors on a given day were more likely to receive autonomy-supporting social control the next day. However, there was no similar effect of eating behaviors on autonomy-limiting social control.

If one accounts for only health-related motives as an antecedent for social control provision, it may seem counter-intuitive that more unhealthy eating behaviors would elicit autonomy-supporting social control. Put another way, if the sole function of social control is to influence a target's health behavior, one might expect that more engagement in unhealthy eating behaviors would elicit autonomy-limiting social control. However, when relational considerations are taken into account, agents may be more likely to use

autonomy-supporting social control because they want to encourage the target to eat healthier without negatively impacting the relationship. Study 2 is limited in that it examined only one person's perspective in the social control situation; the agent's actual motives for using social control are unknown. Accordingly, one next step is to examine social control longitudinally and dyadically, which would provide richer information on the cues that agents use to determine their use of social control.

Notably, there were no effects of reported healthiness of eating on autonomy-supporting or autonomy-limiting social control. As noted earlier, healthiness of eating and eating behaviors are positively associated, but reflect distinct aspects of eating, such that healthiness of daily eating is more subjective than actual eating behaviors. Thus, it could be that agents' use of subsequent social control was informed more by the actual eating behaviors in which the target engaged than the targets' overall perception of their own daily eating.

An interesting question for future research is whether discrepancies between targets' perceptions of their own eating behavior and agents' perceptions of the targets' eating behavior cause more conflict in social control situations. In some ways, targets may have a more accurate perception of their eating than agents because they have more information about their own eating habits and behaviors. After all, across all of the studies (Pilot Studies 1 and 2, Study 1, Study 2), people reported eating approximately nine meals, on average, with their partner each week. Agents may also have awareness of the target's eating based on what they pack for lunch, the foods available at home, etc., but overall their information about the target's eating should be more limited than the target's information about their own eating. If agents enact social control based on their

more limited information about the target's eating, this could generate conflict because there may be more disagreements about the genuine need for the target to change their eating behavior. Future research can address this question by including dyadic assessments of eating (e.g., what an individual ate that day and what they think their partner ate that day) and examining whether the discrepancy between each person's reports of the target's eating predicts the agent's use of social control and the target's relational responses to social control.

Effects of Relationship Quality on the Association Between Targets' Relational Behaviors and Agents' Subsequent Social Control (Research Question 8)

Research on social control has typically assessed relationship quality as a moderator of the effect of social control on targets' health behavior responses, rather than examining whether it affects the provision of social control. One prediction is that agents who have better relationships feel more comfortable enacting social control strategies, in general, because they feel more confident that their relationship can withstand possible damage incurred by using social control. In Study 2, however, relationship quality did not moderate the effect of targets' relational behaviors on agents' use of social control.

This finding could be partially due to the lack of main effects of targets' relational behaviors on agents' use of social control; in other words, there was no effect to moderate. Although research clearly shows that there is concordance in relationship quality perceptions between partners (e.g., Bratcher et al., 2018; Hasler & Troxel, 2010; Overall, Fletcher, & Simpson, 2010), the relationship quality assessment is limited to a single person's perspective, and the effect may be easier to detect if assessed dyadically. When testing the hypotheses, relationship quality was one of the only significant

covariates predicting target outcomes (relational behavior, healthiness of eating, eating behavior), both in synchronous and lagged models. It may be that individuals' own assessments of the quality of their relationship are more important determinants of their own behavior than of their partner's behavior. Indeed, people who are more satisfied with their relationship (satisfaction being one aspect of relationship quality) behave more positively and less negatively during support interactions (e.g., Lawrence et al., 2008). These limitations of Study 2 once again highlight the need for a dyadic, longitudinal study of the health and relational antecedents and consequences of social control in romantic relationships.

Exploratory Results: Does Autonomy-Supporting and Autonomy-Limiting Social Control Affect Relational and Eating Behaviors Initially and Over Time?

Exploratory Study 2 follow-up analyses were conducted to conceptually replicate aspects of the Study 1 exploratory analyses. Specifically, the effects of autonomy-supporting SC and autonomy-limiting SC were modeled as predictors of target behaviors, both initially (on Day 1) and over time (reflected in interaction effects between day of the study and autonomy-supporting SC, and between day of the study and autonomy-limiting SC). The findings are discussed below.

Relational Behaviors

The results showed that autonomy-supporting SC was associated with more constructive relational behaviors the first time agents used autonomy-supporting SC, but not over time, replicating the findings of Study 1. This finding is in line with predictions from SDT that autonomy-supporting interpersonal environments should facilitate more positive relational behaviors and interactions because one's needs for autonomy are being

met (Ng et al., 2012). Additionally, this builds on research showing that people respond to autonomy-supporting strategies with more positive emotions (e.g., Tucker & Anders, 2001) and suggests that the positive emotions elicited by autonomy support also manifest in constructive relational behaviors.

Healthiness of Eating

Study 2 found that autonomy-supporting SC was associated with reports of healthier than usual eating the first time agents used autonomy-supporting SC, but not over time. There were no effects of autonomy-limiting SC on healthiness of eating, either initially or over time. In contrast, Study 1 found no main effects of strategy type, but there were interaction effects between strategy type and stage of the Social Control Scenario (SCS) on healthiness of eating, such that targets who viewed autonomy-supporting strategies engaged in healthier eating over time compared to targets who viewed autonomy-limiting strategies. Taken together, the results of the two studies suggest that autonomy-supporting SC is associated with perceptions of healthier eating, but the discrepancies in the Study 1 and Study 2 results make it unclear whether: (a) autonomy-supporting SC reliably predicts perceptions of healthier eating over time, and (b) autonomy-limiting SC is reliably associated with perceptions of healthier eating. These discrepancies highlight the importance of replicating experimental results in naturalistic settings and examining the differences between intentions and actual behavior.

Additionally, Study 2 revealed a significant interaction between autonomy-supporting SC and autonomy-limiting SC, such that targets report the healthiest eating on days when they also report that agents engaged in both autonomy-supporting SC and

autonomy-limiting SC. Study 1 was not equipped to examine an interaction between autonomy-supporting and autonomy-limiting SC (because targets only viewed one type of social control strategy).

This Study 2 finding is consistent with results from a recent study on social support, social control, and smoking cessation, which showed that receiving high social support (e.g., "My partner comforted me when I was feeling bad because I could not smoke") and high social control (e.g., "How often does your partner try to influence you?") were associated with better smoking outcomes (e.g., fewer cigarettes smoked) at follow-up, compared with other combinations of social support receipt and social control receipt (Ochsner et al., 2015). The authors theorized that agents' provision of both social support and social control indicates that the agent truly cares about the target, and that this perception motivates targets to change. However, Study 2 also showed that average perceptions of agent motives did not differ on days that agents enacted only one type of social control versus both types of social control. Additionally, if using both types of social control conveyed to the target that the agent cared more about them, one might expect to see an interaction between autonomy-supporting SC and autonomy-limiting SC on target relational behaviors, which was not found. Further, there was no interaction for eating behaviors, which suggests that when autonomy-supporting SC and autonomy-limiting SC are enacted together, this affects perceptions of one's eating, but not one's actual eating behavior.

Future research should explore different mechanisms that may explain the association between using both types of social control and healthiness of eating. For instance, using both types of support may convey an agent's belief about the target that is

not specifically tied to the relationship, such as agent beliefs about the target having low self-efficacy to improve their eating. If a target attributes the agent's use of both types of social control to agent perceptions that the target has low self-efficacy (e.g., "My partner thinks that I'm not capable of changing on my own"), this attribution may not necessarily have implications for the target's relational behaviors toward the agent, but could have implications for the target's perceptions of their own eating.

Given past research, it is not surprising that autonomy-limiting social control did not have effects on either eating outcome. In a meta-analysis of the effects of social control on health behavior, individual studies showed mixed effects of negative social control on health behavior, with the overall effect of negative social control on health behavior being negative but small ($d = -0.08$) (Craddock et al., 2015). Thus, the effects of autonomy-limiting social control may be weak and/or unreliable when examined in naturalistic settings. At best, it seems that autonomy-limiting social control has no effects on eating (or relational behaviors).

General Discussion

The study of social exchanges processes such as social control offer a promising avenue toward improving our understanding of how close relationship partners affect each other's health behavior and health outcomes. However, most research on social control has focused solely on how it affects health behavior, rather than examining how social control affects both health behavior *and* relational behavior. It is vital to understand the health and relational antecedents and consequences of social control in order to design intervention strategies that utilize social control as a means of improving health behavior. Additionally, most research has either examined social control

retrospectively, has used broad measures of social control, or has presented a small number of social control strategies to targets (but see Novak & Webster, 2011, for an example of 25 social control strategies assessed prospectively). Further, most research has neglected targets' perceptions of social control and attributions for agents' behavior, which are critical to understanding how targets respond to social control (but see Berzins et al., 2020).

This research addresses those gaps in the literature with two studies aimed at understanding the effects of social control, over time, from the perspective of the target of social control. Informed by self-determination theory (Deci & Ryan, 2000; Ryan & Deci, 2000), social control theory (Butterfield & Lewis 2002; Lewis, Butterfield, Darbes, & Johnston-Brooks, 2004; Lewis & Rook, 1999; Tucker & Mueller, 2000), and interdependence theory (Kelley & Thibaut, 1978; Thibaut & Kelley, 1959), I predicted that the effects of autonomy-supporting strategies and autonomy-limiting strategies would depend on individuals' attributions for their partners' motives for using social control. Specifically, autonomy-supporting strategies combined with interdependent motives would be associated with constructive relational responses, both initially and over time, and with healthier eating over time, compared to autonomy-supporting strategies combined with independent motives. I also predicted that autonomy-limiting strategies combined with interdependent motives would be associated with neutral or constructive relational responses initially, but more destructive relational behaviors over time, and with healthier eating initially, but less healthy eating over time.

In Study 1 and Study 2, the moderation predictions were not supported; motive type did not interact with social control strategies to affect relational or eating behaviors.

Given that the lack of moderation was consistent across both studies, this suggests that attributions regarding agents' motives for enacting social control do not buffer or exacerbate the effects of social control strategies when they are used. One potential explanation for these findings is that targets do not consider agents' reasons for using social control and agents' actual social control behavior when responding to social control. An alternative explanation is that the way in which motives were manipulated or assessed in these studies was problematic. The Pilot Study 2 ratings of the motive manipulation used in Study 1 suggest that the independent motive may not have been sufficiently independent; that is, it did not heighten perceptions that the agent was motivated by their own interests to the same extent that the interdependent motive heightened perceptions that the agent was motivated by the target's best interests. In Study 2, motives were assessed by asking targets about the agent's motives for enacting social control, but the specific motives associated with each type of social control were not assessed. Thus, the Study 2 motives measure may have been too general to capture distinctions between agent motives for different social control strategies.

Moreover, exploratory analyses in Study 1 found that independent motives were associated with more constructive relational responses over time. This counters predictions that interdependent motives would be associated with more constructive relational behaviors, whereas independent motives would be associated with more destructive relational behaviors. One possibility is that if an agent has independent motives, they may have more power in the relationship. Power may be a key variable in social control situations because it can inform the social control strategies used by agents and the range of responses elicited in the target (Simpson, Farrell, Oriña, & Rothman,

2015). Interdependence and power are linked, such that the relative dependence of each partner is a basis of power. In Study 1, the independent motive may have cued an imbalance of power, which resulted in individuals responding more constructively to appease their more powerful partner. Given that these findings were exploratory, replication is needed to determine whether this effect is robust.

In Study 2, there were also main effects of motive on relational behavior and healthiness of eating, such that greater perceptions that the agent had interdependent motives was associated with more constructive relational behavior and perceptions that one ate healthier than usual. In Study 2, however, perceptions of agent motives did not moderate the effect of either type of social control strategy. Additionally, motives were a stronger predictor of relational behaviors and eating outcomes than social control use, given that the main effects of strategy type were substantially weakened (to the point of non-significance) when motives were included in the model. Furthermore, the findings from Study 2 suggest that attributions regarding agents' social control are important predictors of reactions to social control, perhaps more important than the agent's actual use of social control. The discrepant findings between Study 1 and Study 2 may be due to challenges associated with manipulating agent motives and low generalizability of the combinations of strategy types and motive types in Study 1 to social control situations outside the lab.

Exploratory Findings

A series of exploratory analyses were conducted to examine the effects of social control strategies on relational behavior and eating outcomes in Study 1 and Study 2. Study 1 found that targets who viewed the autonomy-supporting Social Control Scenario

(SCS) engaged in more constructive relational behaviors at Stage 1 than targets who viewed the autonomy-limiting Social Control Scenario. Study 2 conceptually replicated aspects of this finding, such that autonomy-supporting strategies were associated with engaging in more constructive relational behavior the same day the strategies were enacted, but not over time, compared with not receiving any autonomy-supporting social control on a given day. The referent group in Study 1 and Study 2 was different in that the comparison group in Study 1 included people who viewed autonomy-limiting strategies, whereas the comparison group in Study 2 was days on which the specific social control type was not used. However, given that there was no effect of autonomy-limiting strategies on relational behaviors in Study 2, these findings suggest that autonomy-supporting social control is associated with constructive relational behaviors initially, but not over time. Autonomy-limiting social control, at its best, has no effects on relational behavior, and, at its worst, has neutral to destructive effects on relational behavior.

Study 1 also showed that targets who viewed the autonomy-supporting Social Control Scenario (SCS) indicated that they would choose healthier than usual meals at their next meal over time relative to targets who viewed the autonomy-limiting SCS. Study 2 found that autonomy-supporting social control was associated with perceptions of healthier than usual eating initially, but not over time. Additionally, Study 2 included a second measure of eating, which assessed the proportion of healthy eating behaviors to unhealthy eating behaviors. It revealed that people whose partners used both autonomy-supporting and autonomy-limiting strategies reported the healthiest eating behaviors on a

given day. Again, there were no effects of autonomy-limiting behaviors in Study 2 on eating outcomes.

The discrepancy of findings between Study 1 and Study 2 regarding the timing of these effects could be due to the faster rate of receiving social control in Study 1. In Study 1, participants were asked to imagine that their partner used the strategies every few days, but it may be difficult to simultaneously imagine this timescale/rate of use and forecast one's eating responses to the strategies. Overall, these findings suggest that autonomy-supporting social control is associated with healthier eating. These findings are consistent with the broader SDT literature showing the benefits of autonomy support for health behavior (Gettens, et al., 2018; Gorin et al., 2014; 2019; Martire et al., 2013; Ng et al., 2014; Powers et al., 2008).

Implications for Social Control Theory and Methods

This research offers several contributions to theoretical perspectives on social control and the methodologies used to study it. First, this research shows that iterative paradigms are a valid methodology for examining social control, with the caveat that findings from hypothetical studies of social control should be replicated in naturalistic settings. Generally, there has been little experimental research examining social control. In the few studies that have used experimental designs, agents were asked to indicate their likelihood of using different social control strategies to change the target's behavior (Lewis & Butterfield, 2005, Study 1), how they would respond if the agent used one type of social control at one point in time (Lewis & Butterfield, 2005, Study 2; Sieverding, Specht, & Agines, 2019), or how they would respond if the agent used different social control strategies, with no mention of timing (Sullivan et al., 2017). Given that social

control situations at one point in time are embedded in a dynamic relational and health behavior context and against a backdrop of previous social control attempts, it is important to examine social control over time and to account for those contextual factors. Dyadic research and longitudinal research is time- and resource-intensive to conduct; before embarking on such research, hypotheses can and should be tested using iterative paradigms such as the one used in Study 1. That being said, crafting scenarios that are realistic and meaningful for people will be an ongoing challenge.

A second contribution of this research is that it highlights the need to carefully consider how social control strategies should be measured. I attempted to bridge constructs from SDT and SCT to conceptualize social control strategies as having both relationship functions and health behavior change functions. However, the set of social control strategies used was not derived from factor analyses, and it is unclear whether this conceptualization is the optimal way to assess social control. Social control strategies are often categorized (e.g., as positive and negative strategies) instead of being conceptualized as existing on a continuum. Assessing social control strategies as either falling in one category or another may lead researchers to miss the nuance between slightly different social control strategies. For instance, considering the *degree* to which a strategy is autonomy-supporting or autonomy-limiting should be more informative than using a dichotomous measure. Overall, researchers should think carefully about whether the use of strategies (e.g., "Did your partner use autonomy-supporting strategies today?") or the strength of strategies (e.g., "How autonomy-supporting were the strategies used by your partner today?") is more important for their specific research questions.

One goal of Study 2 was to collect descriptive information on social control attempts in order to provide more detail about the actual frequency and variability of different strategies than has been done in past research. One key contribution of Study 2 is the finding that, although people indicate that their partner engaged in behaviors that have been included on social control measures in prior research, they indicated that half of these behaviors, on average, involved social control. This finding highlights the importance of making the regulatory intent of different behaviors clear to targets when assessing social control; otherwise, it may seem as though the agent enacts more social control than the target actually perceives. Additionally, this finding can inform new research questions about social control. For instance, what is the effect of a partner behavior that is visible to the participant, but that the participant does not consider a social control strategy? Research has recognized that invisible support (supportive behaviors that are not perceived as supportive by targets) can have benefits for individuals' health behavior and their relationships (e.g., Belcher et al., 2011; Girme, Maniaci, et al., 2018; Lüscher et al., 2015). Does invisible control – social control behaviors that are not coded as regulatory by the target – have similar benefits for individuals' health and relationship outcomes? This is an important question for future research that was illuminated by the methodology used in Study 2.

A second contribution from Study 2 is the finding that more social control was reported than has been reported in past research. This is likely due to how social control was measured in Study 2, which allowed for the presentation of more social control strategies than prior studies. Most measures of social control have been informed by focus groups with married individuals (Lewis, Butterfield, Darbes, & Johnston-Brooks,

1999; Tucker & Anders, 2001) or have been derived from social influence theory and research, which tends to focus on social influence between acquaintances or strangers rather than close others (e.g., Butterfield & Lewis, 2002). The best way to study social control remains unclear, but researchers should think carefully about how the methods and measures they use to study it may bias or limit their results.

Implications for Intervention

This research represents the first attempt to examine relational and health behavior responses to social control, both in an experimental context and in a naturalistic setting. More research needs to be done in order to identify and understand the key levers that accentuate the benefits of social control and mitigate its detriments. Given that social control is inherently a dyadic process, researchers could focus on changing aspects of the provision of social control or its receipt. For instance, some research on social support suggests that the targets' perceptions of support can be changed to optimize its benefits (Zee, Cavallo, Flores, Bolger, & Higgins, 2018). However, this brings up the question of whether target perceptions *should* be changed. If an agent uses autonomy-limiting social control and the target responds negatively, would it be ethical to try to change how the target responds to this type of social control? The ethics of changing target perceptions of social control must be carefully considered.

Some prior research has also attempted to change the agents' behavior. Gorin and colleagues (2019), for example, engaged partners in an intensive intervention designed to increase autonomy support provision toward their partner, who was attempting to lose weight. Partners were taught strategies for providing autonomy support, such as using nonjudgmental language. They were also given clinical tools to facilitate the enactment

of autonomy-supporting behaviors as well as personalized feedback on their ability to provide autonomy support. Despite the barrage of strategies used to try to change the partner's behaviors, these intervention-induced strategies were ineffective in changing partners' behavior toward the target. Thus, this research suggests that it may be very difficult to change agents' provision of social control strategies in well-established relationships. Overall, there is insufficient evidence on the key factors that affect both the provision and receipt of social control to design interventions. More observational research is needed.

Limitations and Future Directions

There are several limitations to this research. A central limitation in both studies is that this research was conducted with individuals involved in relationships, rather than with couples. Data from both partners is needed to better understand the antecedents and consequences of social control and to answer important theoretical questions. For instance, to what extent are targets accurate in detecting agents' motives, and how do agents' self-reported motives predict targets' reactions to social control attempts? Berzins and colleagues (2018) found that targets of social control tend to perceive agents' motives for using social control accurately (e.g., they distinguished between short-term and long-term motives), but that targets also projected their own influence motives onto their partners. Additionally, targets underestimated agents' long-term motives for using social control.

One next step for future research is to examine how targets' accuracy of their perceptions of agents' motives for influence might change over time in response to the agent's use of different strategies. One prediction is that targets will show more bias in

their perceptions of agents' motives when they (targets) do not want to change their behavior. If, for example, an individual does not feel capable of quitting smoking, they may underestimate the extent to which their partner wants to change their behavior due to interdependent motives, perhaps because the motive is more threatening (e.g., "I can't quit smoking, but my partner cares about me and wants me to quit").

Study 2 was also limited in the time scale that was assessed. Study 2 assessed the effects of social control on eating and relational behavior over the course of two weeks. This time period may be too short to capture the full across-time effects of social control, especially with regard to eating behavior. Self-determination theory posits that autonomy-supporting environments should facilitate autonomous motivation, but that autonomous motivation takes time to develop (Stone, Deci, & Ryan, 2009). Two weeks may not be enough time to capture increases in autonomy motivation. The current research did not assess whether autonomous motivation for healthy eating changed over time; thus, the time course for the effect of autonomous motivation is unknown. A next step in this research is to assess the extent to which autonomy-supporting social control autonomy-limiting social control affects autonomous motivation, and the extent to which autonomous motivation then affects changes in eating behavior.

An additional limitation of Study 2 was that most of the sample completed the daily diaries during the COVID-19 pandemic. Most of the participants who completed the study during the pandemic were students at the University of Minnesota, and thus, most were living in Minnesota during the pandemic and were subjected to the same restrictions with regard to their ability to go to work and to engage in recreational activities. The COVID-19 pandemic and social distancing guidelines likely affected

participants' interactions with their partner, their stress, their ability to engage in their

normal eating behaviors, and, perhaps, their partners' motivation to enact social control.

Items were added to the reflection survey to address these potential variables that could

affect the generalizability of the Study 2 results to "normal," non-pandemic life. A next

step in this research is to conduct follow-up analyses to address whether there are

differences in the two sub-samples (i.e., ones who completed the study pre-COVID-19

and during COVID-19). It may be the case that the effects of social control are amplified

for the individuals who completed the studying during the pandemic, as partners may

have had more opportunities to influence each other's eating and greater motivation to

help their partner be healthier than usual.

This research also focuses on eating behavior rather than other health behaviors.

The domain of eating was chosen specifically because it is a health behavior that agents

often report wanting to change in targets (Lewis & Butterfield, 2007) and because

partners often engage in eating together (e.g., on average, participants in the current

research reported eating with their partner at least once per day). Eating, therefore, is both

a context in which social control likely occurs in relationships and a meaningful domain

in which to start examining responses to social control. However, social control may

operate differently in different health domains. For example, some researchers have

assessed how health behavior characteristics such as severity of the consequences for the

targets' long-term health and frequency of the behavior are associated with the agent's

use of social control strategies (Lewis & Butterfield, 2005). Future research should study

social control in different health behavior contexts to understand the conditions under

which autonomy-supporting social control and autonomy-limiting social control are especially beneficial or detrimental to other health as well as people's relationships.

Additionally, this research was limited to cohabiting romantic couples. Social control may look different in non-cohabiting couples, who may have fewer opportunities to use social control because they do not share the same living environment. Additionally, social control could operate differently in different types of relationships. For instance, in parent-child relationships, the motives of the parent may be less important predictors of children's relational behavior toward the parent (e.g., a child may react with destructive relational responses, regardless of their perceptions of the parent's motives). Thus, an important next step is to examine health and relational reactions to social control in different types of close relationships, such as family relationships and friendships.

Conclusion

In two studies – one experimental and one observational – I found evidence that people respond to autonomy-supporting social control with constructive relational behaviors and healthier eating behaviors in general. This work extends prior research by considering both relational responses to different types of social control *and* health behavior responses to social control. It also provides a more nuanced examination of the frequency and variability of different social control strategies that romantic partners use to influence their partner's eating behavior. Social influences on health behavior have long been recognized as potent means of change; it is clear that close others can and do influence each other's health behavior, both intentionally and unintentionally. In order to leverage social control processes to improve individuals' health and relationships,

researchers need to consider both the health and relational antecedents and consequences of social control. In addition, researchers need to study social control and reactions to it as they unfold over time. The current research contributes to all of these efforts.

Table 1

Pilot Study 1 Participant Demographic Characteristics (n=137)

	Sample 1 (*n* = 92)	Sample 2 (*n* = 45)	Pooled (*n* = 137)
Healthiness of Eating Habits	*M* = 3.96 (*SD* = 0.98)	*M* = 3.67 (*SD* = 1.33)	*M* = 3.86 (*SD* = 1.11)
Interest in Improving Eating Habits	*M* = 3.50 (*SD* = 0.85)	*M* = 3.56 (*SD* = 0.97)	*M* = 3.52 (*SD* = 0.88)
Average Number of Meals Eaten with Partner Each Week	*M* = 9.64 (*SD* = 4.62)	*M* = 9.71 (*SD* = 4.89)	*M* = 9.66 (*SD* = 4.69)
Self - Gender Identity			
Man	44 (48%)	30 (67%)	74 (54%)
Woman	48 (52%)	15 (33%)	63 (46%)
Same Sex Partner			
Yes	13 (14%)	5 (11%)	18 (13%)
No	79 (86%)	40 (89%)	119 (87%)
Self - Age	*M* = 37.78 years (*SD* = 10.76 years)	*M* = 36.80 years (*SD* = 10.10 years)	*M* = 37.46 years (*SD* = 10.52)
Partner Age	*M* = 37.49 years (*SD* = 10.99 years)	*M* = 35.49 years (*SD* = 10.53 years)	*M* = 36.83 years (*SD* = 10.84 years)
Race			
African American / Black	21 (23%)	6 (13%)	27 (20%)
Native American	0 (0%)	1 (2%)	1 (0.7%)
Asian	5 (5%)	2 (4%)	7 (5%)
Hispanic / Latino/a	3 (3%)	2 (4%)	5 (4%)
White / Caucasian	61 (66%)	33 (73%)	94 (69%)
Other	2 (2%)	1 (2%)	3 (2%)
Self-Reported Overall Health	*M* = 3.56 (*SD* = 0.97)	*M* = 2.78 (*SD* = 1.04)	*M* = 2.57 (*SD* = 1.01)
Partner – Overall Health	*M* = 2.26 (*SD* = 0.91)	*M* = 2.53 (*SD* = 0.89)	*M* = 2.35 (*SD* = 0.91)
Education			
Less Than High School Degree	0 (0%)	0 (0%)	0 (0%)
High School Degree	16 (17%)	13 (29%)	29 (21%)

2-Year Degree	21 (23%)	9 (20%)	30 (22%)
4-Year Degree	39 (42%)	16 (36%)	55 (40%)
Master's Degree	16 (17%)	7 (16%)	23 (17%)
PhD	0 (0%)	0 (0%)	0 (0%)
Relationship Status			
Casually Dating	5 (5%)	1 (2%)	6 (4%)
Exclusively Dating	18 (20%)	11 (24%)	29 (21%)
Almost Engaged	6 (7%)	9 (20%)	15 (11%)
Engaged	8 (9%)	4 (4%)	12 (9%)
Married	55 (60%)	20 (44%)	75 (55%)
Relationship Exclusivity			
Yes	82 (89%)	42 (46%)	124 (91%)
No, I see other people	2 (2%)	1 (2%)	3 (2%)
No, my partner sees other people	1 (1%)	0 (0%)	1 (0.7%)
No we both see other people separately	3 (3%)	0 (0%)	3 (2%)
No, we both see other people together	3 (3%)	2 (4%)	5 (4%)
Other	1 (1%)	0 (0%)	1 (0.7%)
Relationship Length	$M = 9.43$ years ($SD = 8.56$)	$M = 9.17$ years ($SD = 8.29$ years)	$M = 9.35$ years ($SD = 8.44$)

Note. M = Mean. SD = Standard deviation.

Table 2

Pilot Study 1 Results: Proportion of Participants Rating Strategies On Key Dimensions

Brief Description of Strategy	Proportion of Participants Who Rated Strategy as Autonomy-Limiting/Supporting	Proportion of Participants Who Rated Strategy as *Somewhat* to *Extremely Direct*	Proportion of Participants Who Rated Strategy as *Somewhat* to *Extremely Easy to Imagine*	Decision
1a. Partner asks about your preferences, then suggests a vegetarian meal.	67% rated between 5-7 ($M = 4.78$, $SD = 1.47$)	62% ($M = 4.73$, $SD = 1.46$)	82% ($M = 4.38$, $SD = 0.98$)	Retain; Autonomy-Supporting Strategy
1b. Partner orders a salad for both of you without asking your preferences.	65% rated between 1-3 ($M = 3.05$, $SD = 1.84$)	61% ($M = 4.94$, $SD = 1.79$)	68% ($M = 3.89$, $SD = 1.11$)	Retain; Autonomy-Limiting Strategy
2a. Partner says people don't eat enough veggies and then says, "Just look at your own diet."	46% rated between 1-3 ($M = 3.58$, $SD = 1.35$)	64% ($M = 4.85$, $SD = 1.61$)	73% ($M = 4.05$, $SD = 1.23$)	Discard
2b. Partner directly says, "You eat too much junk and not enough vegetables – your diet is unhealthy."	52% rated between 5-7 ($M = 4.04$, $SD = 1.94$)	86% ($M = 5.69$, $SD = 1.20$)	87% ($M = 4.46$, $SD = 1.14$)	Discard
3a. You bought some unhealthy foods and your partner through them out and replaced them with fruit.	65% rated between 1-3 ($M = 3.17$, $SD = 2.00$)	74% ($M = 5.18$, $SD = 1.77$)	68% ($M = 4.04$, $SD = 1.30$)	Retain; Autonomy-Limiting Strategy
3b. You bought some unhealthy food and your partner offers you an	55% rated between 5-7 ($M = 4.32$, $SD = 1.37$)	79% ($M = 5.23$, $SD =	85% ($M = 4.50$, $SD = 1.00$)	Discard

orange instead.		1.30)		
3c. You told your partner you need more snacks and they bought you some fruits and vegetables, saying they remembered what you told them.	86% rated between 5-7 ($M = 5.51$, $SD = 1.08$)	65% ($M = 4.80$, $SD = 1.60$)	90% ($M = 4.69$, $SD = 0.87$)	Retain; Autonomy-Supporting Strategy
4a. Partner picks up fruits and vegetables because they thought you'd like them and says, "feel free to use as many as you want."	79% rated between 5-7 ($M = 5.35$, $SD = 1.41$)	47% ($M = 4.06$, $SD = 1.56$)	95% ($M = 4.79$, $SD = 0.79$)	Retain; Autonomy-Supporting Strategy
4b. Partner picks up fruits and vegetables and says they picked them up because they thought they'd be good for you and "don't forget to pack them in your lunch"	83% rated between 5-7 ($M = 5.58$, $SD = 1.18$)	80% ($M = 5.34$, $SD = 1.33$)	92% ($M = 4.82$, $SD = 0.95$)	Retain; Autonomy-Supporting Strategy
5a. Partner suggests making a recipe to help use up vegetables (from a healthy eating cookbook) instead of getting take-out	72% rated between 5-7 ($M = 5.07$, $SD = 1.40$)	72% ($M = 4.80$, $SD = 1.50$)	89% ($M = 4.51$, $SD = 1.08$)	Retain; Autonomy-Supporting Strategy
5b. Directly rejects your preferences for take-out and says you should make a healthier recipe	53% rated between 5-7 ($M = 4.39$, $SD = 1.59$)	67% ($M = 5.00$, $SD = 1.46$)	82% ($M = 4.36$, $SD = 1.00$)	Discard
9a. Partner jokes about you eating a lot of ice cream.	47% rated between 1-3 ($M = 3.74$, $SD = 1.50$)	52% ($M = 4.27$, $SD = 1.69$)	76% ($M = 4.18$, $SD = 1.21$)	Discard
9b. Partner says, "Ice cream again? Do you know how much sugar is in that?"	55% rated between 1-3 ($M = 3.48$, $SD = 1.97$)	82% ($M = 5.56$, $SD = 1.33$)	87% ($M = 4.56$, $SD = 0.97$)	Revise; Autonomy-Limiting Strategy
10a. Partner comments, "I never	58% rated between 5-7	75%	87%	Discard

see you with vegetables in your lunch…you really should eat more healthy foods."	(*M* = 4.49, *SD* = 1.64)	(*M* = 5.11, *SD* = 1.40)	(*M* = 4.59, *SD* = 1.01)	
10b. Partner comments, "I bet your lunch would taste even better if you added some fresh veggies."	74% rated between 5-7 (*M* = 4.92, *SD* = 1.17)	47% (*M* = 4.24, *SD* = 1.45)	85% (*M* = 4.42, *SD* = 1.01)	Retain; Autonomy-Supporting Strategy
11a. You order take-out and your partner looks at it with disgust and says, "Take-out again? That food is so unhealthy!"	59% rated between 1-3 (*M* = 3.20, *SD* = 1.41)	72% (*M* = 5.35, *SD* = 1.46)	73% (*M* = 4.17, *SD* = 1.20)	Retain; Autonomy-Limiting Strategy
11b. You order take-out and your partner looks disappointed and said that they were hoping you could make a healthy dinner together but they know you love that restaurant.	72% rated between 5-7 (*M* = 5.04, *SD* = 1.28)	58% (*M* = 4.61, *SD* = 1.48)	87% (*M* = 4.65, *SD* = 1.03)	Retain; Autonomy-Supporting Strategy)
11c. You order take-out and your partner frowns and says, "You should stay away from that food, it's kind of shocking when you think about all the things they put into it."	56% rated between 1-3 (*M* = 3.58, *SD* = 1.61)	76% (*M* = 5.24, *SD* = 1.34)	80% (*M* = 4.44, *SD* = 1.12)	Retain; Autonomy-Limiting Strategy
13a. Partner hints that you should eat more leafy green vegetables	52% rated between 5-7 (*M* = 4.38, *SD* = 1.74)	63% (*M* = 4.70, *SD* = 1.68)	87% (*M* = 4.59, *SD* = 1.06)	Discard
13b. Partner comments that they want to go to a restaurant for your next date (after hearing they have salads)	67% rated between 5-7 (*M* = 5.02, *SD* = 1.28)	38% (*M* = 3.89, *SD* = 1.62)	88% (*M* = 4.61, *SD* = 0.94)	Discard
14a. You complain to your partner	64% rated between 5-7	63%	92%	Discard

that you're tired of your typical lunch, they listen, then offer to share a recipe.	(*M* = 5.53, *SD* = 1.21)	(*M* = 4.70, *SD* = 1.57)	(*M* = 4.76, *SD* = 0.94)	
14b. You complain to partner and they immediately say that they've been waiting for you to ask them for help, then offer to share a recipe	76% rated between 5-7 (*M* = 5.21, *SD* = 1.50)	83% (*M* = 5.27, *SD* = 1.38)	85% (*M* = 4.63, *SD* = 1.07)	Retain; Autonomy-Supporting Strategy

Note. Both groups rated strategies 3a and 14a. M = Mean. SD = Standard deviation.

Table 3

Pilot Study 2 Participant Demographic Characteristics (n = 93)

	Mean (SD) or Frequency (%)
Healthiness of Eating Habits	*M* = 3.85 (*SD* = 1.13)
Interest in Improving Eating Habits	*M* = 3.81 (0.84)
Average Number of Meals Eaten with Partner Each Week	*M* = 9.83 meals (*SD* = 4.75 meals)
Self - Gender Identity	
Man	49 (53%)
Woman	43 (46%)
Transgender	1 (1%)
Same Sex Partner	
Yes	5 (5%)
No	88 (95%)
Self - Age	*M* = 37.44 years (*SD* = 9.19 years)
Partner Age	*M* = 36.89 years (*SD* = 9.32 years)
Ethnicity (Are you of Hispanic, Latino/a, or Spanish origin?)	
No, not of Hispanic, Latino/a, or Spanish origin	70 (75%)
Yes, Puerto Rican	3 (3%)
Yes, Mexican, Chicano/a	6 (6%)
Yes, another Hispanic, Latino/a, or Spanish origin	14 (15%)
Race	
White	63 (68%)
Black or African American	23 (25%)
Other	7 (8%)
Self-Reported Overall Health	*M* = 2.51 (*SD* = 0.94)
Partner – Overall Health	*M* = 2.48 (*SD* = 0.97)
Education	

High School Degree	24 (26%)
2-Year Degree	13 (14%)
4-Year Degree	35 (38%)
Master's Degree	20 (22%)
PhD	1 (1%)
Relationship Status	
Casually Dating	6 (6%)
Exclusively Dating	19 (20%)
Almost Engaged	10 (11%)
Engaged	7 (8%)
Married	51 (55%)
Relationship Exclusivity	
Yes	88 (95%)
No, I see other people	2 (2%)
No we both see other people separately	1 (1%)
Prefer not to say	2 (2%)
Relationship Length ($n = 80$)	$M = 9.03$ years ($SD = 8.83$ years)

Note. M = Mean. SD = Standard deviation.

Table 4

Pilot Study 2 Results: Proportion of Participants Rating Response Options on Ease of Imagining

Social Control Context	Constructive Response Option Rating Proportion	Neutral Response Option Rating Proportion	Destructive Response Option Rating Proportion
SCS 1: Supportive	96% (*M* = 4.61, *SD* = 1.22)	100% (*M* = 4.74, *SD* = 0.93)	91% (*M* = 4.26, *SD* = 1.44)
SCS 1: Limiting	87% (*M* = 4.11, *SD* = 1.37)	96% (*M* = 4.53, *SD* = 0.93)	91% (*M* = 4.26, *SD* = 1.26)
SCS 2: Supportive	96% (*M* = 4.67, *SD* = 1.30)	98% (*M* = 4.80, *SD* = 1.15)	89% (*M* = 4.24, *SD* = 1.48)
SCS 2: Limiting	83% (*M* = 3.89, *SD* = 1.43)	96% (*M* = 4.40, *SD* = 1.10)	89% (*M* = 4.26, *SD* = 1.28)
SCS 3: Supportive	100% (*M* = 5.09, *SD* = 0.94)	100% (*M* = 4.91, *SD* = 1.01)	89% (*M* = 4.39, *SD* = 1.39)
SCS 3: Limiting	96% (*M* = 4.53, *SD* = 0.95)	96% (*M* = 4.23, *SD* = 1.03)	89% (*M* = 4.17, *SD* = 1.39)
SCS 4: Supportive	85% (*M* = 4.48, *SD* = 1.47)	96% (*M* = 4.70, *SD* = 1.21)	91% (*M* = 4.22, *SD* = 1.33)
SCS 4: Limiting	83% (*M* = 3.98, *SD* = 1.45)	96% (*M* = 4.47, *SD* = 1.10)	89% (*M* = 4.21, *SD* = 1.35)
SCS 5: Supportive	98% (*M* = 4.85, *SD* = 1.19)	96% (*M* = 4.91, *SD* = 1.11)	83% (*M* = 4.17, *SD* = 1.62)
SCS 5: Limiting	87% (*M* = 3.94, *SD* = 1.26)	87% (*M* = 4.23, *SD* = 1.29)	83% (*M* = 4.17, *SD* = 1.48)
SCS 6: Supportive	98% (*M* = 4.61, *SD* = 1.11)	98% (*M* = 5.09, *SD* = 1.07)	83% (*M* = 4.33, *SD* = 1.58)
SCS 6: Limiting	93% (*M* = 4.38, *SD* = 1.21)	93% (*M* = 4.70, *SD* = 1.14)	91% (*M* = 4.40, *SD* = 1.23)

Note. N = 93 participants. M = Mean. SD = Standard deviation.

Table 5

Pilot Study 2 - Constructiveness/Neutral/Destructiveness Ratings of Relational Response Options Across Social Control Contexts

Social Control Context	Constructive Response Option		Neutral Response Option		Destructive Response Option		Decision
	Proportion Rating Between 5-7	*Mean (SD)*	Proportion Rating Between 3-5	*Mean (SD)*	Proportion Rating Between 1-3	*Mean (SD)*	
SCS 1: Supportive	98%	*M* = 6.20* (*SD* = 0.93)	70%	*M* = 4.98, *SD* = 1.27	66%	*M* = 3.07 (*SD* = 2.29)	Retain
SCS 1: Limiting	83%	*M* = 5.55* (*SD* = 1.06)	77%	*M* = 4.68 (*SD* = 1.02)	66%	*M* = 3.34 (*SD* = 1.7)	Retain
SCS 2: Supportive	91%	*M* = 5.91 (*SD* = 1.43)	74%	*M* = 4.35 (*SD* = 1.32)	72%	*M* = 2.93 (*SD* = 2.11)	Retain
SCS 2: Limiting	89%	*M* = 5.60 (*SD* = 1.19)	74%	*M* = 4.45 (*SD* = 1.30)	74%	*M* = 3.15 (*SD* = 1.77)	Retain
SCS 3: Supportive	87%	*M* = 5.72 (*SD* = 1.13)	54%	*M* = 5.3* (*SD* = 1.07)	66%	*M* = 3.02 (*SD* = 2.02)	Discard
SCS 3: Limiting	87%	*M* = 5.28 (*SD* = 1.04)	68%	*M* = 4.83* (*SD* = 1.13)	66%	*M* = 3.32 (*SD* = 1.82)	Discard
SCS 4: Supportive	93%	*M* = 6.07 (*SD* = 1.12)	72%	*M* = 4.67 (*SD* = 1.35)	70%	*M* = 2.89 (*SD* = 2.07)	Retain
SCS 4: Limiting	91%	*M* = 5.72 (*SD* = 0.95)	70%	*M* = 4.62 (*SD* = 1.33)	74%	*M* = 2.96 (*SD* = 1.64)	Retain
SCS 5: Supportive	93%	*M* = 6.30* (*SD* = 1.05)	72%	*M* = 5.13 (*SD* = 1.13)	66%	*M* = 3.09 (*SD* = 2.10)	Retain
SCS 5: Limiting	94%	*M* = 5.81* (*SD* = 1.10)	66%	*M* = 4.68 (*SD* = 1.37)	66%	*M* = 3.21 (*SD* = 1.46)	Retain
SCS 6:	93%	*M* = 5.76 (*SD*	66%	*M* = 4.74 (*SD*	63%	*M* = 3.43 (*SD*	Retain

Supportive		= 1.18)		= 1.44)		= 1.96)	
SCS 6:	89%	$M = 5.62$ (SD	79%	$M = 4.64$ (SD	64%	$M = 3.66$ (SD	Retain
Limiting		= 1.17)		= 1.03)		= 1.62)	

Note. Means marked with * indicate that the means between the two strategies (in the same context) were significantly different from one another at the *p* < .05 level. For instance, the mean rating of the constructive response option in the autonomy-supporting SCS compared to the same response option in the autonomy-limiting SCS were perceived as significantly different from one another. N = 93 participants. SCS = Social Control Scenario. M = Mean. SD = Standard deviation.

Table 6

Study 1 Participant Demographic Characteristics (n = 709)

	Mean (SD) or Frequency (%)
Healthiness of Eating Habits	$M = 4.01$ ($SD = 0.88$)
Interest in Improving Eating Habits	$M = 3.71$ ($SD = 0.93$)
Number of Meals Eaten with Partner Per Week	$M = 9.9$ meals ($SD = 4.61$ meals)
Self - Gender Identity	
Man	285 (41%)
Woman	419 (60%)
Non-binary	3 (<1%)
Prefer not to say	5 (<1%)
Same Sex Partner	
Yes	50 (7%)
No	659 (93%)
Self - Age	$M = 33.42$ years ($SD = 8.68$ years)
Partner Age	$M = 34.02$ years ($SD = 9.41$ years)
Ethnicity (Are you of Hispanic, Latino/a, or Spanish origin?)	
No, not of Hispanic, Latino/a, or Spanish origin	629 (90%)
Yes, Puerto Rican	9 (1%)
Yes, Mexican, Chicano/a	32 (4.56%)
Yes, Cuban	4 (<1%)
Yes, another Hispanic, Latino/a, or Spanish origin	30 (4.28%)
Selected multiple	5 (<1%)
Race	
White	553 (79%)
Black or African American	65 (9%)
American Indian or Alaska Native	6 (<1%)
Asian Indian	7 (<1%)
Chinese	12 (1%)
Filipino	6 (<1%)
Japanese	1 (<1%)
Korean	5 (<1%)
Vietnamese	3 (<1%)
Prefer not to say	4 (<1%)
Guamanian or Chamorro	2 (<1%)
Race not listed above	9 (1%)
Selected multiple	36 (5%)
Self-Reported Overall Health	$M = 2.86$ ($SD = 0.86$)
Self-Reported BMI	$M = 27.88$ ($SD = 7.10$)
Partner – Overall Health	$M = 2.73$ ($SD = 0.97$)

Education

	High School Degree	182 (26%)
	2-Year Degree	150 (21%)
	4-Year Degree	275 (39%)
	Master's Degree	81 (12%)
	PhD	16 (2.28%)
	Prefer not to say (7)	5 (<1%)

Income

	Less than $10k	15 (2%)
	$10k-$19,999	33 (5%)
	$20k-$29,999	66 (9%)
	$30k-$39,999	69 (10%)
	$40k-$49,999	98 (14%)
	$50k-$59,999	76 (11%)
	$60k-$69,999	70 (10%)
	$70k-$79,999	75 (11%)
	$80k-$89,999	56 (8%)
	$90k-$99,999	39 (6%)
	$100,000 to $149,999	71 (10%)
	$150,000 or more	29 (4%)
	Prefer not to say	12 (2%)

Occupation

	Employed	561 (80%)
	Unemployed	20 (3%)
	Homemaker	61 (8%)
	Student	12 (2%)
	Retired	4 (<1%)
	Other	6 (<1%)
	Selected Multiple	45 (6%)

Relationship Status

	Casually Dating	9 (1%)
	Exclusively Dating	151 (21%)
	Almost Engaged	146 (21%)
	Engaged	96 (14%)
	Married	307 (44%)

Relationship Exclusivity

	Yes	693 (99%)
	No, I see other people	1 (<1%)
	No, my partner sees other people	3 (<1%)
	No we both see other people separately	4 (<1%)
	No, we both see other people together	5 (<1%)
	Other	2 (<1%)
	Prefer not to say	1 (<1%)

Relationship Length ($n = 596$)	$M = 5.23$ years ($SD = 2.66$)
Cohabitation Length ($n = 578$)	$M = 3.73$ years ($SD = 2.62$)
Number of Children ($n = 708$)	

0 children	356 (51%)
Pregnant	3 (<1%)
1 child	152 (21%)
2 children	111 (16%)
3 children	58 (8%)
4 children	18 (3%)
5 children	8 (1%)
6 children	2 (<1%)
Number of Children who Live with them (*n* = 352)	*M* = 1.62 (*SD* = 1.12)
Perceived Relationship Quality Components Inventory Overall Score	*M* = 6.04 (*SD* = 0.91)
Satisfaction	*M* = 6.02 (*SD* = 1.13)
Commitment	*M* = 6.45 (*SD* = 0.88)
Intimacy	*M* = 6.04 (*SD* = 1.05)
Trust	*M* = 6.18 (*SD* = 1.05)
Passion	*M* = 5.23 (*SD* = 1.47)
Love	*M* = 6.35 (*SD* = 0.88)
Social Control Norms	*M* = 3.09 (*SD* = 1.10)

Note. M = Mean. SD = Standard deviation.

Table 7

Bivariate Correlations Between Key Study 1 Variables and Covariates

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Relational Behaviors	1								
2. Eating Behaviors	.55**	1							
3. Participants' Gender	-.18**	-.07	1						
4. Cohabitation Length	-.09*	-.04	.04	1					
5. PRQC	.18**	.15**	-.01	-.04	1				
6. Interest in Improving Eating Habits	.07	.20**	.07	.04	.06	1			
7. Average Number of Meals Eaten with Partner Per Week	.05	.13**	-.02	-.00	.19**	.10**	1		
8. Partner's Past Use of Social Control	.19**	.14**	-.21**	.01	.03	.11**	.10**	1	
9. Social Control Norms	.42**	.42**	-.09*	-.01	.20**	.17**	.07	.24**	1

Note. * p < .05, ** p < .01, ***p < .001. PRQC = Perceived Relationship Quality Components Inventory.

Table 8

Effect of Motive Type, Stage, and The Interaction Between Motive Type and Stage on

Relational Behaviors in the SCS (Hypothesis 1a)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	0.35*** (0.03) [0.28, 0.41]	0.53*** (.08) [0.37, 0.68]
Stage of SCS	0.01 (0.01) [-0.01, 0.03]	0.01 (0.01) [-0.02, 0.03]
Motive Type	0.06† (0.03) [-0.00, 0.13]	0.03 (0.04) [-0.04, 0.10]
Stage x Motive Type	-0.01 (0.01) [-0.03, 0.01]	-0.00 (0.01) [-0.03, 0.02]
Gender	-	-0.12* (0.04) [-0.21, -0.03]
Cohabitation Length	-	-0.01 (0.01) [-0.03, 0.00]
PRQC	-	0.07*** (0.03) [0.02, 0.12]
Partner Past Social Control	-	-0.01 (0.02) [-0.06, 0.04]
Social Control Norms	-	0.09*** (0.02) [0.03, 0.14]
Model Summary		
Log Likelihood	-1791.03	-1481.71
AIC	3600.06	2991.411
Marginal R2	0.004	0.05

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information

criterion. CI = Confidence interval. S.E. = Standard error. SCS = Social Control

Scenario. PRQC = Perceived Relationship Quality Components Inventory.

Table 9

Effect of Motive Type and Stage on the Association Between Autonomy-Limiting

Strategies and Relational Behaviors (Hypothesis 1b)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	-0.03 (0.04) [-0.10, 0.04]	0.03** (0.10) [0.08, 0.46]
Stage of SCS	0.01 (0.01) [-0.01, 0.03]	0.01 (0.01) [-0.02, 0.03]
Motive Type	0.02 (0.04) [-0.05, 0.10]	0.05 (0.04) [-0.03, 0.12]
Stage x Motive Type	-0.02† (0.01) [-0.04, -0.00]	-0.03* (0.01) [-0.05, -0.01]
Gender		-0.16* (0.06) [-0.28, -0.05]
Cohabitation Length		-0.01 (0.01) [-0.04, 0.01]
PRQC		0.07* (0.03) [0.00, 0.13]
Partner Past Social Control		0.04 (0.03) [-0.02, 0.10]
Social Control Norms		0.21*** (0.03) [0.16, 0.27]
Model Summary		
Log Likelihood	-1882.60	-1445.70
AIC	3777.1	2913.3
Marginal R2	0.002	0.16

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information

criterion. CI = Confidence interval. S.E. = Standard error. SCS = Social Control

Scenario. PRQC = Perceived Relationship Quality Components Inventory.

Table 10

Effect of Motive Type and Stage on The Association Between Autonomy-Supporting

Strategies and Healthiness of Eating (Hypothesis 2a)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	0.73*** (0.05) [0.62, 0.83]	0.71*** (0.05) [0.61, 0.81]
Stage of SCS	0.11*** (0.01) [.08, .13]	0.11*** (0.01) [0.08, 0.13]
Motive Type	0.04 (0.05) [-0.07, 0.14]	-0.01 (0.05) [-0.11, 0.09]
Stage x Motive Type	0.01 (0.01) [-0.02, 0.04]	0.01 (0.01) [-0.02, 0.04]
PRQC	-	0.04 (0.05) [-0.04, 0.13]
Interest in Improving Eating	-	0.12** (0.04) [0.03, 0.20]
Meals Per Week Eaten with Partner	-	0.02* (0.01) [0.00, 0.04]
Partner Past Social Control	-	-0 (0.04) [-0.08, 0.08]
Social Control Norms	-	0.31*** (0.01) [0.23, 0.39]
Model Summary		
Log Likelihood	-2470.3	-2431.0
AIC	4952.6	4884.0
Marginal R2	0.02	0.14

Note. * $p < .05$, ** $p < .01$, ***$p < .001$, † $p < .10$. AIC = Akaike information criterion.

CI = Confidence interval. S.E. = Standard error. SCS = Social Control Scenario. PRQC =

Perceived Relationship Quality Components Inventory.

Table 11

Effect of Motive Type and Stage on the Association Between Autonomy-Limiting

Strategies and the Healthiness of Eating (Hypothesis 2b)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	0.60*** (0.06) [0.48, 0.72]	0.63*** (0.06) [0.52, 0.74]
Stage of SCS	0.04** (0.02) [0.01, 0.07]	0.04** (0.02) [0.01, 0.07]
Motive Type	-0.05 (0.06) [-0.17, 0.07]	-0.06 (0.06) [-0.17, 0.05]
Stage x Motive Type	0 (0.02) [-0.03, 0.03]	0.00 (0.02) [-0.03, 0.03]
PRQC	-	0.07 (0.06) [-0.04, 0.18]
Interest in Improving Eating	-	0.15** (0.05) [0.04, 0.25]
Meals Per Week Eaten with Partner	-	0.01 (0.01) [-0.01, 0.03]
Partner Past Social Control	-	0.05 (0.05) [-0.05, 0.14]
Social Control Norms	-	0.31*** (0.04) [0.23, 0.40]
Model Summary		
Log Likelihood	-2622.8	-2582.6
AIC	5257.6	5187.3
Marginal R2	0.003	0.12

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion.

CI = Confidence interval. S.E. = Standard error. SCS = Social Control Scenario. PRQC =

Perceived Relationship Quality Components Inventory.

Table 12

Effect of Relationship Quality on the Association Between Motive Type, Strategy Type,

and Stage and Relational Behaviors

	Without Covariates	With Covariates
Predictor	Estimate (S.E.) [95% CI]	Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	0.16*** (0.02) [0.11, 0.21]	0.42*** (0.06) [0.30, 0.54]
Stage of SCS	0.01 (0.01) [-0.01, 0.02]	0.01 (0.01) [-0.01, 0.02]
Motive Type	0.01 (0.02) [-0.03, 0.04]	0.00 (0.02) [-0.03, 0.04]
Strategy Type	0.18*** (0.02) [0.15, 0.22]	0.16*** (0.02) [0.13, 0.20]
PRQC	0.13*** (0.03) [0.08, 0.18]	0.10*** (0.03) [0.04, 0.16]
PRQC x Motive Type	-0.00 (0.02) [-0.04, 0.04]	-0.01 (0.02) [-0.05, 0.03]
PRQC x Strategy Type	-0.02 (0.02) [-0.06, 0.02]	-0.01 (0.02) [-0.05, 0.03]
PRQC x Stage of SCS	-0.01 (0.01) [-0.03, 0.00]	-0.02† (0.01) [-0.03, 0.00]
Gender	-	-0.16*** (0.04) [-0.23, -0.09]
Cohabitation Length	-	-0.01† (0.01) [-0.03, 0.00]
Partner Past Social Control	-	0.02 (0.02) [-0.02, 0.05]
Social Control Norms	-	0.16*** (0.02) [0.13, 0.20]
Model Summary		
Log Likelihood	-3686.3	-2944.2
AIC	7392.5	5916.4
Marginal R2	0.07	0.15

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion.

CI = Confidence interval. S.E. = Standard error. SCS = Social Control Scenario. PRQC =

Perceived Relationship Quality Components Inventory.

Table 13

Effect of Social Control Norms on the Association Between Motive Type, Strategy Type,

and Stage and Relational Behaviors

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	0.16*** (0.02) [0.12, 0.21]	0.42*** (0.06) [0.30, 0.53]
Stage of SCS	0.01 (0.01) [-0.02, 0.02]	0.01 (0.01) [-0.01, 0.02]
Motive Type	-0.00 (0.02) [-0.04, 0.03]	0.01 (0.02) [-0.03, 0.04]
Strategy Type	0.17*** (0.02) [0.14, 0.20]	0.17*** (0.02) [0.13, 0.20]
Social Control Norms	0.24*** (0.02) [0.20, 0.28]	0.22*** (0.02) [0.17, 0.26]
Norms x Motive Type	0.01 (0.02) [-0.02, 0.04]	0.01 (0.02) [-0.02, 0.04]
Norms x Strategy Type	-0.06*** (0.02) [-0.09, -0.03]	-0.06*** (0.02) [-0.09, -0.03]
Norms x Stage of SCS	-0.03*** (0.01) [-0.04, -0.01]	-0.03*** (0.01) [-0.04, -0.01]
Gender	-	-0.15*** (0.04) [-0.22, -0.08]
Cohabitation Length	-	-0.01* (0.01) [-0.03, -0.00]
Partner Past Social Control	-	0.01 (0.02) [-0.03, 0.05]
PRQC	-	0.07*** (0.02) [0.03, 0.05]
Model Summary		
Log Likelihood	-3615.8	-2932.2
AIC	7251.7	5892.4
Marginal R2	0.15	0.16

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion.

CI = Confidence interval. S.E. = Standard error. SCS = Social Control Scenario. PRQC =

Perceived Relationship Quality Components Inventory.

Table 14

Average Relational Behavior and Healthiness of Eating Across Stages of the SCS According to Strategy Type

	Autonomy-Supporting SCS	Autonomy-Limiting SCS	Autonomy-Supporting SCS	Autonomy-Limiting SCS
	Relational Behavior	Relational Behavior	Healthiness of Eating	Healthiness of Eating
Stage 1	*M* = 0.29 (*SD* = 0.80)	*M* = 0.02 (*SD* = 0.83)	*M* = 0.82 (*SD* = 1.02)	*M* = 0.72 (*SD* = 1.14)
Stage 2	*M* = 0.53 (*SD* = 0.65)	*M* = 0.03 (*SD* = 0.84)	*M* = 0.94 (*SD* = 1.07)	*M* = 0.62 (*SD* = 1.28)
Stage 3	*M* = 0.17 (*SD* = 0.74)	*M* = -.89 (*SD* = 0.79)	*M* = 0.55 (*SD* = 1.22)	*M* = 0.50 (*SD* = 1.35)
Stage 4	*M* = 0.42 (*SD* = 0.61)	*M* = -.89 (*SD* = 0.73)	*M* = 1.14 (*SD* = 1.13)	*M* = 0.66 (*SD* = 1.29)
Stage 5	*M* = 0.38 (*SD* = 0.58)	*M* = 0.17 (*SD* = 0.69)	*M* = 1.25 (*SD* = 1.14)	*M* = 0.91 (*SD* = 1.29)
Average	*M* = 0.36 (*SD* = 0.68)	*M* = 0.0 (*SD* = 0.78)	*M* = 0.94 (*SD* = 1.12)	*M* = 0.68 (*SD* = 1.27)

Note. N = 361 in Autonomy-Supporting Condition and N = 348 in Autonomy-Limiting Condition. For relational behavior: -1 = destructive, 0 = neutral, 1 = constructive. For healthiness of eating: -3 = much less healthy than usual, 0 = as healthy as usual, 3 = much more healthy than usual. SCS = Social Control Scenario. SD = Standard deviation.

Table 15

Average Relational Behavior and Healthiness of Eating Across Stages of the SCS According to Motive Type

	Interdependent Motives	Independent Motives	Interdependent Motives	Independent Motives
	Relational Behavior	Relational Behavior	Healthiness of Eating	Healthiness of Eating
Stage 1	$M = 0.22$ ($SD = 0.81$)	$M = 0.09$ ($SD = 0.85$)	$M = 0.76$ ($SD = 1.06$)	$M = 0.79$ ($SD = 1.11$)
Stage 2	$M = 0.30$ ($SD = 0.79$)	$M = 0.28$ ($SD = 0.79$)	$M = 0.81$ ($SD = 1.16$)	$M = 0.75$ ($SD = 1.21$)
Stage 3	$M = 0.01$ ($SD = 0.76$)	$M = 0.06$ ($SD = 0.79$)	$M = 0.52$ ($SD = 1.29$)	$M = 0.54$ ($SD = 1.28$)
Stage 4	$M = 0.13$ ($SD = 0.73$)	$M = 0.19$ ($SD = 0.72$)	$M = 0.86$ ($SD = 1.25$)	$M = 0.94$ ($SD = 1.21$)
Stage 5	$M = 0.27$ ($SD = 0.65$)	$M = 0.26$ ($SD = 0.65$)	$M = 1.13$ ($SD = 1.23$)	$M = 1.05$ ($SD = 1.23$)
Average	$M = 0.19$ ($SD = 0.53$)	$M = 0.17$ ($SD = 0.53$)	$M = 0.82$ ($SD = 0.92$)	$M = 0.81$ ($SD = 0.96$)

Note. N = 355 in Interdependent Motives Condition and N = 354 in Independent Motives Condition. For relational behavior: -1 = destructive, 0 = neutral, 1 = constructive. For healthiness of eating: -3 = much less healthy than usual, 0 = as healthy as usual, 3 = much more healthy than usual. SCS = Social Control Scenario. SD = Standard deviation.

Table 16

Effect of Motive Type, Strategy Type, and Stage on Relational Behaviors

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	0.16*** (0.03) [0.11, 0.21]	0.38*** (0.06) [0.26, 0.50]
Stage of SCS	0.01 (0.01) [-0.01, 0.02]	0.01 (0.01) [-0.01, 0.02]
Motive Type	0.04† (0.03) [-0.01, 0.10]	0.03 (0.03) [-0.01, 0.10]
Strategy Type	0.19*** (0.03) [0.13, 0.24]	0.16*** (0.03) [0.11, 0.22]
Stage of SCS x Motive Type	-0.02* (0.01) [0.03, -0.00]	-0.02* (0.01) [-0.03, -0.00]
Stage of SCS x Strategy Type	0.02 (0.03) [-0.02, 0.01]	0.00 (0.01) [-0.02, 0.02]
Motive Type x Strategy Type	0.02 (0.03) [-0.03, 0.07]	-0.01 (0.03) [-0.02, 0.02]
Stage x Motive Type x Strategy Type	0.00 (0.01) [-0.01, 0.02]	0.01 (0.01) [-0.00, 0.03]
Gender	-	-0.13*** (0.04) [-0.20, -0.06]
Cohabitation Length	-	-0.01† (0.01) [-0.03, 0.00]
PRQC	-	0.06** (0.02) [0.02, 0.11]
Partner Past Social Control	-	0.01 (0.02) [-0.02, 0.05]
Social Control Norms	-	0.15*** (0.02) [0.12, 0.19]
Model Summary	-	
Log Likelihood	-3670.77	-2975.57
AIC	7367.54	5987.14
Marginal R2	0.06	0.14

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion.

CI = Confidence interval. S.E. = Standard error. SCS = Social Control Scenario. PRQC =

Perceived Relationship Quality Components inventory.

Table 17

Effect of Motive Type, Strategy Type, and Stage on Healthiness of Eating

Predictor	Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	.67*** (.04) [.59, .74]	.67*** (.01) [.59, .74]
Stage of SCS	.07*** (.01) [.05, .09]	.07*** (.01) [.05, .09]
Motive Type	-.01 (.04) [-.09, .07]	-.04 (.04) [-.11, .04]
Strategy Type	.06 (.04) [-.02, .14]	.04 (.04) [-.03, .12]
Stage of SCS x Motive Type	.01 (.01) [-.01, .03]	.01 (.01) -.01, .03]
Stage of SCS x Strategy Type	.03** (.04) [.01, .05]	.03** (.04) [.01, .05]
Motive Type x Strategy Type	.04 (.04) [-.04, .12]	.02 (.04) [-.05, .10]
Stage x Motive Type x Strategy Type	.00 (.01) [-.02, .02]	.00 (.01) [-.02, .02]
PRQC	-	.06 (.04) [-.01, .13]
Interest in Improving Eating	-	.13*** (.03) [.06, .20]
Meals Eaten with Partner Per Week	-	.02* (.01) [.00, .03]
Partner Past Social Control	-	.02 (.03) [-.04, .09]
Social Control Norms	-	.31*** (.03) [.25, .37]
Model Summary		
Log Likelihood	-5110.4	-5031.4
AIC	10240.8	10092.8
Marginal R2	.02	.14

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion.

CI = Confidence interval. S.E. = Standard error. SCS = Social Control Scenario. PRQC = Perceived Relationship Quality Components inventory.

Table 18

Study 2 Participant Demographic Characteristics (n = 147)

	Mean (SD) or Frequency (%)
Healthiness of Eating Habits (*n* = 146)	*M* = 4.37 (*SD* = 0.72)
Interest in Improving Eating Habits (*n* = 146)	*M* = 3.56 (*SD* = 0.85)
Number of Meals Eaten with Partner Per Week (*n* = 146)	*M* = 9.35 (*SD* = 3.14)
Self - Gender Identity	
Man	40 (27%)
Woman	102 (69%)
Non-binary	4 (3%)
Prefer not to say	1 (< 1%)
Same Sex Partner	
Yes	135 (92%)
No	11 (7%)
Prefer not to say	1 (< 1%)
Self - Age	*M* = 28.50 years (*SD* = 5.56)
Partner Age	*M* = 29.17 years (*SD* = 5.84)
Ethnicity (Are you of Hispanic, Latino/a, or Spanish origin?)	
No, not of Hispanic, Latino/a, or Spanish origin	138 (94%)
Yes, Puerto Rican	3 (2%)
Yes, Mexican, Chicano/a	2 (1%)
Yes, Cuban	0 (0%)
Yes, another Hispanic, Latino/a, or Spanish origin	1 (< 1%)
Selected multiple	3 (2%0
Race	
White	125 (85%)
Black or African American	5 (3%)
American Indian or Alaska Native	1 (< 1%)
Asian Indian	3 (2%)
Chinese	3 (2%)
Filipino	1 (< 1%)
Japanese	0 (0%)
Korean	3 (2%)
Vietnamese	0 (0%)
Prefer not to say	0 (0%)
Guamanian or Chamorro	0 (0%)
Race not listed above	0 (0%)
Selected multiple	6 (4%)
Self-Reported Overall Health	*M* = 2.62 (*SD* = 0.75)
Self-Reported BMI	*M* = 26.08 (*SD* = 5.09)
Partner – Overall Health	*M* = 2.56 (*SD* = 0.91)
Education	
High School Degree	11 (7%)
2-Year Degree	4 (3%)

	4-Year Degree	72 (49%)
	Master's Degree	58 (39%)
	PhD	2 (1%)
Income		
	Less than $10k	6 (4%)
	$10k-$19,999	12 (8%)
	$20k-$29,999	9 (6%)
	$30k-$39,999	7 (5%)
	$40k-$49,999	14 (10%)
	$50k-$59,999	16 (11%)
	$60k-$69,999	11 (7%)
	$70k-$79,999	12 (8%)
	$80k-$89,999	8 (5%)
	$90k-$99,999	7 (5%)
	$100,000 to $149,999	29 (20%)
	$150,000 or more	12 (8%)
	Prefer not to say	4 (2%)
Occupation		
	Employed	50 (34%)
	Unemployed	1 (< 1%)
	Homemaker	3 (2%)
	Student	83 (56%)
	Retired	0 (0%)
	Other	10 (7%)
Relationship Status		
	Casually Dating	0 (0%)
	Exclusively Dating	24 (16%)
	Almost Engaged	40 (27%)
	Engaged	13 (9%)
	Married	70 (48%)
Relationship Exclusivity		
	Yes	140 (95%)
	No, I see other people	0 (0%)
	No, my partner sees other people	0 (0%)
	No we both see other people separately	5 (3%)
	No, we both see other people together	1 (< 1%)
	Other	1 (< 1%)
	Prefer not to say	0 (0%)
Relationship Length		$M = 6.18$ ($SD = 3.98$)
Cohabitation Length ($n = 146$)		$M = 4.12$ ($SD = 3.96$)
Perceived Relationship Quality Components Scale		$M = 5.92$ ($SD = 0.85$)
	Satisfaction	$M = 5.89$ ($SD = 1.19$)
	Commitment	$M = 6.57$ ($SD = 0.84$)
	Intimacy	$M = 6.02$ ($SD = 1.00$)
	Trust	$M = 6.23$ ($SD = 0.98$)
	Passion	$M = 4.39$ ($SD = 1.34$)

	Love	$M = 6.40$ ($SD = 0.81$)
Number of Children		
	0 children	116 (79%)
	Pregnant	6 (4%)
	1 child	13 (9%)
	2 children	11 (7%)
	3 children	3 (2%)
	4 children	1 (< 1%)
	5 children	0 (0%)
	6 children	0 (0%)
Number of Children who Live with them ($n = 29$)		$M = 1.69$ ($SD = 0.81$)
	Social Control Norms	$M = 3.44$ ($SD = 0.92$)

Note. M = Mean. SD = Standard deviation.

Table 19

Social Control Strategies Assessed in Study 2

Strategy	Average Rating	t-test	Categorization
1. Category: My partner showed support, understanding, or acceptance of my eating choices (e.g., avoided criticizing my eating).			
1. Listened to how I would like to do things regarding my eating choices.	6.20	$t(4) = 5.88$ $(p = .004)$	Autonomy-Supporting
2. Showed they understand how I feel about my eating choices.	6.00	$t(4) = 3.65$ $(p = .022)$	Autonomy-Supporting
3. Showed acceptance of my eating choices.	6.80	$t(4) = 14.00$ $(p = .000)$	Autonomy-Supporting
4. Showed they care when we talked about my eating choices.	5.60	$t(4) = 4.00$ $(p = .016)$	Autonomy-Supporting
5. Avoided criticizing my eating choices.	5.40	$t(4) = 2.75$ $(p = .052)$	Autonomy-Supporting
6. Gave me space or showed patience with my eating choices.	6.80	$t(4) = 14.00$ $(p = .000)$	Autonomy-Supporting
2. Category: My partner shared information, tips, or advice related to healthy eating (e.g., shared healthy recipes with me)			
7. Gave me tips or suggestions about how to eat healthier.	4.40	$t(4) = 1.00$ $(p = .374)$	Neutral
8. Shared healthy eating information or recipes with me (e.g., news articles, blogs, documentaries, YouTube videos).	4.60	$t(4) = 1.50$ $(p = .208)$	Neutral
9. Planned healthy meals with me.	3.40	$t(4) = -0.80$ $(p = .468)$	Neutral
10. Told me about how healthy eating could benefit me.	3.80	$t(4) = -0.53$ $(p = .621)$	Neutral
11. Told me about how unhealthy eating could hurt me.	3.00	$t(4) = -3.16$	Autonomy-Limiting

		(*p* = .034)	
12. Set healthy eating goals with me.	3.20	*t*(4) = -1.63 (*p* = .178)	Neutral

3. Category: My partner set a good example by eating healthy or offered to eat healthy with me.

13. Cooked or ate healthy meals with me.	4.17	*t*(5) = 0.20 (*p* = .849)	Neutral
14. Planned healthy meals with me (e.g., meal prep, planned to eat healthy on a date).	4.00	*t*(5) = 0.00 (*p* = 1.00)	Neutral
15. Purchased healthy foods for me.	2.83	*t*(5) = -3.80 (*p* = .013)	Autonomy-Limiting
16. Avoided eating or buying unhealthy foods around me.	4.17	*t*(5) = 0.42 (*p* = .695)	Neutral
17. Set a good example by eating healthy foods.	4.27	*t*(5) = 0.42 (*p* = .695)	Neutral

4. Category: My partner tried to change our home or routines to help me (or us) eat healthier (e.g., purchased healthy food for us, cooked healthy foods).

18. Cooked healthy meals with me.	3.67	*t*(5) = -0.47 (*p* = .661)	Neutral
19. Planned healthy meals with me (e.g., meal prep, planned to eat healthy on a date).	3.33	*t*(5) = -2.00 (*p* = .102)	Neutral
20. Purchased healthy foods for me.	2.17	*t*(5) = -3.05 (*p* = .028)	Autonomy-Limiting
21. Avoided buying unhealthy foods.	3.17	*t*(5) = -2.72 (*p* = .042)	Autonomy-Limiting
22. Chose a healthy restaurant for us to go to.	2.50	*t*(5) = -4.39 (*p* = .007)	Autonomy-Limiting
23. Planned healthy eating routines with me.	2.83	*t*(5) = -3.80 (*p* = .013)	Autonomy-Limiting

5. Category: My partner tried to make me feel bad about my eating (e.g., tried to make me feel guilty about my eating, criticized my eating).

24. Compared me to people who have unhealthy diets.	1.50	$t(5) = -11.18$ ($p < .001$)	Autonomy-Limiting
25. Expressed negative emotions (e.g., anger, frustration) about my eating choices.	1.17	$t(5) = -17.00$ ($p < .001$)	Autonomy-Limiting
26. Showed disapproval, judgment, or criticism of my eating choices.	1.17	$t(5) = -17.00$ ($p < .001$)	Autonomy-Limiting
27. Tried to make me feel guilty about my eating choices.	1.00	*Data are essentially constant*	Autonomy-Limiting
28. Tried to scare me about the consequences of unhealthy eating.	1.17	$t(5) = -17.00$ ($p < .001$)	Autonomy-Limiting
29. Withdrew or became silent when I made unhealthy eating choices.	1.50	$t(5) = -7.32$ ($p = .001$)	Autonomy-Limiting
30. Told me I would eat healthy if I cared about them.	1.00	*Data are essentially constant*	Autonomy-Limiting
31. Used humor or made jokes about my eating.	1.83	$t(5) = -7.05$ ($p = .001$)	Autonomy-Limiting
32. Withdrew affection when I made unhealthy eating choices.	1.17	$t(5) = -17.00$ ($p < .001$)	Autonomy-Limiting
33. Talked about my unhealthy eating choices to someone else or in front of someone else.	1.50	$t(5) = -11.18$ ($p < .001$)	Autonomy-Limiting
34. Disliked or made negative comments on my social media posts about my eating.	1.50	$t(5) = -11.18$ ($p < .001$)	Autonomy-Limiting
6. Category: My partner tried to make me feel good about my eating (e.g., made positive comments about my eating).			
35. Complimented or praised my eating choices	5.67	$t(5) = 5.00$ ($p = .004$)	Autonomy-Supporting
36. Encouraged me to eat healthier.	4.17	$t(5) = 0.31$ ($p = .771$)	Neutral
37. Expressed positive emotions (e.g., happiness, pride)	5.33	$t(5) = 2.70$	Autonomy-Supporting

about my eating choices.		(*p* = .043)	
38. Conveyed confidence or reassurance in my ability to make healthy choices	6.33	*t* (5) = 7.00 (*p* = .001)	Autonomy-Supporting
39. Talked about my healthy eating choices to someone else or in front of someone else.	4.00	*t* (5) = 0.00 (*p* = 1.00)	Neutral
40. Liked or made positive comments on my social media posts about my eating.	5.17	*t* (5) = 1.78 (*p* = .135)	Neutral
7. Category: My partner monitored my eating choices or reminded me to eat healthier (e.g., noticed what I ate, reminded me to make healthy choices).			
41. Left notes or reminders that I should eat healthier.	2.50	*t* (5) = -4.39 (*p* = .007)	Autonomy-Limiting
42. Nagged me to eat healthier.	1.67	*t* (5) = -11.07 (*p* < .001)	Autonomy-Limiting
43. Reminded me to eat healthier.	2.83	*t* (5) = -3.80 (*p* = .013)	Autonomy-Limiting
44. Noticed or commented on my eating choices.	2.67	*t* (5) = -4.00 (*p* = .010)	Autonomy-Limiting
45. Asked me what I ate today.	3.50	*t* (5) = -1.46 (*p* = .203)	Neutral
46. Dropped hints that I should eat healthier.	2.50	*t* (5) = -6.71 (*p* = .001)	Autonomy-Limiting
47. Pushed me to make healthy eating choices.	1.83	*t* (5) = -7.05 (*p* = .001)	Autonomy-Limiting
8. Category: My partner talked about my eating, their eating, or someone else's eating (e.g., asked me what I ate today, talked about what they ate today).			
48. Discussed my eating with me.	4.0	*t* (5) = 0.00 (*p* = 1.00)	Neutral
49. Asked me what I ate today.	4.0	*t* (5) = 0.00 (*p* = 1.00)	Neutral

50. Commented on someone else's eating (e.g., stranger, co-worker, friend).	3.67	$t(5) = -1.58$ ($p = .175$)	Neutral
51. Talked about what they ate today.	3.83	$t(5) = -1.00$ ($p = .363$)	Neutral
52. Talked about my eating choices to someone else or in front of someone else.	2.83	$t(5) = -2.91$ ($p = .033$)	Autonomy-Limiting
9 Category: My partner tried to persuade me to eat healthier (e.g., tried to change my attitudes about eating).			
53. Told me about how healthy eating could benefit me.	4.00	$t(5) = 0.00$ ($p = 1.00$)	Neutral
54. Told me about how unhealthy eating could hurt me.	2.33	$t(5) = -5.00$ ($p = .004$)	Autonomy-Limiting
55. Tried to reason with me/be logical about my eating.	2.67	$t(5) = -4.00$ ($p = .010$)	Autonomy-Limiting
56. Persuaded me to eat healthier.	1.83	$t(5) = -5.40$ ($p = .003$)	Autonomy-Limiting
57. Stated how important it is to them that I eat healthier.	1.83	$t(5) = -7.05$ ($p = .001$)	Autonomy-Limiting
58. Asked me to eat healthier.	2.17	$t(5) = -5.97$ ($p = .002$)	Autonomy-Limiting
59. Tried to involve other people to persuade me to eat healthier.	1.00	*Data are essentially constant*	Autonomy-Limiting
60. Bargained with me to get me to eat healthier	1.67	$t(5) = -7.00$ ($p = .001$)	Autonomy-Limiting

Table 20

Bivariate Correlations Between Key Study 2 Variables and Covariates

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Autonomy-Limiting SC (Dichotomous)	1												
2. Autonomy-Supporting SC (Dichotomous)	.05*	1											
3. Relational Behaviors	.06**	.14**	1										
4. Eating Behaviors	.04	.11**	.11**	1									
5. Healthiness of Eating	.02	.07**	.02	.47**	1								
6. Perception of Partner Motives	.15**	.23**	.15**	.07**	.10**	1							
7. Gender	-.02	-.00	-.03	.06*	-.04	-.06*	1						
8. Cohabitation Length	.01	.00	-.02	-.04	-.02	-.08**	-.02	1					
9. PRQC	-.02	.05	.22**	.14**	.06**	.17**	-.11**	-.14**	1				
10. Interest in Improving Eating	.12**	.10**	-.02	.01	-.01	-.02	.18**	.03	-.11**	1			
11. Meals Eaten with Partner Per week	.08**	.06*	.04	-.00	-.03	.00	-.09**	-.10**	.08**	.15**	1		
12. Social Control Norms	.07**	.08*	.09**	.10**	.05*	.18**	-.21**	-.16**	.29**	-.01	.03	1	
13. COVID Participant	-.03	.05*	-.01	.012	.04	.05	-.11**	-.07**	.04	-.14**	.04	.09**	1

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. PRQC = Perceived Relationship Quality Components Inventory.

Table 21

Intraclass Correlations and Design Effect Estimates for Study 2 Outcomes

	ICC	Design Effect Estimate
Relational Behaviors	0.25	4.22
Healthiness of Eating	0.05	1.64
Eating Behavior	0.35	5.49
Autonomy-Limiting SC (Dichotomous)	0.09	2.18
Autonomy-Supporting SC (Dichotomous)	0.20	3.59

Note. ICC = Intraclass Correlation.

Table 22

Synchronous Effects of Motive Perceptions and Autonomy-Supporting Social Control on Relational Behaviors (Hypothesis 5a)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	0.38*** (0.01) [0.35, 0.41]	0.40*** (0.02) [0.37, 0.43]
Autonomy Support	0.03 (0.02) [-0.01, 0.06]	0.03 (0.02) [-0.01, 0.06]
Perception of Partner Motives	0.03** (0.01) [0.01, 0.05]	0.03* (0.01) [0.01, 0.04]
Autonomy Support x Motives	-0.03 (0.02) [-0.08, 0.01]	-0.04 (0.02) [-0.08, 0.01]
PRQC	--	0.05*** (0.02) [0.02, 0.09]
Improve	--	-0.01 (0.02) [-0.04, 0.03]
Meals	--	0.00 (0.00) [-0.01, 0.01]
Social Control Norms	--	0.02 (0.02) [-0.02, 0.05]
COVID-19 Timing	--	-0.02 (0.02) [-0.06, 0.01]
Model Summary		
Log Likelihood	-212.75	-216.48
AIC	443.51	460.96
Marginal R2	0.01	0.05

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard

error. PRQC = Perceived Relationship Quality Components inventory.

Table 23

Lagged Effects of Motive Perceptions and Autonomy-Supporting Social Control on Relational Behaviors (Hypothesis 5a)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	0.35*** (0.01) [0.32, 0.38]	0.36*** (0.02) [0.33, 0.39]
Autonomy Support (day *t*)	-0.01 (0.02) [-0.05, 0.03]	-0.01 (0.02) [-0.05, 0.03]
Perception of Partner Motives (day *t*)	0.02* (0.01) [0.00, 0.04]	0.02† (0.01) [-0.00, 0.04]
Relational Behaviors (day *t*)	0.13*** (0.03) [0.07, 0.19]	0.09** (0.03) [0.03, 0.15]
Autonomy Support x Motives (day *t*)	-0.02 (0.02) [-0.06, 0.01]	-0.02 (0.02) [-0.06, 0.02]
PRQC	-	0.06** (0.02) [0.03, 0.09]
Improve	-	-0.01 (0.02) [-0.04, 0.03]
Meals	-	0.00 (0.00) [-0.01, 0.01]
Social Control Norms	-	0.00 (0.02) [-0.03, 0.04]
COVID-19 Timing	-	-0.02 (0.02) [-0.04, 0.02]
Model Summary		
Log Likelihood	-273.40	-279.48
AIC	562.81	584.96
Marginal R2	0.02	0.05

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard error. PRQC = Perceived Relationship Quality Components inventory.

Table 24

Synchronous Effects of Motive Perceptions and Autonomy-Limiting Social Control on Relational Behaviors (Hypothesis 5b)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	0.38*** (0.01) [0.35, 0.41]	0.40*** (0.02) [0.36, 0.43]
Autonomy Limiting	0.02 (0.02) [-0.02, 0.06]	0.02 (0.02) [-0.02, 0.06]
Perception of Partner Motives	0.03* (0.01) [0.01, 0.04]	0.02* (0.01) [0.01, 0.04]
Autonomy Limiting x Motives	0.03 (0.03) [-0.02, 0.08]	0.02 (0.03) [-0.03, 0.72]
PRQC	-	0.06** (0.02) [0.03, 0.09]
Improve	-	-0.01 (0.02) [-0.04, 0.03]
Meals	-	0.00 (0.00) [-0.01, 0.01]
Social Control Norms	-	0.02 (0.02) [-0.02, 0.05]
COVID-19 Timing	-	-0.02 (0.02) [-0.06, 0.01]
Model Summary		
Log Likelihood	-213.22	-216.92
AIC	440.44	457.84
Marginal R2	0.01	0.05

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard error. PRQC = Perceived Relationship Quality Components inventory.

Table 25

Lagged Effects of Motive Perceptions and Autonomy-Limiting Social Control on Relational Behaviors (Hypothesis 5b)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	0.35*** (0.01) [0.32, 0.38]	0.36*** (0.02) [0.32, 0.39]
Autonomy Limiting (day *t*)	-0.02 (0.02) [-0.06, 0.02]	-0.02 (0.02) [-0.06, 0.02]
Perception of Partner Motives (day *t*)	0.02† (0.01) [-0.00, 0.04]	0.01 (0.01) [-0.00, 0.03]
Relational Behaviors (day *t*)	0.13*** (0.03) [0.07, 0.19]	0.09** (0.03) [0.03, 0.15]
Autonomy Limiting x Motives	0.01 (0.02) [-0.03, 0.05]	0.01 (0.02) [-0.03, 0.05]
PRQC	-	0.06** (0.02) [-.03, 0.09]
Improve	-	-0.00 (0.02) [-0.04, 0.03]
Meals	-	0.00 (0.00) [-0.01, 0.01]
Social Control Norms	-	0.01 (0.02) [-0.03, 0.04]
COVID-19 Timing	-	-0.01 (0.02) [-0.05, 0.02]
Model Summary		
Log Likelihood	-273.92	-279.72
AIC	563.84	585.43
Marginal R2	0.02	0.05

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard error. PRQC = Perceived Relationship Quality Components inventory.

Table 26

Synchronous Effects of Motive Perceptions and Autonomy-Supporting Social Control on Healthiness of Eating (Hypothesis 6a)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	-0.31*** (0.06) [-0.42, -0.19]	-0.30* (0.15) [-0.59, -0.02]
Day	0.02** (0.01) [0.01, 0.04]	0.02** (0.01) [0.01, 0.04]
Autonomy Supporting SC	0.02 (0.09) [-0.07, 0.30]	0.12 (0.09) [-0.07, 0.30]
Perception of Partner Motives	0.11** (0.04) [0.03, 0.19]	0.09* (0.04) [0.02, 0.18]
Autonomy Supporting x Motives	-0.02 (0.10) [-0.21, 0.18]	-0.03 (0.10) [-0.23, 0.17]
Gender	-	-0.03 (0.07) [-0.17, 0.11]
PRQC	-	0.02** (0.05) [0.03, 0.21]
Improve	-	0.00 (0.04) [-0.08, 0.09]
Meals	-	-0.02 (0.01) [-0.04, 0.01]
Social Control Norms	-	0.01 (0.04) [-0.07, 0.10]
COVID-19 Timing	-	0.08† (0.04) [-0.00, 0.17]
Model Summary		
Log Likelihood	-2097.80	-2076.4
AIC	4213.70	4182.80
Marginal R2	0.01	0.03

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard error. PRQC = Perceived Relationship Quality Components inventory.

Table 27

Lagged Effects of Motive Perceptions and Autonomy-Supporting Social Control on Healthiness of Eating (Hypothesis 6a)

	Without Covariates	With Covariates
Predictor	Estimate (S.E.) [95% CI]	Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	-0.25*** (0.06) [-0.37, -0.13]	-0.32* (0.15) [-0.63, -0.02]
Day	0.02* (0.01) [0.00, 0.04]	0.02* (0.01) [0.00, 0.03]
Autonomy Supporting SC (day *t*)	-0.00 (0.07) [-0.15, 0.14]	-0.01 (0.07) [-0.16, 0.14]
Perception of Partner Motives (day *t*)	0.04 (0.03) [-0.03, 0.11]	0.03 (03) [-0.04, 0.09]
Healthiness of eating (day *t*)	0.05† (0.03) [-0.00, 0.11]	0.06* (0.03) [0.00, 0.12]
Autonomy Supporting x Motives	0.03 (0.07) [-0.12, 0.17]	0.04 (0.07) [-0.10, 0.19]
Gender	-	0.03 (0.08) [-0.12, 0.18]
PRQC	-	0.11* (0.05) [0.01, 0.20]
Improve	-	0.02 (0.05) [-0.07, 0.11]
Meals	-	-0.01 (0.01) [-0.03, 0.02]
Social Control Norms	-	0.05 (0.04) [-0.03, 0.14]
COVID-19 Timing	-	0.02 (0.05) [-0.07, 0.12]
Model Summary		
Log Likelihood	-1894.30	-1877.50
AIC	3804.70	3783.00
Marginal R2	0.01	0.02

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard error. PRQC = Perceived Relationship Quality Components inventory.

Table 28

Synchronous Effects of Motive Perceptions and Autonomy-Supporting Social Control on Eating Behavior (Hypothesis 6a)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	1.65*** (0.15) [1.36, 1.93]	0.96* (0.47) [0.04, 1.88]
Day	0.05*** (0.01) [0.02, 0.07]	0.05*** (0.01) [0.02, 0.07]
Autonomy Supporting SC	0.22 (0.14) [-0.05, 0.49]	0.22 (0.14) [-0.05, 0.49]
Perception of Partner Motives	0.10 (0.07) [-0.04, 0.23]	0.08 (0.07) [-0.05, 0.22]
Autonomy Supporting x Motives	0.12 (0.17) [-0.21, 0.46]	0.10 (0.17) [-0.24, 0.44]
Gender	-	0.33 (0.24) [-0.14, 0.81]
PRQC	-	0.39* (0.15) [0.10, 0.68]
Improve	-	0.06 (0.15) [-0.23, 0.35]
Meals	-	-0.01 (0.04) [-0.09, 0.06]
Social Control Norms	-	0.20 (0.14) [-0.08, 0.47]
COVID-19 Timing	-	0.18 (0.15) [-0.12, 0.47]
Model Summary		
Log Likelihood	-2892.171	-2875.06
AIC	5800.34	5778.12
Marginal R2	0.01	0.05

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard error. PRQC = Perceived Relationship Quality components inventory.

Table 29

Lagged Effects of Motive Perceptions and Autonomy-Supporting Social Control on Eating Behavior (Hypothesis 6a)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	1.71*** (0.13) [1.46, 1.96]	1.18** (0.40) [0.39, 1.97]
Day	0.04** (0.01) [0.02, 0.07]	0.05** (0.01) [0.02, 0.07]
Autonomy Supporting SC (day t)	-0.04 (0.14) [-0.31, 0.23]	-0.05 (0.14) [-0.32, 0.21]
Perception of Partner Motives (day t)	0.04 (0.06) [-0.09, 0.17]	0.02 (0.06) [-0.11, 0.15]
Eating behaviors (day t)	0.22*** (0.03) [0.17, 0.27]	0.21*** (0.03) [0.16, 0.26]
Autonomy Supporting x Motives	-0.15 (0.13) [-0.40, 0.11]	-0.12 (0.13) [-0.38, 0.14]
Gender	-	0.27 (0.20) [-0.13, 0.68]
PRQC	-	0.32* (0.13) [0.07, 0.57]
Improve	-	0.05 (0.13) [-0.20, 0.30]
Meals	-	0.01 (0.03) [-0.06, 0.07]
Social Control Norms	-	0.16 (0.12) [-0.08, 0.39]
COVID-19 Timing	-	0.08 (0.13) [-0.17, 0.33]
Model Summary		
Log Likelihood	-2645.88	-2629.58
AIC	5309.77	5289.16
Marginal R2	0.06	0.09

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard error. PRQC = Perceived Relationship Quality components inventory.

Table 30

Synchronous Effects of Motive Perceptions and Autonomy-Limiting Social Control on Healthiness of Eating (Hypothesis 6b)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	-0.29*** (0.06) [-0.41, -0.17]	-0.24 (0.15) [-0.53, 0.06]
Day	0.02** (0.01) [0.01, 0.04]	0.02** (0.01) [0.01, 0.04]
Autonomy Limiting SC	0.02 (0.08) [-0.15, 0.18]	0.04 (0.08) [-0.12, 0.21]
Perception of Partner Motives	0.12** (0.04) [0.04, 0.20]	0.11** (0.04) [0.03, 0.19]
Autonomy Limiting x Motives	-0.14 (0.10) [-0.35, 0.06]	-0.15 (0.10 [-0.36, 0.05]
Gender	-	-0.05 (0.07) [-0.20, 0.09]
PRQC	-	0.12* (0.05) [0.03, 0.21]
Improve	-	0.03 (0.05) [-0.06, 0.12]
Meals	-	-0.02 (0.01) [-0.04, -.00]
Social Control Norms	-	0.02 (0.04) [-0.06, 0.11]
COVID-19 Timing	-	0.08† (0.05) [-0.01, 0.17]
Model Summary		
Log Likelihood	-2103.50	-2081.70
AIC	4221.00	4189.40
Marginal R2	0.01	0.03

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard

error. PRQC = Perceived Relationship Quality components inventory.

Table 31

Lagged Effects of Motive Perceptions and Autonomy-Limiting Social Control on Healthiness of Eating (Hypothesis 6b)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	-0.24*** (0.06) [-0.36, -0.13]	-0.31* (0.15) [-0.62, -0.00]
Day	0.02* (0.01) [0.00, 0.03]	0.02* (0.01) [0.00, 0.03]
Autonomy Limiting SC (day t)	0.15† (0.08) [-0.01, 0.31]	0.14† (0.08) [-0.02, 0.31]
Perception of Partner Motives (day t)	0.04 (0.03) [-0.03, -0.11]	0.03 (0.03) [-0.02, 0.31]
Healthiness of eating (day t)	0.05† (0.03) [-0.01, 0.11]	0.06* (0.03) [-0.00, 0.11]
Autonomy Limiting x Motives	-0.14† (0.08) [-0.29, 0.02]	-0.12 (0.08) [-0.28, 0.03]
Gender	-	0.03 (0.08) [-0.12, 0.18]
PRQC	-	0.11* (0.05) [0.02, 0.21]
Improve	-	0.02 (0.05) [-0.08, 0.11]
Meals	-	-0.01 (0.01) [-0.03, 0.02]
Social Control Norms	-	0.05 (0.04) [-0.04, 0.14]
COVID-19 Timing	-	0.03 (0.05) [-0.07, 0.12]
Model Summary		
Log Likelihood	-1891.80	-1875.40
AIC	3799.60	3778.70
Marginal R2	0.01	0.03

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard

error. PRQC = Perceived Relationship Quality components inventory.

Table 32

Synchronous Effects of Motive Perceptions and Autonomy-Limiting Social Control on Eating Behavior (Hypothesis 6b)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	1.69*** (0.15) [1.41, 1.98]	1.01* (0.47) [0.09, 1.93]
Day	0.05** (0.01) [0.02, 0.07]	0.05** (0.01) [0.02, 0.07]
Autonomy Limiting SC	0.17 (0.14) [-0.10, 0.44]	0.20 (0.14) [-0.07, 0.48]
Perception of Partner Motives	0.13† (0.07) [0.00, 0.26]	0.12† (0.07) [-0.01, 0.25]
Autonomy Limiting x Motives	-0.30† (0.18) [-0.66, 0.05]	-0.32† (0.18) [-0.68, 0.04]
Gender	-	0.33 (0.24) [-0.15, 0.80]
PRQC	-	0.39* (0.15) [0.10, 0.68]
Improve	-	0.06 (0.15) [-0.23, 0.35]
Meals	-	-0.01 (0.04) [-0.09, 0.06]
Social Control Norms	-	0.20 (0.14) [-0.07, 0.47]
COVID-19 Timing	-	0.18 (0.15) [-0.11, 0.48]
Model Summary		
Log Likelihood	-2892.14	-2874.43
AIC	5800.27	5776.85
Marginal R2	0.01	0.05

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard error. PRQC = Perceived Relationship Quality components inventory.

Table 33

Lagged Effects of Motive Perceptions and Autonomy-Limiting Social Control on Eating Behavior (Hypothesis 6b)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	1.68*** (0.13) [1.43, 1.93]	1.15** (0.41) [0.36, 1.95]
Day	0.04*** (0.01) [0.02, 0.07]	0.05*** (0.01) [0.02, 0.07]
Autonomy Limiting SC (day t)	0.27† (0.14) [-0.01, 0.55]	0.26† (0.14) [-0.02, 0.54]
Perception of Partner Motives (day t)	0.01 (0.06) [0.16, 0.26]	-0.01 (0.06) [-0.13, 0.11]
Eating behavior (day t)	0.21*** (0.03) [0.16, 0.26]	0.20*** (0.03) [0.15, 0.26]
Autonomy Limiting x Motives	-0.07 (0.14) [-0.35, 0.20]	-0.04 (0.14) [-0.32, 0.23]
Gender	-	0.26 (0.21) [-0.14, 0.68]
PRQC	-	0.34* (0.13) [0.09, 0.59]
Improve	-	0.04 (0.13) [-0.21, 0.29]
Meals	-	0.01 (0.03) [-0.06, 0.07]
Social Control Norms	-	0.15 (0.12) [-0.09, 0.38]
COVID-19 Timing	-	-0.04 (0.13) [-0.17, 0.34]
Model Summary		
Log Likelihood	-2644.69	-2628.38
AIC	5307.37	5286.75
Marginal R2	0.06	0.09

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard error. PRQC = Perceived Relationship Quality components inventory.

Table 34

Lagged Effects of Relational Behaviors on Autonomy-Supporting Social Control (Research Question 6)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	0.22*** (0.02) [0.18, 0.25]	0.21*** (0.02) [0.17, 0.25]
Relational Behaviors (day *t*)	-0.05 (0.03) [-0.11, 0.02]	-0.05 (0.03) [-0.11, 0.02]
Autonomy Supporting SC (day *t*)	-0.07** (0.02) [-0.11, -0.02]	-0.07** (0.02) [-0.11, -0.02]
PRQC	-	0.01 (0.02) [-0.03, 0.06]
Improve	-	0.04* (0.02) [0.00, 0.09]
Meals	-	0.00 (0.01) [-0.01, 0.02]
Social Control Norms	-	0.03 (0.02) [-0.01, 0.07]
COVID-19 Timing	-	0.02 (0.02) [-0.03, 0.06]
Model Summary		
Log Likelihood	-821.60	-813.50
AIC	1653.10	1647.00
Marginal R2	0.004	0.02

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard error. PRQC = Perceived Relationship Quality components inventory.

Table 35

Lagged Effects of Relational Behaviors on Autonomy-Limiting Social Control (Research Question 6)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	0.15*** (0.02) [0.12, 0.19]	0.16*** (0.02) [0.13, 0.20]
Relational Behaviors (day t)	0.02 (0.03) [-0.04, 0.08]	0.03 (0.03) [-0.04, 0.09]
Day	-0.00 (0.00) [-0.00, 0.00]	-0.00 (0.00) [-0.00, 0.00]
Autonomy Limiting SC (day t)	-0.11*** (0.03) [-0.16, -0.06]	-0.11*** (0.03) [-0.16, -0.06]
PRQC	-	-0.02 (0.01) [-0.05, 0.01]
Improve	-	0.05** (0.01) [0.02, 0.07]
Meals	-	0.01* (0.00) [0.00, 0.01]
Social Control Norms	-	0.03* (0.03) [0.01, 0.06]
COVID-19 Timing	-	-0.01 (0.01) [-0.04, 0.01]
Model Summary		
Log Likelihood	-656.30	- 640.90
AIC	1324.70	1303.80
Marginal R2	0.01	0.04

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard

error. PRQC = Perceived Relationship Quality components inventory.

Table 36

Lagged Effects of Eating on Autonomy-Supporting Social Control (Research Question 7)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	0.22*** (0.02) [0.18, 0.25]	0.17* (0.01) [0.04, 0.30]
Eating Behaviors (day *t*)	-0.01† (0.01) [-0.02, -0.00]	-0.01* (0.01) [-0.03, -0.00]
Healthiness of Eating (day *t*)	-0.00 (0.01) [-0.02, 0.02]	-0.00 (0.01) [-0.02, 0.02]
Autonomy-Supporting SC (day *t*)	-0.06** (0.02) [-0.11, -0.02]	-0.01** (0.02) [-0.11, -0.02]
Gender	-	0.02 (0.04) [-0.05, 0.09]
PRQC	-	0.01 (0.02) [-0.03, 0.06]
Improve	-	0.04* (0.02) [0.00, 0.08]
Meals	-	0.01 (0.01) [0.01, 0.02]
Social Control Norms	-	0.03 (0.02) [-0.01, 0.07]
COVID-19 Timing	-	0.02 (0.02) [-0.02, 0.06]
Model Summary		
Log Likelihood	-818.00	-809.60
AIC	1648.00	1643.30
Marginal R2	0.01	0.03

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard

error. PRQC = Perceived Relationship Quality Components inventory.

Table 37

Lagged Effects of Eating on Autonomy-Limiting Social Control (Research Question 7)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	0.15*** (0.02) [0.12, 0.19]	0.21*** (0.05) [011, 0.30]
Day	-0.00 (0.00) [-0.00, -0.00]	-0.00 (0.00) [-0.00, 0.00]
Eating Behaviors (day *t*)	-0.00 (0.01) [-0.01, 0.01]	-0.00 (0.01) [-0.01, 0.11]
Healthiness of Eating (day *t*)	-0.00 (0.01) [-0.02, 0.02]	-0.00 (0.01) [-0.02, 0.02]
Autonomy-Limiting SC (day *t*)	-0.11*** (0.03) [-0.15, -0.06]	-0.11*** (0.03) [-0.16, -0.06]
Gender	-	-0.02 (0.02) [-0.07, 0.02]
PRQC	-	-0.02 (0.01) [-0.05, 0.01]
Improve	-	0.05*** (0.01) [0.02, 0.08]
Meals	-	0.01† (0.00) [-0.00, 0.01]
Social Control Norms	-	0.03* (0.01) [0.00, 0.06]
COVID-19 Timing	-	-0.02 (0.01) [-0.05, 0.01]
Model Summary		
Log Likelihood	-656.40	-640.50
AIC	1326.80	1307.10
Marginal R2	0.01	0.04

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard

error. PRQC = Perceived Relationship Quality components inventory.

Table 38

Lagged Effects of Relationship Quality and Relational Behaviors on Autonomy-Supporting Social Control (Research Question 8)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	0.22*** (0.02) [0.18, 0.25]	0.21*** (0.02) [0.17, 0.25]
Relational Behaviors (day *t*)	-0.05 (0.03) [-0.12, 0.02]	-0.05 (0.03) [-0.12, -.02]
Autonomy Supporting SC (day *t*)	-0.07** (0.02) [-0.11, -0.02]	-0.07** (0.02) [-0.11, -0.02]
PRQC	0.02 (0.02) [-0.02, 0.06]	0.01 (0.02) [-0.03, 0.06]
PRQC x Relational Behaviors	-0.01 (0.03) [-0.07, 0.05]	-0.01 (0.03) [-0.08, 0.05]
Improve	-	0.04* (0.02) [0.00, 0.09]
Meals	-	0.00 (0.01) [-0.01, 0.02]
Social Control Norms	-	0.03 (0.02) [-0.01, 0.07]
COVID-19 Timing	-	0.02 (0.02) [-0.03, 0.06]
Model Summary		
Log Likelihood	-821.00	-813.40
AIC	1656.10	1648.80
Marginal R2	0.01	0.02

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard error. PRQC = Perceived Relationship Quality components inventory.

Table 39

Lagged Effects of Relationship Quality and Relational Behaviors on Autonomy-Limiting Social Control (Research Question 8)

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	0.15*** (0.02) [0.12, 0.19]	0.16*** (0.02) [0.13, 0.20]
Day	-0.00 (0.00) [-0.00, 0.00]	-0.00 (0.00) [-0.00, 0.00]
Relational Behaviors (day *t*)	-0.02 (0.03) [-0.04, 0.09]	0.03 (0.03) [-0.04, 0.09]
Autonomy Limiting SC (day *t*)	-0.11*** (0.03) [-0.16, -0.06]	-0.11*** (0.03) [-0.16, -0.06]
PRQC	-0.01 (0.01) [-0.04, 0.01]	-0.02 (0.01) [-0.05, 0.01]
PRQC x Relational Behaviors	-0.04 (0.03) [-0.09, 0.01]	-0.04 (0.03) [-0.09, 0.01]
Improve	-	0.05** (0.01) [0.02, 0.07]
Meals	-	0.01† (0.00) [0.00, 0.01]
Social Control Norms	-	0.03* (0.01) [0.01, 0.06]
COVID-19 Timing	-	-0.01 (0.01) [-0.04, 0.01]
Model Summary		
Log Likelihood	-654.90	-639.90
AIC	1325.70	1303.70
Marginal R2	0.01	0.04

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard error. PRQC = Perceived Relationship Quality components inventory.

Table 40

Synchronous Effects of Autonomy-Supporting Social Control, Autonomy-Limiting Social Control, and Time on Relational Behaviors

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	0.35*** (0.02) [0.31, 0.38]	0.35*** (0.02) [0.32, 0.39]
Day	0.00 (0.00) [-0.00, 0.00]	0.00 (0.00) [-0.00, 0.00]
Autonomy Supporting SC	0.09** (0.03) [0.03, 0.15]	0.09* (0.03) [0.03, 0.15]
Autonomy Limiting SC	0.03 (0.04) [-0.04, 0.11]	0.03 (0.04) [-0.94, 0.10]
Autonomy-Supporting SC x Day	-0.00 (0.00) [-0.01, 0.01]	-0.00 (0.00) [-0.01, 0.01]
Autonomy-Limiting SC x Day	-.00 (0.00) [-0.01, 0.01]	0.00 (0.00) [-0.00, 0.01]
Autonomy-Supporting SC x Autonomy-Limiting SC	-.07 (0.09) [-0.11, 0.24]	0.08 (0.09) [-0.10, 0.25]
Autonomy-Supporting SC x Autonomy-Limiting SC x Day	-0.00 (0.01) [-0.03, 0.02]	-0.00 (0.01) [-0.03, 0.02]
PRQC	-	0.08*** (0.02) [0.05, 0.11]
Improve	-	-0.00 (0.02) [-0.04, 0.03]
Meals	-	0.00 (0.00) [-0.01, 0.11]
Social Control Norms	-	0.01) (0.02) [-0.02, 0.04]
COVID-19 Timing	-	-0.02 (0.02) [-0.05, 0.01]
Model Summary		
Log Likelihood	-361.60	-358.71
AIC	745.19	749.42
Marginal R2	0.01	0.06

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard

error. PRQC = Perceived Relationship Quality components inventory.

Table 41

Synchronous Effects of Autonomy-Supporting Social Control, Autonomy-Limiting Social Control, and Time on Healthiness of Eating

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	-0.31*** (0.05) [-0.41, -0.21]	-0.25† (0.13) [-0.50, 0.00]
Day	0.02*** (0.01) [-0.01, 0.03]	0.02*** (0.01) [0.01, 0.03]
Autonomy Supporting SC	0.29* (0.12) [0.04, 0.53]	0.28* (0.12) [0.03, 0.52]
Autonomy Limiting SC	0.04 (0.14) [-0.24, 0.32]	0.02 (0.14) [-0.26, 0.30]
Autonomy-Supporting SC x Day	-0.02 (0.02) [-0.06, 0.02]	-0.02 (0.02) [-0.05, 0.01]
Autonomy-Limiting SC x Day	0.00 (0.02) [-0.03, 0.04]	0.01 (0.02) [-0.03, 0.04]
Autonomy-Supporting SC x Autonomy-Limiting SC	0.78* (0.34) [0.10, 1.45]	0.81* (0.34) [0.13, 1.48]
Autonomy-Supporting SC x Autonomy-Limiting SC x Day	-0.06 (0.05) [-0.15, 0.04]	-0.06 (0.05) [-0.16, 0.04]
Gender	-	-0.05 (0.06) [-017, 0.07]
PRQC	-	0.07† (0.04) [-0.01, 0.14]
Improve	-	0.02 (0.04) [-0.05, 0.10]
Meals	-	-0.01 (0.01) [-0.03, 0.01]
Social Control Norms	-	0.04 (0.04) [-0.03, 0.11]
COVID-19 Timing	-	0.05 (0.04) [-0.03, 0.13]
Model Summary		
Log Likelihood	-2082.50	-2775.80
AIC	5625.00	5583.50
Marginal R2	0.01	0.02

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard

error. PRQC = Perceived Relationship Quality components inventory.

Table 42

Synchronous Effects of Autonomy-Supporting Social Control, Autonomy-Limiting Social Control, and Time on Eating Behaviors

Predictor	Without Covariates Estimate (S.E.) [95% CI]	With Covariates Estimate (S.E.) [95% CI]
Fixed Effects		
Intercept	1.63*** (0.13) [1.37, 1.90]	0.86† (0.45) [-0.02, 1.75]
Day	0.04*** (0.01) [0.02, 0.06]	0.04*** (0.01) [0.02, 0.06]
Autonomy Supporting SC	0.47* (0.22) [0.04, 0.89]	0.44* (0.22) [0.01, 0.86]
Autonomy Limiting SC	0.26 (0.25) [-0.22, 0.74]	0.24 (0.24) [-0.24, 0.72]
Autonomy-Supporting SC x Day	-0.02 (0.03) [-0.08, 0.04]	-0.02 (0.03) [-0.08, 0.04]
Autonomy-Limiting SC x Day	-0.01 (0.03) [-0.07, 0.06]	0.00 (0.03) [-0.06, 0.06]
Autonomy-Supporting SC x Autonomy-Limiting SC	0.75 (0.09) [-0.43, 1.92]	0.80 (0.60) [-0.37, 1.97]
Autonomy-Supporting SC x Autonomy-Limiting SC x Day	-0.08 (0.09) [-0.25, 0.10]	-0.08 (0.09) [-0.25, 0.09]
Gender	-	0.39† (0.23) [-0.06, 0.84]
PRQC	-	0.36** (0.14) [0.09, 0.63]
Improve	-	0.07 (0.14) [-0.20, -.35]
Meals	-	-0.01 (0.04) [-0.08, 0.06]
Social Control Norms	-	-0.01 (0.04) [-0.07, 0.45]
COVID-19 Timing	-	0.19 (0.13) [-0.13, 0.43]
Model Summary		
Log Likelihood	-3930.30	-3891.00
AIC	7880.70	7814.00
Marginal R2	0.01	0.04

Note. * p < .05, ** p < .01, ***p < .001, † p < .10. AIC = Akaike information criterion. CI = Confidence interval. S.E. = Standard error. PRQC = Perceived Relationship Quality components inventory.
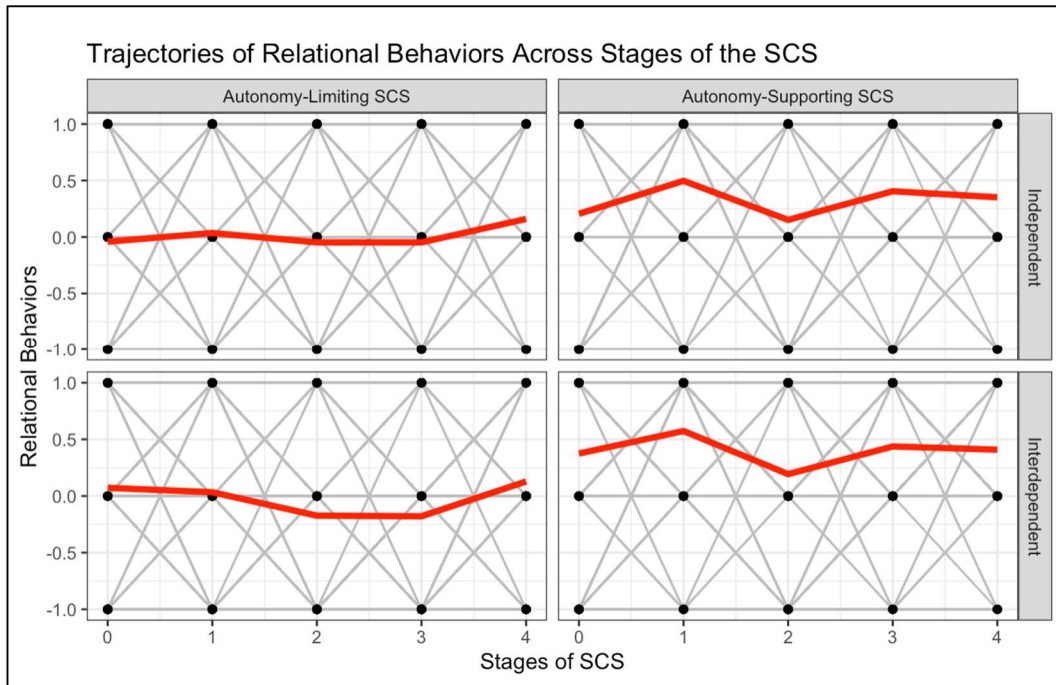
Figure 1

Hypothesized Patterns of Responses by Strategy Type and Motive Type
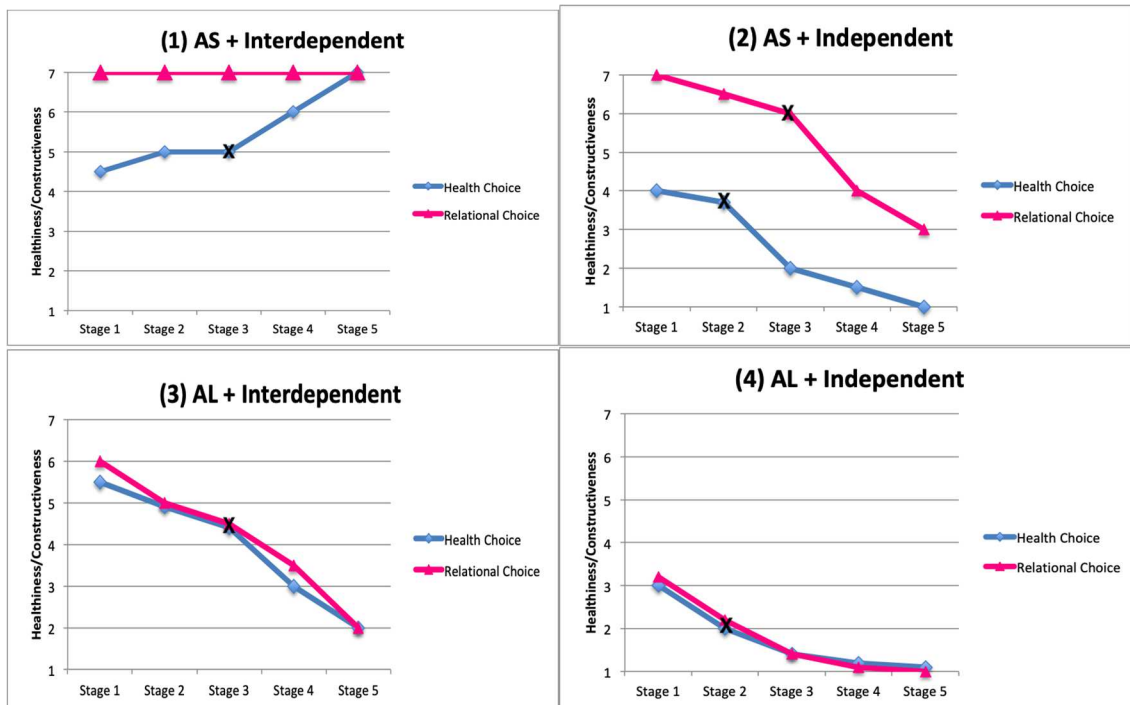
Note. Hypothesized patterns of responses for autonomy supporting strategies + interdependent motives (Quadrant 1; $n = 176$), autonomy supporting strategies + independent motives (Quadrant 2; $n = 179$), autonomy limiting strategies + interdependent motives (Quadrant 3; $n = 179$), and autonomy limiting strategies + independent motives (Quadrant 4; $n = 169$). The bolded "X" denotes the inflection point.
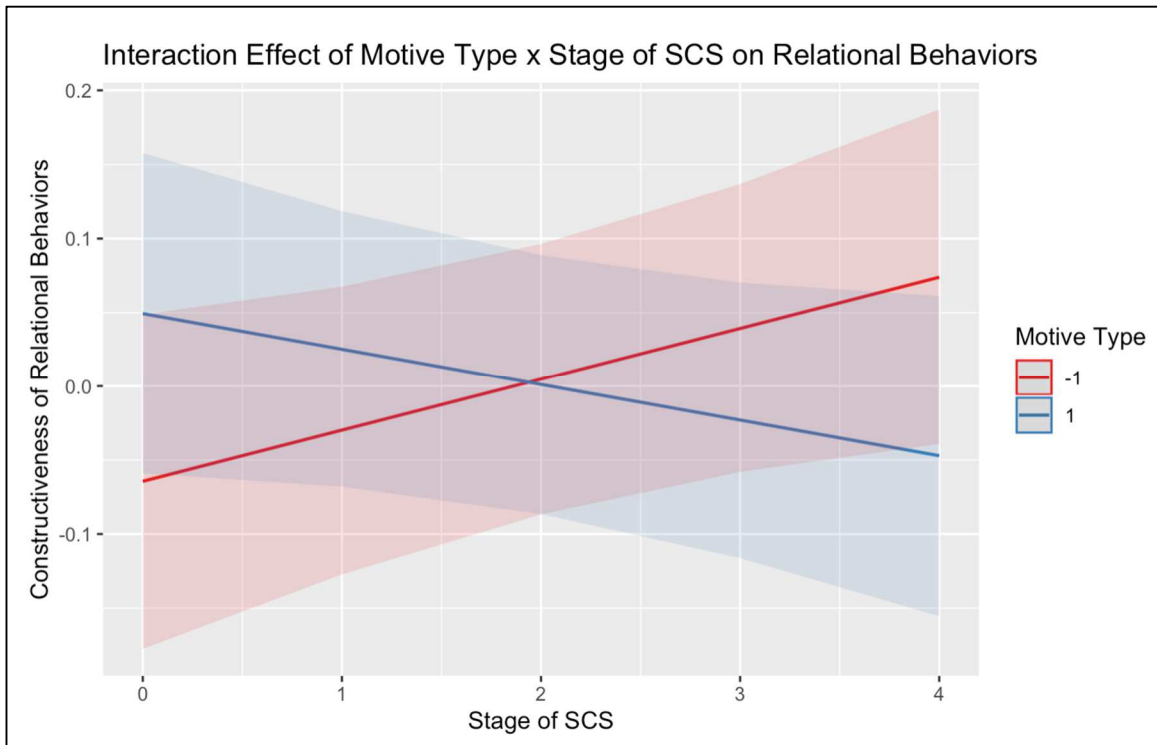
Figure 2

Mean Constructiveness of Relational Behaviors Across the Social Control Scenario by

Strategy Type and Motive Type

Note. SCS = Social Control Scenario. Relational behaviors are coded such that -1 = destructive behaviors, 0 = neutral behaviors, 1 = constructive behaviors.
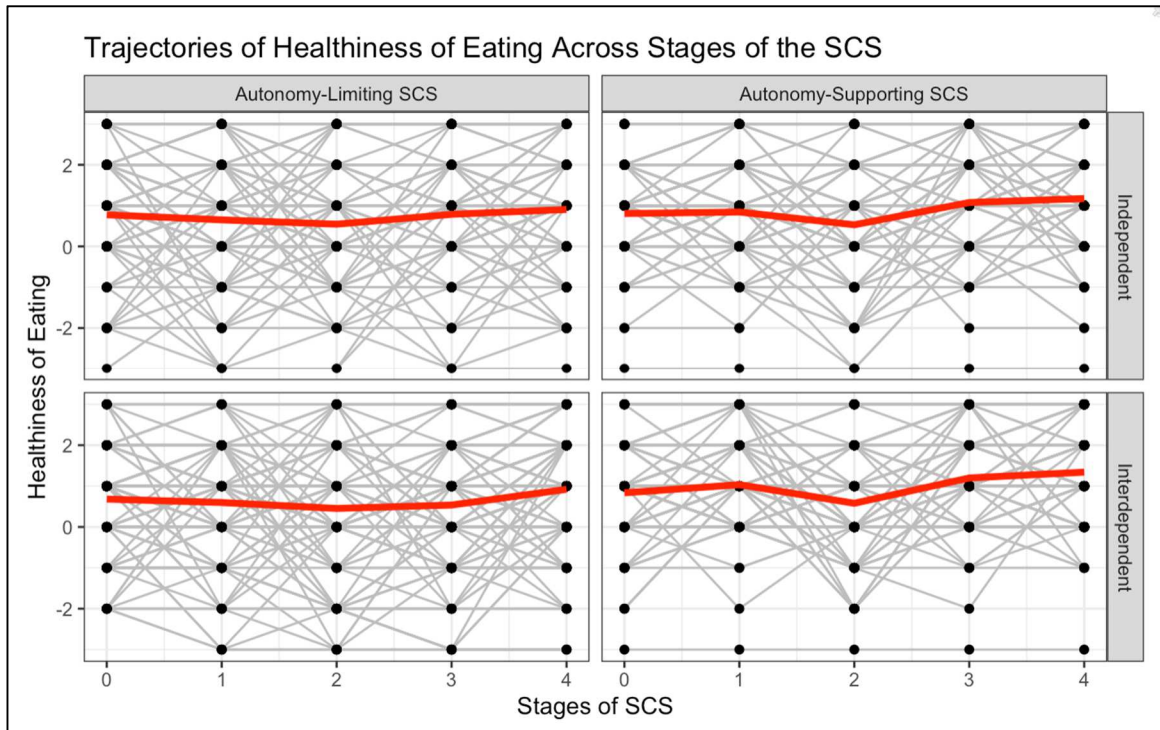
Figure 3

Effect of Motive Type and Stage of SCS on Relational Behaviors (Hypothesis 1b)

Note. SCS = Social Control Scenario. Relational behaviors are coded such that -1 = destructive behaviors, 0 = neutral behaviors, 1 = constructive behaviors. Motive Type is coded such that -1 = independent motive and 1 = interdependent motive.
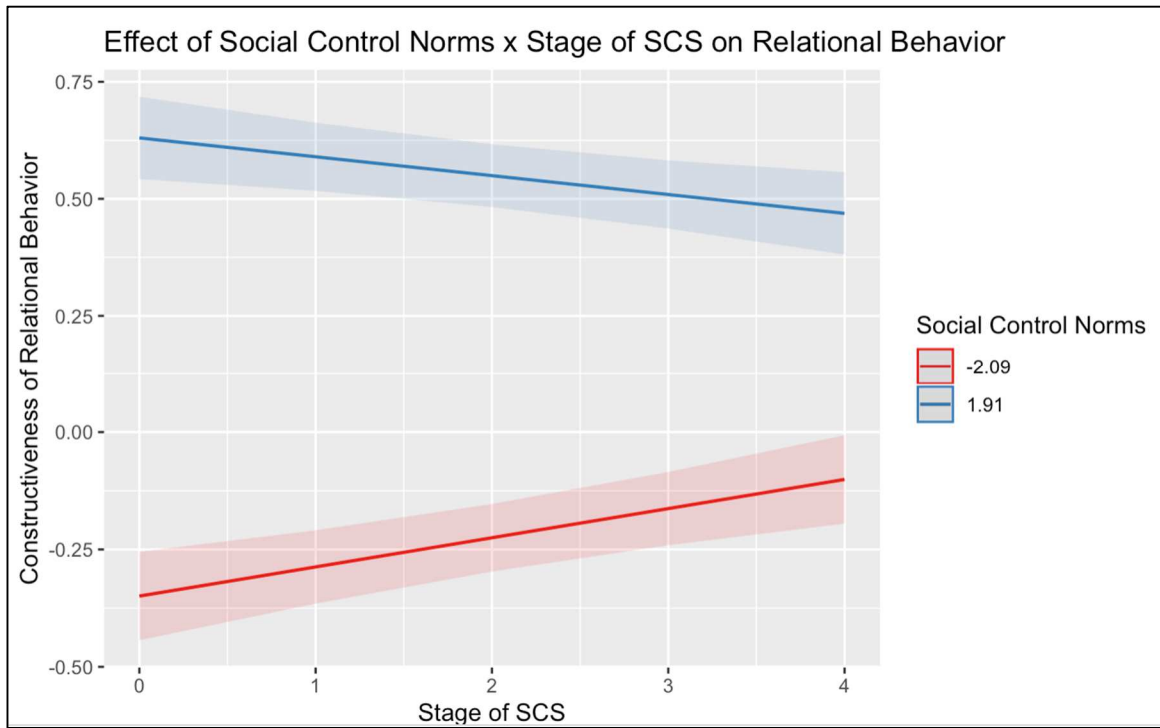
Figure 4

Mean Healthiness of Eating Across the Social Control Scenario by Strategy Type and

Motive Type

Note. SCS = Social Control Scenario. Healthiness of eating is coded such that values below zero indicate less healthy than usual eating, zero indicates as healthy as usual eating, values above zero indicate healthier than usual eating.
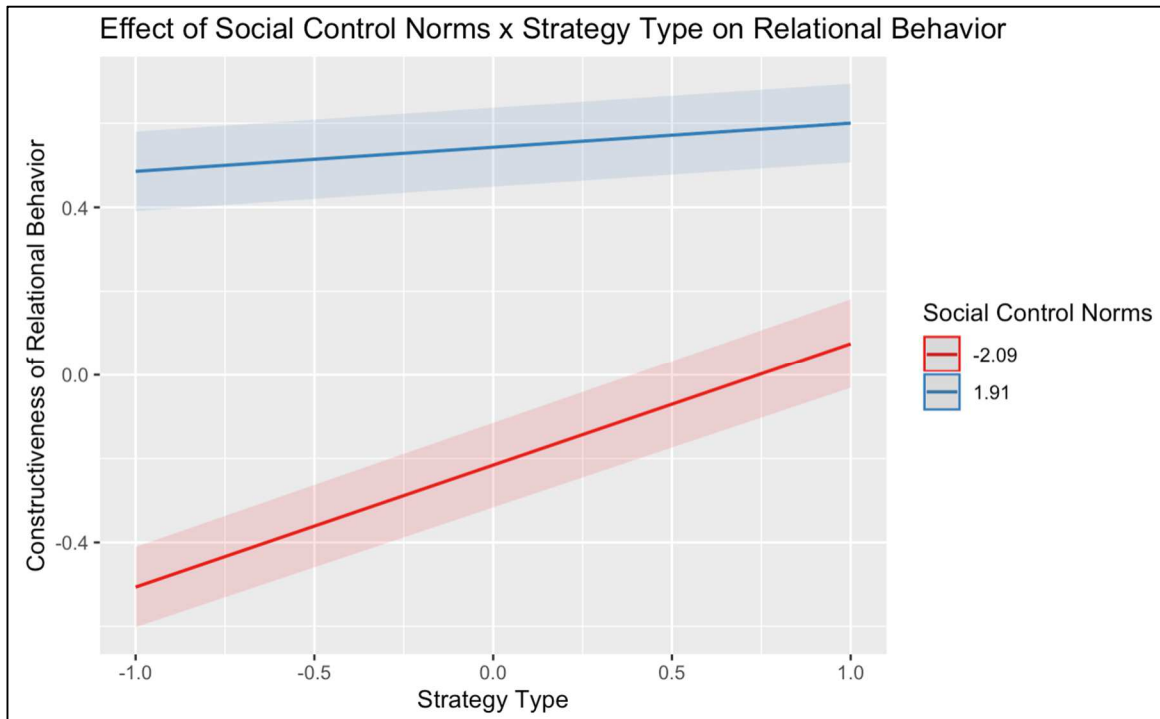
Figure 5

Effect of Social Control Norms and Stage of SCS on Relational Behavior

Note. SCS = Social Control Scenario. Relational behaviors are coded such that -1 = destructive behaviors, 0 = neutral behaviors, 1 = constructive behaviors.

Figure 6

Effect of Social Control Norms and Strategy Type on Relational Behavior
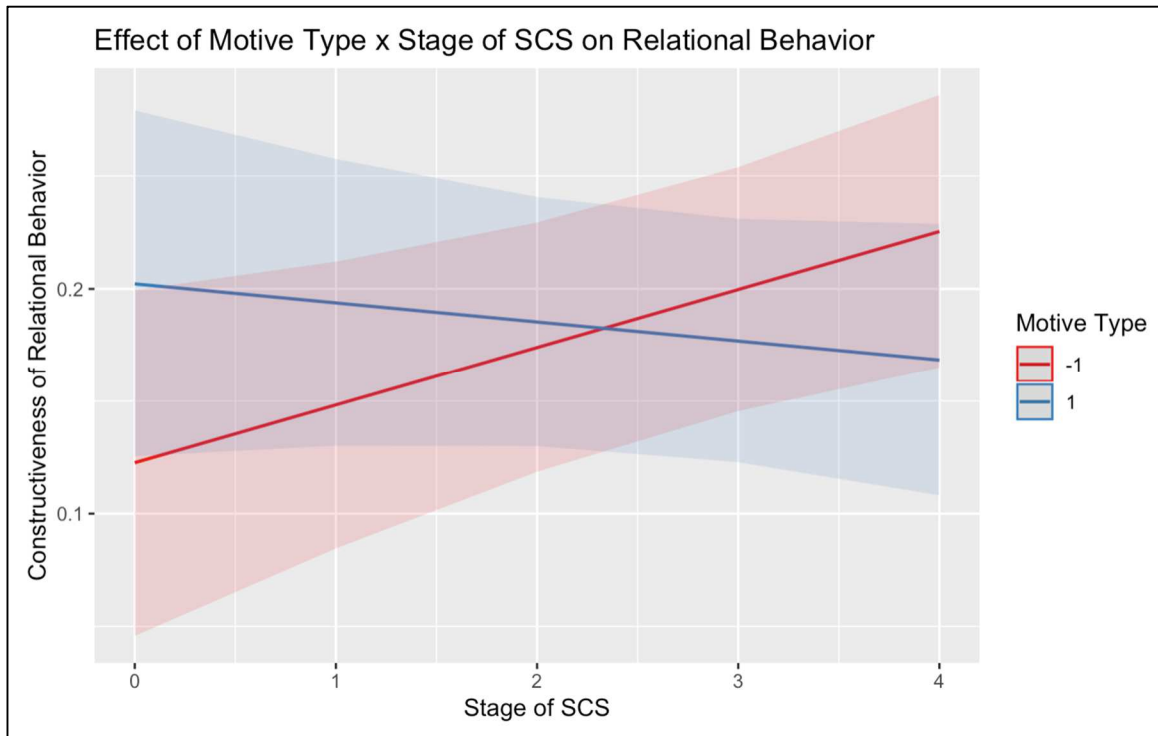

Note. Relational behaviors are coded such that -1 = destructive behaviors, 0 = neutral behaviors, 1 = constructive behaviors. Strategy type is coded such that -1 = independent motives and 1 = interdependent motives.

Figure 7

Effect of Motive Type and Stage of SCS on Relational Behavior

Note. SCS = Social Control Scenario. Relational behaviors are coded such that -1 = destructive behaviors, 0 = neutral behaviors, 1 = constructive behaviors. Motive Type is coded such that -1 = independent motive and 1 = interdependent motive.

Figure 8

*Effect of Strategy Type and Stage of SCS on Healthiness of Eating*
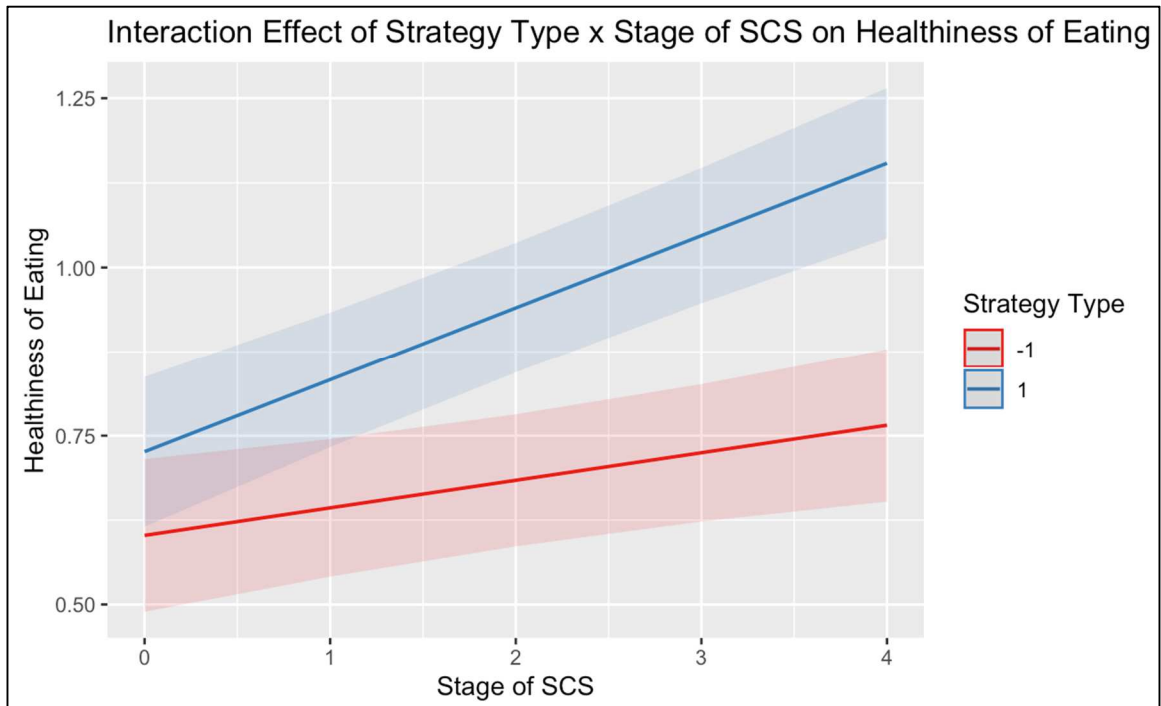
Note. SCS = Social Control Scenario. Healthiness of eating is coded such that values below zero indicate less healthy than usual eating, zero indicates as healthy as usual eating, values above zero indicate healthier than usual eating. Strategy type is coded such that -1 = independent motives and 1 = interdependent motives.

Figure 9

Number of Diary Days on Which Individuals Reported That Their Partner Engaged in a

Behavior That Could Affect Their Eating
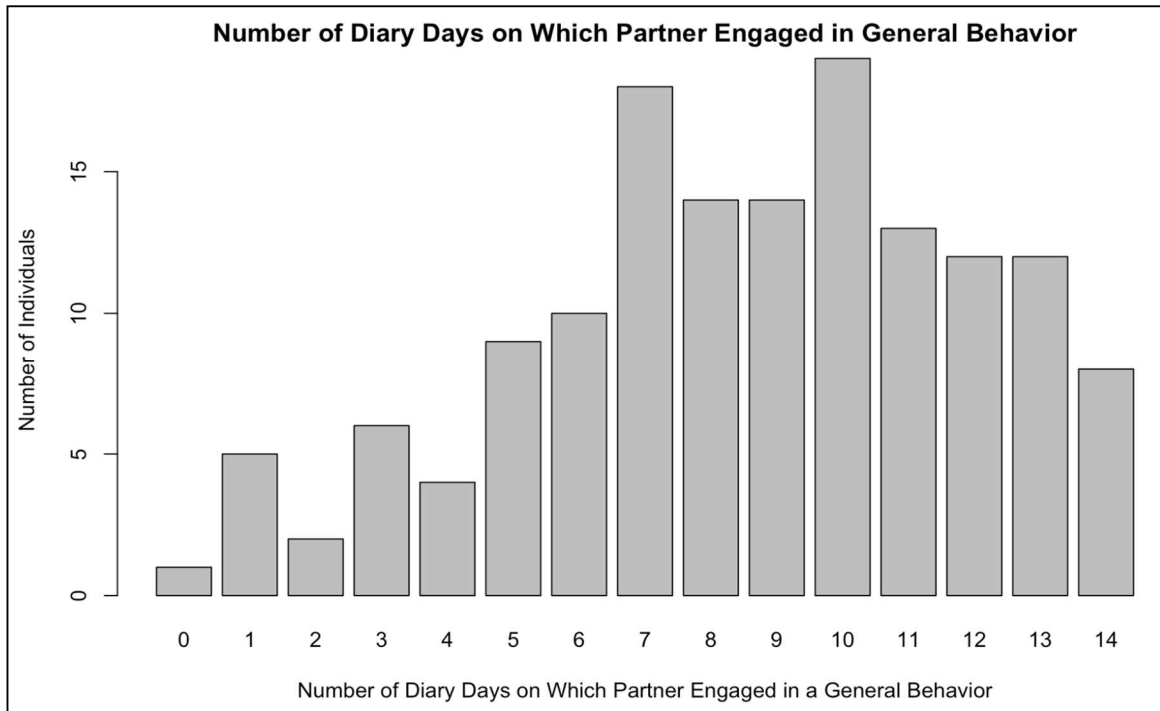
Note. $N = 147$. This bar plot reflects the number of individuals in the sample who reported that their partner engaged in a behavior that could affect their eating on different numbers of diary days. For instance, one participant indicated that their partner engaged in a behavior that could affect their eating on zero diary days, whereas eight participants indicated that their partner engaged in an eating-related behavior on all 14 diary days.

Figure 10

Number of Diary Days on Which Individuals Reported Engaging in Relational Behaviors

Toward Their Partner
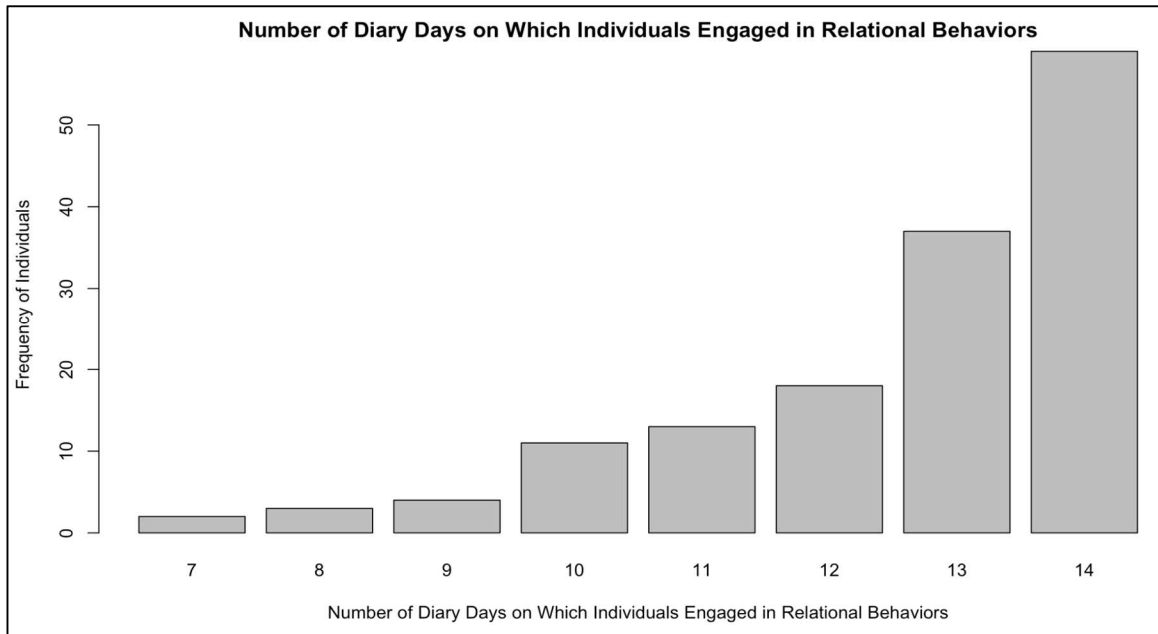
Note. $N = 147$. This bar plot reflects the number of individuals in the sample who reported engaging in relational behaviors on different numbers of diary days. For example, fewer than five individuals reported engaging in relational behaviors on seven days of the diary study period, whereas more than 50 individuals reported engaging in relational behaviors on all 14 days of the diary study period.

Figure 11
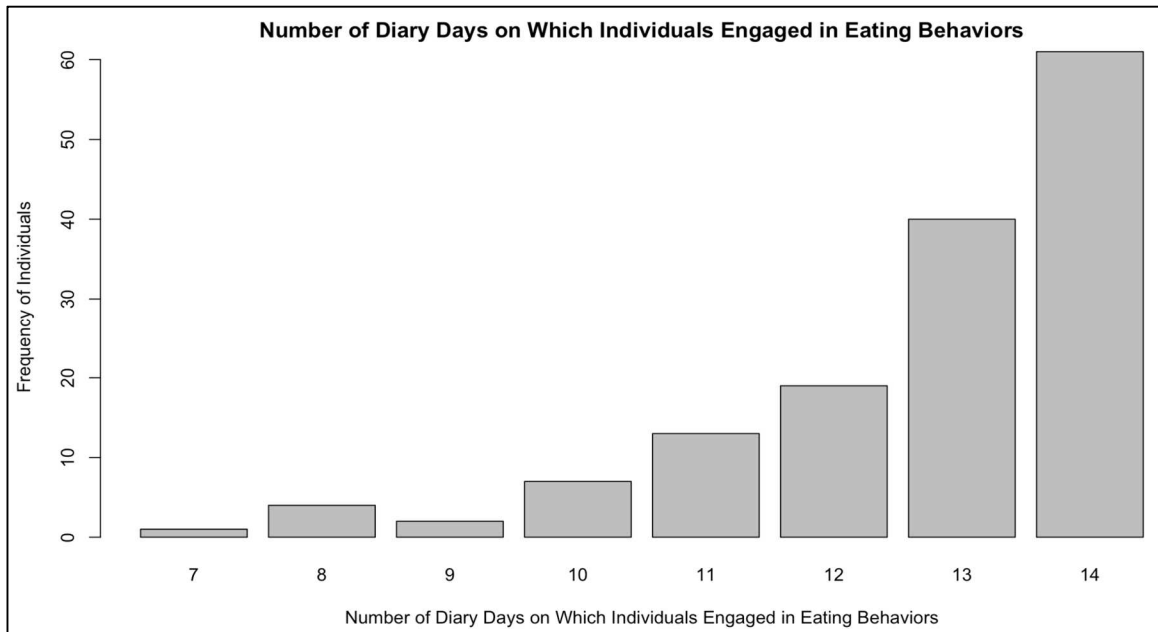
Number of Diary Days on Which Individuals Reported Engaging in Eating Behaviors

Note. $N = 147$. This bar plot reflects the number of individuals in the sample who reported engaging in eating behaviors on different numbers of diary days. For example, approximately 60 individuals in the sample reported engaging in eating behaviors on all 14 days of the diary study period.

Figure 12

Number of Diary Days on Which Individuals Reported That Their Partner Engaged in

Social Control

Note. $N = 147$. This bar plot reflects the number of individuals in the sample who reported that their partner engaged in a social control strategy on different numbers of diary days. For instance, approximately six participants indicated that their partner did not engage in any social control during the study period (0 days).

Figure 13

Number of Diary Days on Which Individuals Reported That Their Partner Engaged in

Autonomy-Supporting Social Control

Note. *N* = 147. This bar plot reflects the number of individuals in the sample who reported that their partner engaged in an autonomy-supporting social control strategy on different numbers of diary days. For instance, approximately 29 participants indicated that their partner did not engage in any autonomy-supporting social control during the study period (0 days). AS = Autonomy-supporting.

Figure 14

Number of Diary Days on Which Individuals Reported That Their Partner Engaged in

Autonomy-Limiting Social Control
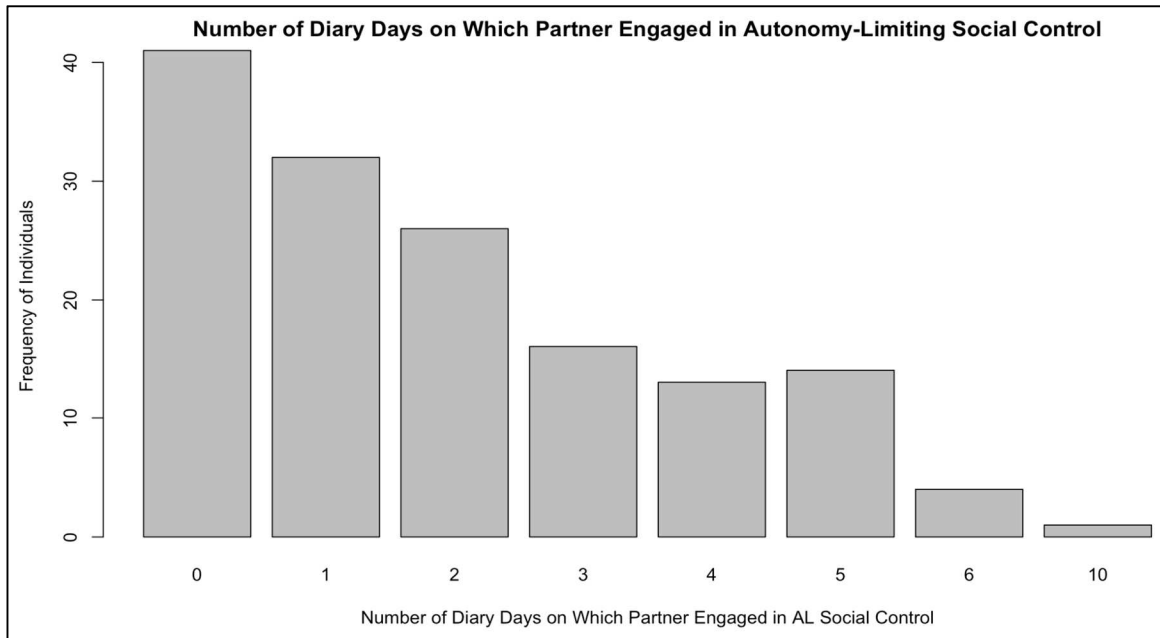
Note. N = 147. This bar plot reflects the number of individuals in the sample who reported that their partner engaged in an autonomy-limiting social control strategy on different numbers of diary days. For instance, approximately 41 participants indicated that their partner did not engage in any autonomy-limiting social control during the study period (0 days). AL = Autonomy-limiting.
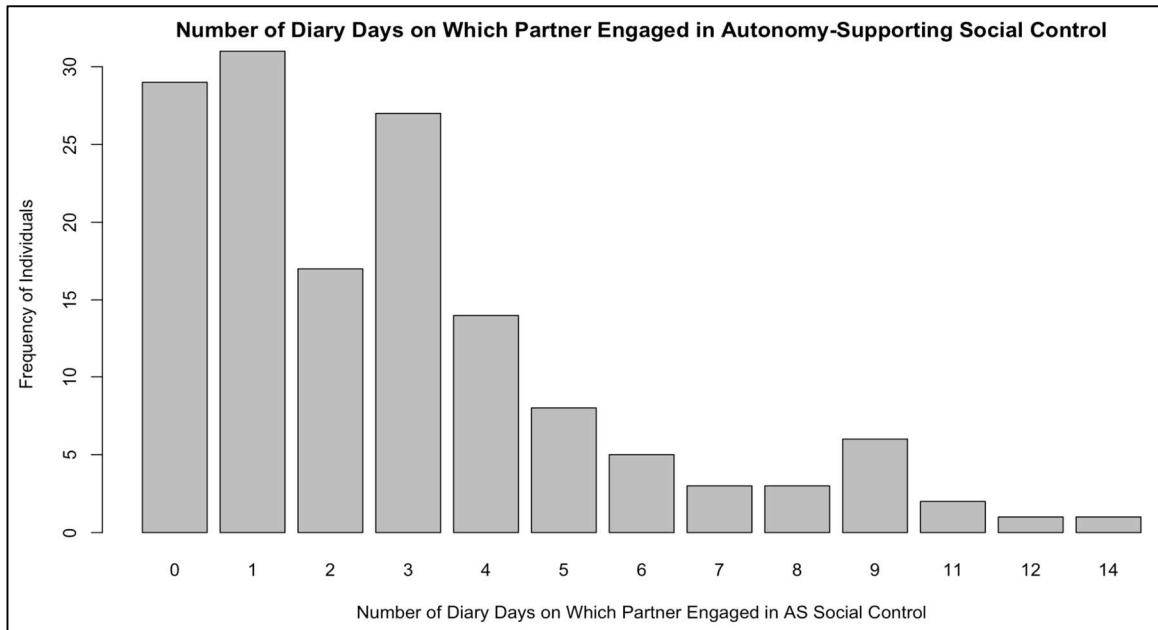
Figure 15

Number of Diary Days on Which Individuals Reported That Their Partner Engaged in

Neutral Social Control
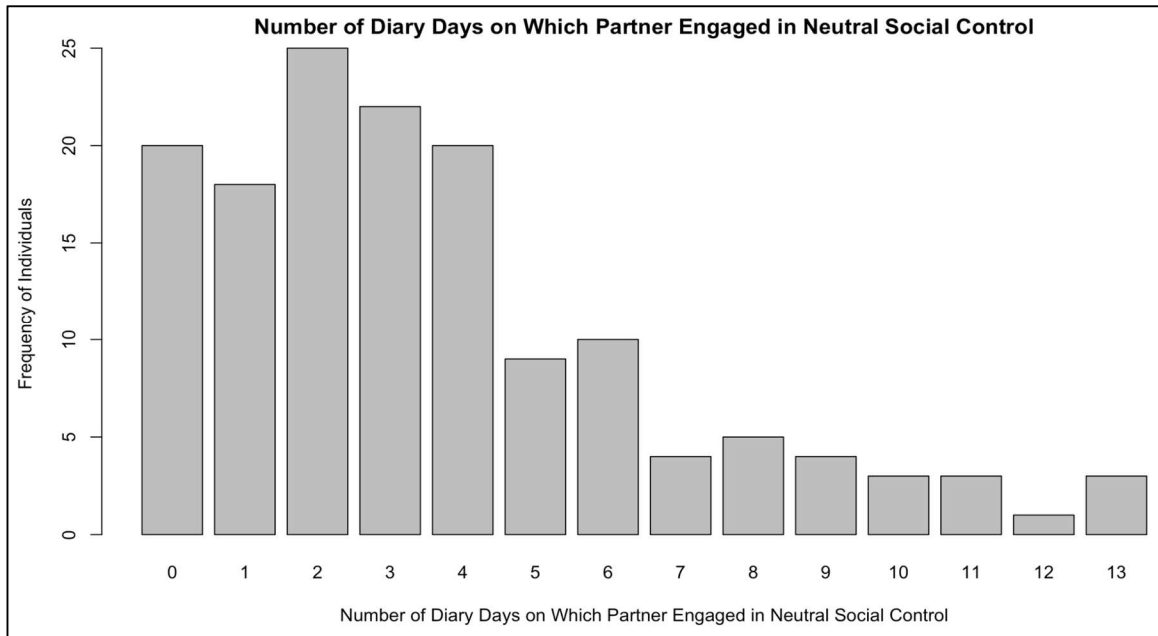
Note. N = 147. This bar plot reflects the number of individuals in the sample who reported that their partner engaged in a neutral social control strategy on different numbers of diary days. For instance, approximately 20 participants indicated that their partner did not engage in any neutral social control during the study period (0 days).

Figure 16

Effect of Autonomy-Supporting Social Control and Autonomy-Limiting Social Control on

Healthiness of Eating
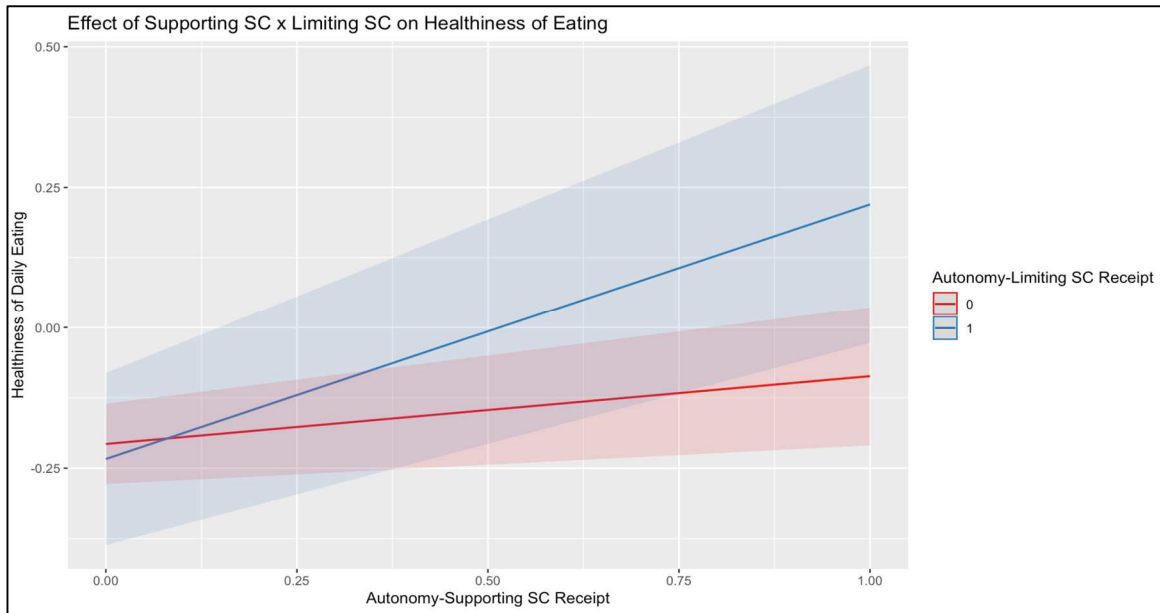
Note. SC = Social control. Autonomy-Supporting social control is coded such that 0 = no autonomy-supporting strategies were used that day and 1 = at least 1 autonomy-supporting strategy was used that day. Autonomy-Limiting social control is coded such that 0 = no autonomy-limiting strategies were used that day and 1 = at least 1 autonomy-limiting strategy was used that day.

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Appendix A: Eligibility Questions

Pilot Study 1 and Pilot Study 2

1. Are you currently in a romantic relationship?
   a. Yes
   b. No

2. [If yes] Do you live with your romantic partner?
   a. Yes
   b. No

3. Think about the foods that you typically eat for breakfast, lunch, and snacks. How healthy are your current eating habits, in general?
   a. Extremely unhealthy
   b. Very unhealthy
   c. Somewhat unhealthy
   d. A mix of healthy and unhealthy
   e. Somewhat healthy
   f. Very healthy
   g. Extremely healthy

4. How many meals do you eat with your partner, on average? Please enter a number. _____

5. How interested are you in improving your eating habits?
   a. Not at all interested
   b. A little interested
   c. Somewhat interested
   d. Very interested
   e. Extremely interested

Additional Eligibility Questions for Study 1

1. What is your native language / first language?
   a. Dropdown list of options shown (English, German, etc.)

2. What is the name of this vegetable? (*Note*: This item was only included in Study 1)
   [Picture of eggplants shown]

3. How long have you been in your relationship with your partner?
   a. Less than 3 months
   b. Between 3 months and 10 years
   c. More than 10 years

Additional Eligibility Questions for Study 2

1. Which of the following bests reflects your English language proficiency level?
   a. Beginner
   b. Intermediate
   c. Advanced
   d. Fluent or Native Speaker

2. Do you have a smartphone with the ability to receive up to 30 texts (over 2 weeks) and a data plan sufficient for completing a short survey each night?
   a. Yes
   b. No

3. Do you work overnight shifts?
   a. Yes
   b. No

4. What time do you typically fall asleep?
   a. I typically fall asleep before 8:00PM
   b. I typically fall asleep after 8:00PM

5. What time do you typically finish eating dinner?
   a. I typically finish eating dinner by 9:00PM
   b. I typically finish eating dinner after 9:00PM

Appendix B: Key Pilot Study 1 Measures

Motives Manipulation and Items Assessing Perceptions of Motives Manipulation

Instructions: Imagine you are interested in eating more healthfully, but you have a hard time doing so. Perhaps you don't have the time to cook, the money to buy healthy foods, or the willpower to make healthy choices instead of unhealthy choices. Imagine that, one day, you overhear [PARTNER] talking on the phone about your eating behavior.

Interdependent Motive: S/He says, "S/he has been eating this way for a while and I think it's really taking a toll on his/her health and energy. S/he eats way too much junk food and not enough healthy foods. I really care about him/her and I'm worried about him/her. I think if s/he were just to eat a few more fruits and vegetables s/he would feel healthier and happier."

Independent Motive: S/he says, "S/he has been eating this way for a while and it really bothers me. I think that people who eat too much junk food and not enough healthy foods seem to get sick more easily. I worry about what might happen to me in the future if she/he keeps eating like this…what would I do if s/he got sick? I think if s/he were just to eat a few more fruits and vegetables I would be happier."

--
For each motive:

Instructions: Based **only** on what you overheard your partner say, indicate your agreement with each of the following statements.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

1. What I heard [Partner's first name] say makes me think that [Partner's first name] cares about my health.
2. What I heard [Partner's first name] say makes me think that [Partner's first name] has **my** best interests at heart.
3. What I heard [Partner's first name] say makes me think that [Partner's first name] has **their own** best interests at heart.
4. What I heard [Partner's first name] say makes me think that [Partner's first name] is highly committed to our relationship.
5. What I heard [Partner's first name] say makes me think that [Partner's first name] is willing to put my wants and needs above his/her own wants and needs.
6. What I heard [Partner's first name] say makes me think that [Partner's first name] put his/her own happiness above my happiness.

Definitions of Autonomy Support and Autonomy Limitation and Questions Assessing Comprehension of Autonomy Support and Autonomy Limitation

Instructions: Romantic partners can affect each other's eating behavior in different ways. On the following pages, you will view different behaviors that your romantic partner could use to try to change your eating behavior. As you read the list of behaviors, imagine that your partner, [PARTNER] used the behavior and imagine what your response would be.

We are interested in your perceptions of these behaviors according to whether they are limiting versus supportive, indirect versus direct, and how easy to imagine they are.

One thing we're interested in is how limiting versus supportive you find the behaviors.

Limiting behaviors give you fewer options, fewer choices, and less independence to make your own decisions. An example of a limiting behavior would be your partner making choices/decisions for you about what you should or should not eat. Limiting behaviors make you feel as if you are unable to or cannot make your own choices to pursue your own goals. Rather, you feel obligated to make food choices based on what your partner prefers you should do. Your partner's preferences, therefore, primarily determine what you do or do not eat more so than your own preferences.

Supportive behaviors give you more options, more choices, and more independence to make your own decisions. An example of a supportive behavior would be your partner giving you the freedom to make your own choices/decisions about what you should or should not eat. Supportive behaviors make you feel as if you are able to or can make your own choices to pursue your own goals. Supportive behaviors also make you feel as if you are responsible for your own choices. Your preferences, therefore, primarily determine what you do or do not eat more so than your partner's preferences.

We will ask you a couple of questions to help you remember what limiting versus supportive behaviors are.

Which kind of behaviors might make you feel obligated to make food choices because of what your partner prefers?

○ Limiting behaviors

○ Supportive behaviors

Which kind of behaviors might make you feel like you, alone, are responsible for your eating choices?

○ Limiting behaviors

○ Supportive behaviors

Social Control Strategies: Subset A

Instructions: Starting on the next screen, you will rate 12 behaviors with regards to how limiting versus supportive they are, how indirect versus direct they are, and how easy to imagine they are. Note: Some of these behaviors may seem similar, but they are each unique.

S1a You are out on a dinner date with [Partner's first name] at a nice restaurant. [Partner's first name] asks you what kind of food you are interested in ordering, and after you tell [Partner's first name], [Partner's first name] suggests a vegetarian meal they think you'd be interested in trying.

S2b While you are having a conversation with [Partner's first name], you start discussing what it means to have a healthy versus unhealthy diet. During this conversation, [Partner's first name] notes, "*You eat too much junk food and not enough vegetables - your diet is definitely unhealthy.*"

*S3a Lately, you've found yourself being a little hungry between meals, so you bought a number of snack items, including granola bars and some salty snacks, like chips. While you were out, [Partner's first name] threw away many of the salty snacks you had bought, and replaced them with fresh fruit.

S3c Lately, you've found yourself being a little hungry between meals and mentioned it to [Partner's first name]. One day, [Partner's first name] buys a variety of fruits and vegetables, and shares some with you, noting that they remembered what you told them.

S4b You have a particularly busy weekend ahead of you, so [Partner's first name] says, "*Write down what foods you want and I'll pick them up for you.*" Later that night, [Partner's first name] gets back from the grocery store and says, "*Okay, I got everything on your list…Oh! And I also picked up some fruits and vegetables for you to use in your lunches this week because I thought they'd be good for you. Don't forget to pack them!*"

S5a You and [Partner's first name] are talking about your plans for the evening. You say, "*What do you want to have for dinner tonight? I'm thinking we should order some take-out.*" [Partner's first name] pulls out a cookbook called, "Healthy Eating for Two" and flips to a recipe. [Partner's first name] says, "*Hey, how about we make this recipe tonight, instead? We have all the ingredients and it'll help us use up our vegetables.*"

S9b You and [Partner's first name] are watching a movie at home. You are hungry for a snack, so you go to the freezer and pull out a pint of your favorite ice cream. When you sit down on the couch next to [Partner's first name], they say, "*Ice cream again? Do you know how much sugar is in that?*"

S10a You're eating lunch with [Partner's first name]. When you pull out your meal, [Partner's first name] comments, "*Wow, you really love that meal - I always see you pack that lunch! I never see you with vegetables in your lunch, though...you really should eat more healthy foods.*"

S11b After work, you're really craving your favorite take-out, so you stop and pick it up for dinner. When [Partner's first name] sees you unloading the take-out, they look at the food with disappointment and say, "*Aw, I was hoping we could make a healthy dinner together tonight. That's okay; I know you really love that take-out restaurant.*"

S13a While you were talking about an exciting new restaurant with [Partner's first name], they ask if the restaurant's menu includes any salads. After you confirm that they do have salads, [Partner's first name] casually says, "*Oh, that's great, because someone I know needs to eat more leafy green vegetables...*" and winks at you.

S14b You complain to [Partner's first name] that you are growing tired of your typical lunch. [Partner's first name] immediately says, "*I've been waiting for you to ask me for help – I have just the recipe!*" and then offers to share the recipe for their favorite salad, which they eat for lunch frequently.

*S14a You complain to [Partner's first name] that you are growing tired of your typical lunch. [Partner's first name] listens to your concerns, and then offers to share the recipe for their favorite salad, which they eat for lunch frequently.

Social Control Strategies: Subset B

Instructions: Starting on the next screen, you will rate 12 behaviors with regards to how limiting versus supportive they are, how indirect versus direct they are, and how easy to imagine they are. Note: Some of these behaviors may seem similar, but they are each unique.

S1b You are out on a dinner date with [Partner's first name] at a nice restaurant. Without asking what you'd like to eat, [Partner's first name] orders the spinach salad for both of you, noting that it is a specialty of the restaurant.

S2a While you were having a conversation with [Partner's first name], you start discussing what it means to have a healthy versus unhealthy diet. During this conversation, [Partner's first name] notes that people generally don't eat raw vegetables and rely too much processed foods. "*Just look at your own diet,*" they add.

*S3a Lately, you've found yourself being a little hungry between meals, so you bought a number of snack items, including granola bars and some salty snacks, like chips. While you were out, [Partner's first name] threw away many of the salty snacks you had bought, and replaced them with fresh fruit.

S3b Lately, you've found yourself being a little hungry between meals, so you bought a number of snack items, including granola bars and some salty snacks, like chips. One day, when you were about to open a bag of chips for a snack, [Partner's first name] offers you an orange instead, mentioning that it is better for you to eat healthier foods.

S4a You have a particularly busy weekend ahead of you, so [Partner's first name] asks you to write down what you want from the store and they will pick them up. Later that night, [Partner's first name] gets back from the grocery store and says, "*Okay, I got everything on your list…Oh! And I also picked up some fruits and vegetables because I thought you'd like them. Feel free to use as many as you want in your lunches this week.*"

S5b You and [Partner's first name] are talking about your plans for the evening. You say, "*What do you want to have for dinner tonight? I'm thinking we should order some take-out.*" [Partner's first name] pulls out a cookbook called, "Healthy Eating for Two" and flips to a recipe. [Partner's first name] says, "*No, it would be better if we make a recipe that's healthier. We have all the ingredients and it'll help us use up our vegetables.*"

S9a You and [Partner's first name] are watching a movie at home. You are hungry for a snack, so you go to the freezer and pull out a pint of your favorite ice cream. When you sit down on the couch next to [Partner's first name], they joke, "*You spend more time with Ben & Jerry than you do with me!*"

S10b You're eating lunch with [Partner's first name]. When you pull out your meal, [Partner's first name] comments, "*Wow, you really love that meal - I always see you pack that lunch! I bet it would taste even better if you added some fresh veggies.*"

S11a After work, you were really craving your favorite take-out, so you stop and pick it up for dinner. When [Partner's first name] sees you unloading the take-out, they look at the food with disgust and says, "*Take-out again? That food is so unhealthy!*"

S11c After work, you were really craving your favorite take-out, so you stop and pick it up for dinner. When [Partner's first name] sees you unloading the take-out, they look at the food and frowns and say, "*You should really stay away from that kind of junk food. It's kind of shocking when you think about all the things they put into that…*"

S13b While you were talking about an exciting new restaurant with [Partner's first name], they ask if the restaurant's menu included any salads. After you confirm that they do have salads, [Partner's first name] said, "*Awesome, we should go there on our next date!*"

*S14a You complain to [Partner's first name] that you are growing tired of your typical lunch. [Partner's first name] listens to your concerns, and then offers to share the recipe for their favorite salad, which they eat for lunch frequently.

[After viewing each strategy, participants responded to the following questions.]

How limiting versus supportive would you find this behavior?

1	2	3	4	5	6	7
Extremely limiting	Very limiting	Somewhat limiting	Neither limiting nor supportive (neutral)	Somewhat supportive	Very supportive	Extremely supportive

How indirect versus direct would you find this behavior?

1	2	3	4	5	6	7
Extremely indirect	Very indirect	Somewhat indirect	Neither indirect nor direct (neutral)	Somewhat direct	Very direct	Extremely direct

How easy is it to imagine that someone's partner could engage in this behavior?

1	2	3	4	5	6
Extremely difficult to imagine	Very difficult to imagine	Somewhat difficult to imagine	Somewhat easy to imagine	Very easy to imagine	Extremely easy to imagine

Appendix C: Key Pilot Study 2 Measures

Social Control Strategies and Response Options

Context	Autonomy-Supporting Strategy	Autonomy-Limiting Strategy	Response Options
1	You are out on a dinner date with [Partner] at a nice restaurant. [Partner] asks you what kind of food you are interested in ordering, and after you tell them, [Partner] suggests a vegetarian meal they think you'd be interested in trying.	You are out on a dinner date with [Partner] at a nice restaurant. Without asking what you'd like to eat, [Partner] orders the spinach salad for both of you, noting that it is a specialty of the restaurant.	**Constructive Response Option**: You smile and touch [Partner]'s hand across the table and say, "*Thanks, [Partner]. I appreciate that you are always trying to anticipate what I might like.*" **Neutral Response Option:** You turn to [Partner] and say, "*So, this is a pretty cool restaurant, huh?*" **Destructive Response Option:** You frown and say, "*Maybe you should just think about what you're going to eat instead of what I'm going to eat.*"
2	Lately, you've found yourself being a little hungry between meals, so you bought a number of snack items, including granola bars and some salty snacks, like chips. While you were out one day, [Partner] bought a variety of fruits and vegetables and shares some with you, noting, "*You seem like you've needed more snacks lately.*"	Lately, you've found yourself being a little hungry between meals, so you bought a number of snack items, including granola bars and some salty snacks, like chips. While you were out one day, [Partner] hides many of the salty snacks you bought and replaced them with fresh fruit, noting, "*You seem like you've needed healthier snacks lately.*"	**Constructive Response Option:** Feeling touched by the gesture, you smile and say, "*That's really considerate of you to buy me some snacks. It makes me feel like you care about me.*" **Neutral Response Option:** Nonchalantly, you say, "*Sure,*" and go back to what you're doing. **Destructive Response Option:** Annoyed, you say, "*Don't worry about it. I can take care of my own snacks – I don't need you monitoring what I eat.*"
3*	After work, you're really craving your favorite take-out, so you stop and pick it up for dinner.	After work, you're really craving your favorite take-out, so you stop and pick it up for	**Constructive Response Option:** You smile and say, "*Yeah, I had a stressful day and really wanted some comfort food. How was your day today?*"

	When [Partner] sees you unloading the take-out, they look at the food with disappointment and say, "*Aw, I was hoping we could make a healthy dinner together tonight. That's okay; I know you really love that take-out restaurant*."	dinner. When [Partner] sees you unloading the take-out at home, they look at the food with disgust and say, "*Take-out again? The food at that place is so unhealthy!*"	**Neutral Response Option:** You say, "*Yup! Hey, what do you want to do after dinner? I was thinking we could play a game or something.*"
			Destructive Response Option: You roll your eyes, bring the food to the dining room, and start watching a TV show by yourself.
4	You and [Partner] are watching a movie at home. You are hungry for a snack, so you go to the freezer and pull out a pint of your favorite ice cream. When you sit down on the couch next to [Partner], they say, "*Wow, you love that ice cream! Don't forget - I also bought some of our favorite fruits today. They are in a bowl on the counter.*"	You and [Partner] are watching a movie at home. You are hungry for a snack, so you go to the freezer and pull out a pint of your favorite ice cream. When you sit down on the couch next to [Partner], they say, "*You should really stay away from that kind of junk food. Do you know how much sugar there is in that?*"	**Constructive Response Option:** You give [Partner] a kiss and say, "*You're right - fruit is probably a better choice. What fruit do you think makes the best dessert?*"
			Neutral Response Option: You let the comment slide, cuddle up to [Partner] with your ice cream, and ask, "*So, what do you think of the movie so far?*"
			Destructive Response Option: You sigh and say, "*I'm tired of you always commenting on what I eat. I can eat whatever I want – it's none of your business.*"
5	You have a particularly busy weekend ahead of you, so [Partner] asks you to write down what you want from the store and they will pick it up. Later that night, [Partner] gets back from the grocery store and says, "*Okay, I got everything on your list…oh! And I also picked up some fruits and vegetables because I thought you would like*	You have a particularly busy weekend ahead of you, so [Partner] asks you to write down what you want from the store and they will pick it up. Later that night, [Partner] gets back from the grocery store and says, "*I didn't get everything on your list because some of it seemed pretty unhealthy. But, I did pick up some fruits and*	**Constructive Response Option:** You smile and say, "*Thank you [Partner]! That's really sweet and considerate of you. I appreciate you thinking of me.*"
			Neutral Response Option: You nod and say, "*Thanks for picking up the foods I wanted.*"
			Destructive Response Option: You sigh, annoyed, and say, "*Why didn't you just pick up the items on my list? Now, if I don't eat the foods, I'm going to feel guilty for wasting them.*"

	them. Feel free to use as many as you want in your lunches this week.”	*vegetables because I thought they were a healthier choice for you. Don't forget to pack them in your lunches this week!”*	
6	You and [Partner] are talking about your plans for dinner. You suggest ordering delivery from your favorite restaurant. [Partner] pulls out a cookbook called, "Healthy Eating for Two" and flips to a recipe. Pointing to the recipe, [Partner] says, *"We could make this recipe, instead. We have all the ingredients and it'll help us use up our vegetables.”*	You and [Partner] are talking about your plans for dinner. You suggest ordering delivery from your favorite restaurant. [Partner] pulls out a cookbook called, "Healthy Eating for Two" and flips to a recipe. Pointing to the recipe, [Partner] says, *"No, we should make this healthy recipe tonight, instead. You haven't been eating enough vegetables lately, and this recipe will be healthier for both of us.”*	**Constructive Response Option:** You smile fondly at [Partner] and say, "Aww, remember when we got that cookbook? It feels like so long ago! That's definitely an option we should think about." **Neutral Response Option:** You shrug your shoulders and say, "That could work, too." **Destructive Response Option:** You sigh and say, *"You're always deciding what we eat. It's my turn to pick something.”*

Note. Strategies marked with * were discarded (i.e., not included in Study 1) because the response options did not meet consistency criteria.

Rating Relational Response Options

Instructions: Romantic partners can affect each other's health behavior in different ways. Sometimes, romantic partners try to change each other's health behavior for various reasons. When someone tries to change their partner's health behavior, their partner can respond in various ways. For instance, the partner can respond **constructively**, such as by showing appreciation or gratitude, by showing affection, by expressing other kinds of positive emotions or comments, or by discussing how positively the persuasion attempt makes them feel. Constructive responses are beneficial for the relationship. Or, the partner can respond **destructively**, such as by showing contempt, by starting an argument with their partner, by expressing other kinds of negative emotions or comments, by nagging about unrelated matters, or by reducing their closeness with the partner. Destructive responses are harmful for the relationship.

On the following pages, you will view 6 hypothetical scenarios that depict your partner, [PARTNER] engaging in a pattern of behavior along with three different options for how you might respond to their actions.

After each scenario, you will then rate how constructive versus destructive your potential response to [PARTNER]'s behavior was. You will also rate how easy it is to imagine someone engaging in each response.

How **constructive** (i.e., positive, helpful for the relationship) versus **destructive** (i.e., negative, harmful for the relationship) is each response option?

1	2	3	4	5	6	7
Extremely destructive	Very destructive	Somewhat destructive	Neither destructive nor constructive	Somewhat constructive	Very constructive	Extremely constructive

How easy is it to imagine someone responding in these different ways after their partner engaged in the behaviors above?

1	2	3	5	6	7
Extremely difficult to imagine	Very difficult to imagine	Somewhat difficult to imagine	Somewhat easy to imagine	Very easy to imagine	Extremely easy to imagine

Motives Manipulations

Instructions: Next, we're interested in your perceptions of different motivations your partner could have for trying to change your eating behavior.

Imagine you are interested in eating more healthfully, but you have a hard time doing so. Perhaps you don't have the time to cook, the money to buy healthy foods, or the willpower to make healthy choices instead of unhealthy choices.

Imagine that, one day, you overhear [PARTNER] talking on the phone about your eating behavior.

Interdependent Motive: [PARTNER] says, "My partner has been eating this way for a while and I think it's really taking a toll on their health and energy. They eat way too much junk food and not enough healthy food. I really care about my partner and I'm worried about them. I think if they were just to eat a few more fruits and vegetables, my partner would feel healthier and happier."

Independent Motive: [PARTNER] says, "My partner has been eating this way for a while and it's really taking a toll on me. They eat way too much junk food and not enough healthy food. I really care about getting out and doing lots of fun activities. I'm worried about what might happen to my lifestyle if my partner keeps eating like this…what would I do if my partner didn't want to go do fun stuff together? I think if they were just to eat a few more fruits and vegetables, I'd be much happier."

Motive Manipulations

Instructions: Imagine you are interested in eating more healthfully, but you have a hard time doing so. Perhaps you don't have the time to cook, the money to buy healthy foods, or you find it challenging to make healthy choices on a regular basis.

One day, you overhear [PARTNER] talking on the phone about your eating behavior.

Interdependent: [PARTNER] says, "*My partner has been eating this way for a while and I think it's really taking a toll on their health and energy. They eat way too much junk food and not enough healthy food. I really care about my partner and I'm worried about them. I think that if they would just eat a few more fruits and vegetables every day, my partner would feel healthier and happier.*"

Independent: [PARTNER] says, "*My partner has been eating this way for a while and it's really taking a toll on me. They eat way too much junk food and not enough healthy food. I really care about getting out and doing lots of fun activities. I'm worried about what might happen to my lifestyle if my partner keeps eating like this...what would I do if my partner didn't have the energy to do fun stuff together? I think that if they would just eat a few more fruits and vegetables every day, I'd be much happier.*"

Social Control Scenarios

Instructions: A few days after you overhear [partner] saying this on the phone, [partner] starts engaging in different behaviors related to your eating.

Imagine the following series of events occurred over the course of 2 weeks. As you read the scenario, imagine that [partner] engaged in each of these behaviors.

Social Control Scenarios (Revised from Pilot Study 2)

Context	Autonomy-Supporting Strategy	Autonomy-Limiting Strategy	Response Options
1	You are out on a dinner date with [Partner] at a nice restaurant. [Partner] asks you what kind of food you are interested in ordering, and after you tell them, [Partner] suggests a salad they think you'd be interested in trying.	You are out on a dinner date with [Partner] at a nice restaurant. Without asking what you'd like to eat, [Partner] orders a salad for both of you, noting that it is a specialty of the restaurant.	**Constructive Response Option**: You smile and touch [Partner]'s hand across the table and say, "*Thanks, [Partner]. I appreciate that you are always trying to anticipate what I might like.*" **Neutral Response Option:** You turn to [Partner] and say, "*So, this is a pretty cool restaurant, huh?*" **Destructive Response Option:** You frown and say, "*Maybe you should just think about what you're going to eat instead of what I'm going to eat.*"
2	Lately, you've found yourself being a little hungry between meals, so you bought a number of snack items, including granola bars and some salty snacks, like chips. While you were out one day, [Partner] bought a variety of fruits and vegetables and shares some with you, noting, "*You seem like you've needed more snacks lately.*"	Lately, you've found yourself being a little hungry between meals, so you bought a number of snack items, including granola bars and some salty snacks, like chips. While you were out one day, [Partner] hides many of the salty snacks you bought and replaced them with fresh fruit, noting, "*You seem like you've needed healthier snacks lately.*"	**Constructive Response Option:** Feeling touched by the gesture, you smile and say, "*That's really considerate of you to buy me some snacks. It makes me feel like you care about me.*" **Neutral Response Option:** Nonchalantly, you say, "*Sure,*" and go back to what you're doing. **Destructive Response Option:** Annoyed, you say, "*Don't worry about it. I can take care of my own snacks – I don't need you monitoring what I eat.*"
3	You and [Partner] are watching a movie at home. You are hungry for a snack, so you go to the freezer and pull out a pint of your favorite ice cream. When you sit down on the couch next	You and [Partner] are watching a movie at home. You are hungry for a snack, so you go to the freezer and pull out a pint of your favorite ice cream. When you sit down on the couch next	**Constructive Response Option:** You smile at [Partner] and say, "*You're right - fruit is probably a better choice. What fruit do you think makes the best dessert?*" **Neutral Response Option:** You let the comment slide, cuddle up to [Partner] with your ice

to [Partner], they say, "*Wow, you love that ice cream! Don't forget - I also bought some of our favorite fruits today. They are in a bowl on the counter.*"	to [Partner], they say, "*You should really stay away from that kind of junk food. Do you know how much sugar there is in that?*"	cream, and ask, "*So, what do you think of the movie so far?*"
		Destructive Response Option: You sigh and say to [Partner], "*I'm tired of you always commenting on what I eat. I can eat whatever I want – it's none of your business.*"
4	You have a particularly busy weekend ahead of you, so [Partner] asks you to write down what you want from the store and they will pick it up. Later that night, [Partner] gets back from the grocery store and says, "*Okay, I got everything on your list…oh! And I also picked up some fruits and vegetables because I thought you would like them. Feel free to use as many as you want in your lunches this week.*"	You have a particularly busy weekend ahead of you, so [Partner] asks you to write down what you want from the store and they will pick it up. Later that night, [Partner] gets back from the grocery store and says, "*I didn't get everything on your list because some of it seemed pretty unhealthy. But, I did pick up some fruits and vegetables because I thought they were a healthier choice for you. Don't forget to pack them in your lunches this week!*"	**Constructive Response Option:** You smile and say, "*Thank you [Partner]! That's really sweet and considerate of you. I appreciate you thinking of me.*"
		Neutral Response Option: You nod and say to [Partner], "*Thanks. I haven't decided what I'm going to eat for lunch this week yet.*"
		Destructive Response Option: You sigh, annoyed, and say to [partner], "*Why didn't you just pick up the items on my list? Now, if I don't eat the foods, I'm going to feel guilty for wasting them.*"
5	You and [Partner] are talking about your plans for dinner. You suggest ordering delivery from your favorite restaurant. [Partner] pulls out a cookbook called, "Healthy Eating for Two" and flips to a recipe. Pointing to the recipe, [Partner] says, "*We could make this recipe, instead. We*	You and [Partner] are talking about your plans for dinner. You suggest ordering delivery from your favorite restaurant. [Partner] pulls out a cookbook called, "Healthy Eating for Two" and flips to a recipe. Pointing to the recipe, [Partner] says, "*No, we should make this healthy recipe*	**Constructive Response Option:** You smile fondly at [Partner] and say, "*Aww, remember when we got that cookbook? It feels like so long ago! That's definitely an option we should think about.*"
		Neutral Response Option: You shrug your shoulders and say to [partner], "*That could work, too.*"
		Destructive Response Option: You sigh and say to [partner], "*You're always deciding what we eat. It's my turn to pick something.*"

have all the ingredients and it'll help us use up our vegetables."

tonight, instead. You haven't been eating enough vegetables lately, and this recipe will be healthier for both of us."

Perceived Relationship Quality Components Inventory (Fletcher et al., 2000)

Instructions: Please indicate what your relationship with [partner] is like, answering each question that follows.

1. How satisfied are you with your relationship?
2. How committed are you to your relationship?
3. How intimate is your relationship?
4. How much do you trust [partner]?
5. How passionate is your relationship?
6. How much do you love [partner]?
7. How content are you with your relationship?
8. How dedicated are you to your relationship?
9. How close is your relationship?
10. How much can you count on [partner]?
11. How lustful is your relationship?
12. How much do you adore [partner]?
13. How happy are you with your relationship?
14. How devoted are you to your relationship?
15. How connected are you to [partner]?
16. How dependable is [partner]?
17. How sexually intense is your relationship?
18. How much do you cherish [partner]?

Appendix E: Examples from Study 2 Participant Training Script

First, we are interested in behaviors that your partner may have engaged in that could affect your eating. [Read the instructions to the participant]

You will see a list of different behaviors your partner could have engaged in, including: [Slowly read each behavior to the participant] Do you have any questions about these behaviors?

For the last two behaviors: *If you think your partner didn't do anything related to your eating, you would choose this option. If you did not interact with your partner at all that day – meaning you didn't see, talk to, or text your partner, you would choose this option.*

So, let's say that your partner showed acceptance of your eating choices, shared a healthy recipe, and asked you what you ate today. You would choose those three options and click the next button.
- Choose the partner showed support, partner shared information, and partner talked about my eating options and click the next button

Then, for each behavior you selected, you will see a list of more specific behaviors that fit in that category.

For the first category, I said my partner showed acceptance, so I would click "Showed acceptance of my eating choices" You can click any that apply, and you also have the option to write in something more specific that's not listed here.
- Choose "showed acceptance of my eating choices"
- Click next

I also said my partner shared a healthy recipe, so I'd click "Shared healthy eating information or recipes with me".
- Choose "shared healthy eating information or recipes with me"
- Click next

And finally, I said my partner asked me what I ate, so I'd click that option.
- Choose "asked me what I ate today"
- Click next

<u>Intentional influence screen</u>: *Then, you'll come to a screen that look like this.* [**Read instructions to participant**]. *So, maybe I think that my partner shared a healthy recipe because they thought it might help me eat healthier, but I don't think my partner asked me what I ate today to try to affect my eating. I would choose "Shared healthy eating information or recipes with me" but nothing else.*
- Choose "shared healthy eating information or recipes with me"
- Click next

Appendix F: Key Study 2 Measures

Daily Surveys

Instructions: Thank you for your continued participation in the Health and Relationships Diary Study!

Please complete this questionnaire in a separate room from your partner and do not discuss your answers with your partner. Please only begin the survey when you are in a quiet and private place with sufficient time to complete and submit the survey in a single session.

First, please enter the last 4 digits of your cell phone number. This is your participant ID and will not be retained for data analysis. _____

What is your partner's FIRST name? We will use this information in future questions in this survey, but we will not retain this data. _____

Instructions: Romantic partners can affect each other's eating behavior in many ways. Below is a list of behaviors that [PARTNER] may have engaged in that could affect your eating.

Please select all behaviors that [PARTNER] engaged in during the last 24 hours.

- o [PARTNER] showed support, understanding, or acceptance of my eating choices (e.g., avoided criticizing my eating).
- o [PARTNER] shared information, tips, or advice related to healthy eating (e.g., shared healthy recipes with me).
- o [PARTNER] set a good example by eating healthy or offered to eat healthy with me.
- o [PARTNER] tried to change our home or routines to help me (or us) eat healthier (e.g., purchased healthy food for us, cooked healthy foods).
- o [PARTNER] tried to make me feel bad about my eating (e.g., tried to make me feel guilty about my eating, criticized my eating).
- o [PARTNER] tried to make me feel good about my eating (e.g., made positive comments about my eating).
- o [PARTNER] monitored my eating choices or reminded me to eat healthier (e.g., noticed what I ate, reminded me to make healthy choices).
- o [PARTNER] talked about my eating, their eating, or someone else's eating (e.g., asked me what I ate today, talked about what they ate today).
- o [PARTNER] tried to persuade me to eat healthier (e.g., tried to change my attitudes about eating).
- o [PARTNER] did something to encourage me to eat LESS healthy (e.g., asked me to eat unhealthy foods with them).

o [PARTNER] did not do anything to affect my eating.

o I did not interact with [PARTNER] today.

[For each category participants select, they will see the following (for each category)]

You indicated that [PARTNER] showed support, understanding, or acceptance of your eating choices. Select all of the following behaviors that [PARTNER] engaged in.

o Listened to how I would like to do things regarding my eating choices.

o Showed they understand how I feel about my eating choices.

o Showed acceptance of my eating choices.

o Showed they care when we talked about my eating choices.

o Avoided criticizing my eating choices.

o Gave me space or showed patience with my eating choices.

o Other, please describe:

    _____

You indicated that [PARTNER] shared information related to healthy eating. Select all of the following behaviors that [PARTNER] engaged in.

o Gave me tips or suggestions about how to eat healthier.

o Shared healthy eating information or recipes with me (e.g., news articles, blogs, documentaries, YouTube videos).

o Planned healthy meals with me.

o Told me about how healthy eating could benefit me.

o Told me about how unhealthy eating could hurt me.

o Set healthy eating goals with me.

o Other, please describe:

    _____

You indicated that [PARTNER] set a good example by eating healthy or offered to eat healthy with you. Select all of the following behaviors that [PARTNER] engaged in.

o Cooked or ate healthy meals with me.

o Planned healthy meals with me (e.g., meal prep, planned to eat healthy on a date).

o Purchased healthy foods for me.

o Avoided eating or buying unhealthy foods around me.

o Set a good example by eating healthy foods.

o   Other, please describe:

   _____

You indicated that [PARTNER] tried to change your home or routines. Select all of the following behaviors that [PARTNER] engaged in.

o   Cooked healthy meals with me.

o   Planned healthy meals with me (e.g., meal prep, planned to eat healthy on a date).

o   Purchased healthy foods for me.

o   Avoided buying unhealthy foods.

o   Chose a healthy restaurant for us to go to.

o   Planned healthy eating routines with me.

o   Other, please describe:

   _____

You indicated that [PARTNER] tried to make you feel bad about your eating. Select all of the following behaviors that [PARTNER] engaged in.

o   Compared me to people who have unhealthy diets.

o   Expressed negative emotions (e.g., anger, frustration) about my eating choices.

o   Showed disapproval, judgment, or criticism of my eating choices.

o   Tried to make me feel guilty about my eating choices.

o   Tried to scare me about the consequences of unhealthy eating.

o   Withdrew or became silent when I made unhealthy eating choices.

o   Told me I would eat healthy if I cared about them.

o   Used humor or made jokes about my eating.

o   Withdrew affection when I made unhealthy eating choices.

o   Talked about my unhealthy eating choices to someone else or in front of someone else.

o   Disliked or made negative comments on my social media posts about my eating.

o   Other, please describe:

   _____

You indicated that [PARTNER] tried to make you feel good about your eating. Select all of the following behaviors that [PARTNER] engaged in.

- o Complimented or praised my eating choices.

- o Encouraged me to eat healthier.

- o Expressed positive emotions (e.g., happiness, pride) about my eating choices.

- o Conveyed confidence or reassurance in my ability to make healthy choices.

- o Talked about my healthy eating choices to someone else or in front of someone else.

- o Liked or made positive comments on my social media posts about my eating.

- o Other, please describe:

  _____

You indicated that [PARTNER] monitored your eating or reminded you to eat healthier. Select all of the following behaviors that [PARTNER] engaged in.

- o Left notes or reminders that I should eat healthier.

- o Nagged me to eat healthier.

- o Reminded me to eat healthier.

- o Noticed or commented on my eating choices.

- o Asked me what I ate today.

- o Dropped hints that I should eat healthier.

- o Pushed me to make healthy eating choices.

- o Other, please describe:

  _____

You indicated that [PARTNER] talked about your eating or their eating today. Select all of the following behaviors that [PARTNER] engaged in.

- o Discussed my eating with me.

- o Asked me what I ate today.

- o Commented on someone else's eating (e.g., stranger, co-worker, friend).

- o Talked about what they ate today.

- o Talked about my eating choices to someone else or in front of someone else.

- o Other, please describe:

  _____

You indicated that [PARTNER] tried to persuade you to eat healthier. Select all of the following behaviors that [PARTNER] engaged in.

- o Told me about how healthy eating could benefit me.

- o   Told me about how unhealthy eating could hurt me.

- o   Tried to reason with me/be logical about my eating.

- o   Persuaded me to eat healthier.

- o   Stated how important it is to them that I eat healthier.

- o   Asked me to eat healthier.

- o   Tried to involve other people to persuade me to eat healthier.

- o   Bargained with me to get me to eat healthier.

- o   Other, please describe:

  _____

You indicated that [PARTNER] did something to encourage me to eat less healthy. Please briefly describe what [PARTNER] did.

_____
_____
_____
_____
_____

Thanks! You indicated that [PARTNER] engaged in the behaviors below.

Sometimes romantic partners intentionally try to affect each other's eating behavior, such as when they want to help each other eat healthier. Other times, partners unintentionally affect each other's eating behavior by saying or doing things that affect their partner's eating without trying to do so.

Which of the following behaviors do you think [PARTNER] engaged in to **intentionally** affect your eating?

[Participants will be shown a list of behaviors they selected and will select any behaviors that apply]

Thanks!

Partners often have different reasons for trying to change each other's eating behavior. Sometimes partners try to affect each other's eating behavior due to their own best interests (e.g., what's best for them, personally). Other times, partners are motivated by their partner's interests (e.g., what's best for their partner).

To what extent were your partner's behaviors related to your eating today were motivated by what is best for them versus what is best for you?

- o 1 [PARTNER]'s behaviors were completely motivated by what is best for them.

- o 2

- o 3 [PARTNER]'s behaviors were equally motivated by what is best for them and what is best for me.

- o 4

- o 5 [PARTNER]'s behaviors were completely motivated by what is best for me.

Thanks!

Below is a series of items regarding how you thought, felt, and behaved during interactions with your partner in the last 24 hours. Please check all items that apply to your interactions with your partner in the last 24 hours.

1. I said something or acted in a way that could be hurtful to my partner.
2. I was critical or unpleasant toward my partner.
3. I openly shared and discussed my feelings and opinions with my partner.
4. I focused on maintaining or improving the quality of my interaction with my partner.
5. I was willing/tried to ignore anything my partner did or said that irritated or upset me.
6. I was willing to let my partner have things their way.
7. I wanted to be left alone and/or spend less time with my partner.
8. I withdrew from my partner and started doing my own thing.
9. I expressed gratitude for things my partner said or did.
10. I showed appreciation for things my partner said or did.
11. I showed affection toward my partner.
12. I did not interact with my partner today.

Thanks! Finally, we have a couple questions about your eating in the last 24 hours.

Think about what you ate in the last 24 hours. Envision what you ate for each of your meals and snacks. Next, think about how what you ate in the last 24 hours compares to the way you typically eat.

How would you describe the healthiness of your eating in the last 24 hours, compared to most days?
- 1 = Much less healthy than usual
- 2 = Moderately less healthy than usual
- 3 = Slightly less healthy than usual
- 4 = As healthy as usual
- 5 = Slightly more healthy than usual
- 6 = Moderately more healthy than usual
- 7 = Much more healthy than usual

Next, please select all items that are generally true of your eating in the last 24 hours.
- I ate a variety of foods.
- I monitored the portions of my snacks and meals.
- I ate fresh fruits.
- I ate fried foods.
- I drink high calorie beverages (e.g., soda, coffee drinks)
- I ate foods high in sugar
- I went long periods without eating during the day
- I drank eight classes (8 oz) or more of water
- I ate processed foods (e.g., chips, packaged meals, fast food).
- I ate natural foods.
- I ate foods with a high amount of fat.
- I ate fresh vegetables.

Thank you for completing today's diary study!

Reflection Questions

Thanks! We recognize that with the emergence of COVID-19 there have been a lot of changes in everyone's daily lives. As a final part of the Health and Relationships Diary Study, we would like to ask you about how things may or may not have changed over the past 2 weeks.

For the following questions, please think about how what you have experienced over the past two weeks compares to what you typically experienced over the first two months of this year (i.e., January and February).

How much did you interact with [PARTNER] in the last 2 weeks, compared to the first two months of this year (i.e., January and February)?
- 1 = I interacted with [PARTNER] much less than I did during January/February.
- 2 = I interacted with [PARTNER] somewhat less than I did during January/February.
- 3 = I interacted with [PARTNER] as much as I did during January/February.
- 4 = I interacted with [PARTNER] somewhat more than I did during January/February.
- 5 = I interacted with [PARTNER] much more than I did during January/February.

How many meals did you eat with [PARTNER] in the last 2 weeks, compared to the first two months of this year (i.e., January and February)?

- o 1 = I ate much fewer meals with [PARTNER] than I did during January/February.
- o 2 = I ate somewhat fewer meals with [PARTNER] than I did during January/February
- o 3 = I ate a similar number of meals with [PARTNER] as I did during January/February
- o 4 = I ate somewhat more meals with [PARTNER] than I did during January/February
- o 5 = I ate much more meals with [PARTNER] than I did during January/February

How motivated was [PARTNER] to try to affect your eating behavior in the last 2 weeks, compared to the first two months of this year (i.e., January and February)?

- o 1 = [PARTNER] was much less motivated than they were during January/February to try to affect my eating behavior
- o 2 = [PARTNER] was somewhat less motivated than they were during January/February to try to affect my eating behavior
- o 3 = [PARTNER] was as motivated they were during January/February to try to affect my eating behavior
- o 4 = [PARTNER] was somewhat more motivated than they were during January/February to try to affect my eating behavior
- o 5 = [PARTNER] was much more motivated than they were during January/February to try to affect my eating behavior

To what extent have you been motivated to improve your eating habits in the last 2 weeks, compared to the first two months of this year (i.e., January and February)?

- o 1 = I have been much less motivated than I was during January/February to improve my eating
- o 2 = I have been somewhat less motivated than I was during January/February to improve my eating
- o 3 = I have been as motivated as I was during January/February to improve my eating
- o 4 = I have been somewhat more motivated than I was during January/February to improve my eating
- o 5 = I have been much more motivated than I was during January/February to improve my eating

Below is a list of food groups. Please indicate the extent to which these food groups have been available to you in the last 2 weeks, compared to the first two months of this year (i.e., January and February).

1 = Much less available than during January/February; 3 = As available as January/February; 5 = Much more available than during January/February

- Fruits (Any fruit or 100% fruit juice counts as part of the Fruit Group. Fruits may be fresh, canned, frozen, or dried, and may be whole, cut-up, or pureed.)

- Vegetables (Any vegetable or 100% vegetable juice counts as a member of the Vegetable Group. Vegetables may be raw or cooked; fresh, frozen, canned, or dried/dehydrated; and may be whole, cut-up, or mashed.)

- Grains (Any food made from wheat, rice, oats, cornmeal, barley or another cereal grain is a grain product. Bread, pasta, oatmeal, breakfast cereals, tortillas, and grits are examples of grain products.)

- Dairy (All fluid milk products and many foods made from milk are considered part of this food group. Foods made from milk that retain their calcium content are part of the group. Foods made from milk that have little to no calcium, such as cream cheese, cream, and butter, are not.)

- Protein Foods (All foods made from meat, poultry, seafood, beans and peas, eggs, processed soy products, nuts, and seeds are considered part of the Protein Foods Group.)

To what extent have you *virtually* interacted (via text, phone calls, Skype, etc) with close relationship partners other than [PARTNER], such as friends and family members, in the last 2 weeks, compared to the first two months of this year (i.e., January and February)??
  - o 1 = I have interacted with close others much less than I did during January/February
  - o 2 = I have interacted with close others somewhat less than I did during January/February
  - o 3 = I have interacted with close others as much as I did during January/February
  - o 4 = I have interacted with close others somewhat more than I did during January/February
  - o 5 = I have interacted with close others much more than I did during January/February

To what extent have you interacted *in-person* with close relationship partners other than [PARTNER], such as friends and family members, in the last 2 weeks, compared to the first two months of this year (i.e., January and February)?

  - o 1 = I have interacted with close others much less than I did during January/February
  - o 2 = I have interacted with close others somewhat less than I did during January/February
  - o 3 = I have interacted with close others as much as I did during January/February
  - o 4 = I have interacted with close others somewhat more than I did during January/February
  - o 5 = I have interacted with close others much more than I did during January/February

Attention How much attention did [PARTNER] pay to your eating in the last 2 weeks, compared to the first two months of this year (i.e., January and February)?

  - o 1 = [PARTNER] paid much less attention to my eating than they did during January/February.
  - o 2 = [PARTNER] paid somewhat less attention to my eating than they did during January/February.
  - o 3 = [PARTNER] paid as much attention to my eating as they did during January/February.
  - o 4 = [PARTNER] paid somewhat more attention to my eating than they did during January/February.
  - o 5 = [PARTNER] paid much more attention to my eating than they did during January/February.

Has your employment status changed in the last 2 weeks? Employment status changes could reflect the loss or gain of employment, the loss or gain of work hours, or the loss or gain of wages.

  - Yes
  - No

[If yes] Which of the following aspects of your employment status changed? Select all that apply.

  - I gained employment
  - I lost employment
  - I took on more hours at work
  - I took on fewer hours at work

- My pay increased
- My pay decreased

Did anything happen in the last 2 weeks that was atypical, compared to the past 6 months? For example, were you or your partner sick? Were you unusually stressed? Did you or your partner celebrate a birthday? Please describe anything atypical that happened in your life during the last 2 weeks.

_____
_____
_____
_____
_____

Lastly, we're interested in your perceptions of your partner's behaviors related to your eating during the last 2 weeks.

You may have found [PARTNER]'s behaviors to be limiting. Limiting behaviors make you feel as if you are unable to or cannot make your own food choices to pursue your own goals. Rather, you feel obligated to make food choices based on what [PARTNER] prefers you should eat.

On the other hand, you may have found [PARTNER]'s behaviors to be supportive. Supportive behaviors make you feel as if you are able to or can make your own choices to pursue your own goals. Supportive behaviors also make you feel as if you are responsible for your own choices. You feel you can make food choices based on what you prefer to eat, rather than what [PARTNER] prefers you should eat.

How limiting versus supportive did you find [PARTNER]'s behaviors related to your eating, overall, during the last 2 weeks?
- o 1 = Extremely limiting (1)
- o 2 = Very limiting (2)
- o 3 = Somewhat limiting (3)
- o 4 = Neither limiting nor supportive (neutral) (4)
- o 5 = Somewhat supportive (5)
- o 6 = Very supportive (6)
- o 7 = Extremely supportive (7)

Appendix G: COVID-19 Items, Descriptive Statistics, and Sub-sample Differences

Thanks! We recognize that with the emergence of COVID-19 there have been a lot of changes in everyone's daily lives. As a final part of the Health and Relationships Diary Study, we would like to ask you about how things may or may not have changed over the past 2 weeks.

For the following questions, please think about how what you have experienced over the past two weeks compares to what you typically experienced over the first two months of this year (i.e., January and February).

How much did you interact with [PARTNER] in the last 2 weeks, compared to the first two months of this year (i.e., January and February)?
- o   1 = I interacted with [PARTNER] much less than I did during January/February. (1)
- o   2 = I interacted with [PARTNER] somewhat less than I did during January/February. (2)
- o   3 = I interacted with [PARTNER] as much as I did during January/February. (3)
- o   4 = I interacted with [PARTNER] somewhat more than I did during January/February. (4)
- o   5 = I interacted with [PARTNER] much more than I did during January/February. (5)

How many meals did you eat with [PARTNER] in the last 2 weeks, compared to the first two months of this year (i.e., January and February)?
- o   1 = I ate much fewer meals with [PARTNER] than I did during January/February.
- o   2 = I ate somewhat fewer meals with [PARTNER] than I did during January/February
- o   3 = I ate a similar number of meals with [PARTNER] as I did during January/February
- o   4 = I ate somewhat more meals with [PARTNER] than I did during January/February
- o   5 = I ate much more meals with [PARTNER] than I did during January/February

How motivated was [PARTNER] to try to affect your eating behavior in the last 2 weeks, compared to the first two months of this year (i.e., January and February)?
- o   1 = [PARTNER] was much less motivated than they were during January/February to try to affect my eating behavior
- o   2 = [PARTNER] was somewhat less motivated than they were during January/February to try to affect my eating behavior

o 3 = [PARTNER] was as motivated they were during January/February to try to affect my eating behavior

o 4 = [PARTNER] was somewhat more motivated than they were during January/February to try to affect my eating behavior

o 5 = [PARTNER] was much more motivated than they were during January/February to try to affect my eating behavior

To what extent have you been motivated to improve your eating habits in the last 2 weeks, compared to the first two months of this year (i.e., January and February)?

o 1 = I have been much less motivated than I was during January/February to improve my eating

o 2 = I have been somewhat less motivated than I was during January/February to improve my eating

o 3 = I have been as motivated as I was during January/February to improve my eating

o 4 = I have been somewhat more motivated than I was during January/February to improve my eating

o 5 = I have been much more motivated than I was during January/February to improve my eating

Below is a list of food groups. Please indicate the extent to which these food groups have been available to you in the last 2 weeks, compared to the first two months of this year (i.e., January and February).

1 = Much less available than during January/February; 3 = As available as January/February; 5 = Much more available than during January/February

- Fruits (Any fruit or 100% fruit juice counts as part of the Fruit Group. Fruits may be fresh, canned, frozen, or dried, and may be whole, cut-up, or pureed.)

- Vegetables (Any vegetable or 100% vegetable juice counts as a member of the Vegetable Group. Vegetables may be raw or cooked; fresh, frozen, canned, or dried/dehydrated; and may be whole, cut-up, or mashed.)

- Grains (Any food made from wheat, rice, oats, cornmeal, barley or another cereal grain is a grain product. Bread, pasta, oatmeal, breakfast cereals, tortillas, and grits are examples of grain products.)

- Dairy (All fluid milk products and many foods made from milk are considered part of this food group. Foods made from milk that retain their calcium content

are part of the group. Foods made from milk that have little to no calcium, such as cream cheese, cream, and butter, are not.)

- Protein Foods (All foods made from meat, poultry, seafood, beans and peas, eggs, processed soy products, nuts, and seeds are considered part of the Protein Foods Group.)

To what extent have you *virtually* interacted (via text, phone calls, Skype, etc) with close relationship partners other than [PARTNER], such as friends and family members, in the last 2 weeks, compared to the first two months of this year (i.e., January and February)??

- o 1 = I have interacted with close others much less than I did during January/February
- o 2 = I have interacted with close others somewhat less than I did during January/February
- o 3 = I have interacted with close others as much as I did during January/February
- o 4 = I have interacted with close others somewhat more than I did during January/February
- o 5 = I have interacted with close others much more than I did during January/February

To what extent have you interacted *in-person* with close relationship partners other than [PARTNER], such as friends and family members, in the last 2 weeks, compared to the first two months of this year (i.e., January and February)?

- o 1 = I have interacted with close others much less than I did during January/February
- o 2 = I have interacted with close others somewhat less than I did during January/February
- o 3 = I have interacted with close others as much as I did during January/February
- o 4 = I have interacted with close others somewhat more than I did during January/February
- o 5 = I have interacted with close others much more than I did during January/February

How much attention did [PARTNER] pay to your eating in the last 2 weeks, compared to the first two months of this year (i.e., January and February)?

- o 1 = [PARTNER] paid much less attention to my eating than they did during January/February.
- o 2 = [PARTNER] paid somewhat less attention to my eating than they did during January/February.

- o 3 = [PARTNER] paid as much attention to my eating as they did during January/February.
- o 4 = [PARTNER] paid somewhat more attention to my eating than they did during January/February.
- o 5 = [PARTNER] paid much more attention to my eating than they did during January/February.

Has your employment status changed in the last 2 weeks? Employment status changes could reflect the loss or gain of employment, the loss or gain of work hours, or the loss or gain of wages.
- Yes
- No

[If yes] Which of the following aspects of your employment status changed? Select all that apply.
- I gained employment
- I lost employment
- I took on more hours at work
- I took on fewer hours at work
- My pay increased
- My pay decreased

Study 2 Participant Responses to COVID-19 Related Questions

	Mean (SD) or Frequency	
	Pre-COVID-19 Sample ($n = 46$)	COVID-19 Sample ($n = 101$)
Amount of Partner Interaction During Diary Study*	$M = 3.19$ ($SD = 0.66$)	$M = 4.41$ ($SD = 0.75$)
Amount of Attention Partners Paid to Participant's Eating During Diary Study*	$M = 2.90$ ($SD = 0.54$)	$M = 3.28$ ($SD = 0.63$)
Partner Motivation to Enact Social Control During Diary Study	N/A	$M = 3.04$ ($SD = 0.63$)
Own Motivation to Improve Eating Habits During Diary Study	N/A	$M = 3.33$ ($SD = 1.05$)
Food Group Availability	N/A	
Fruits	N/A	$M = 2.80$ ($SD = 0.87$)
Vegetables	N/A	$M = 2.83$ ($SD = 0.86$)
Grains	N/A	$M = 3.13$ ($SD = 0.73$)

Dairy	N/A	$M = 2.83$ ($SD = 0.80$)
Protein Foods	N/A	$M = 2.88$ ($SD = 0.72$)
Virtual Interactions with Other Close Relationship Partners During Diary Study	N/A	$M = 4.43$ ($SD = 0.73$)
In-Person Interactions with Other Close Relationship Partners During Diary Study	N/A	$M = 1.34$ ($SD = 0.79$)
Employment Status Changes (yes = 21)	N/A	
Gained Employment	N/A	1 (< 1%)
Lost Employment	N/A	8 (8%)
Took on More Hours at Work	N/A	2 (2%)
Took on Fewer Hours at Work	N/A	8 (8%)
Pay Increased	N/A	0 (0%)
Pay Decreased	N/A	5 (5%)
Perception of Partner Behaviors as Limiting Versus Supportive During Diary Study*	$M = 4.83$ ($SD = 1.18$)	$M = 5.37$ ($SD = 1.17$)

Note. * Indicates that the variable was significantly predicted by group. M = Mean. SD = Standard deviation.

101 participants (69% of the sample) completed the COVID-19 questions. The table above shows the means and standard deviations (or frequencies) of the variables that were assessed for both groups. For the three items that were similar across the two groups, independent samples t-tests were conducted to examine whether the mean response differed as a function of whether the diary study was completed during COVID-19 (March and April of 2020) or prior to COVID-19 (October-November of 2019 or January-February of 2020). Participants who completed the diaries during COVID-19 reported that they interacted more frequently with their partner ($t(76.27) = -9.51$, $p < .001$), their partner paid more attention to their eating behavior ($t(75.37 = -3.54$, $p < .001$), and their partner engaged in more supportive behaviors related to their eating

($t(68.66) = -2.44$, $p < .05$), compared with participants who completed the diaries prior to the COVID-19 pandemic.

Participants reported that their partner was "as motivated as usual" to try to affect their eating behavior ($M = 3.04$) and that they were as motivated as usual to try to improve their own eating behavior ($M = 3.33$). Participants reported that most groups were slightly less available than usual (range of 2.80 for fruits to 3.13 for grains) during the study period compared to January and February. Participants indicated that they virtually interacted with close others "somewhat more" and interacted in-person with close others "much less" during the study period, compared to January and February. Most participants did not experience employment changes during the study period (79%), but those who did reported losing employment or reduced hours at work.