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Energized by love: Thinking about romantic relationships increases positive affect and blood glucose levels

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Abstract

We assessed the impact of thinking of a current romantic partner on acute blood glucose responses and positive affect over a short period of time. Participants in romantic relationships were randomly assigned to reflect on their partner, an opposite-sex friend, or their morning routine. Blood glucose levels were assessed prior to reflection, as well as at 10 and 25 min postreflection. Results revealed that individuals in the routine and friend conditions exhibited a decline in glucose over time, whereas individuals in the partner condition did not exhibit this decline (rather, a slight increase) in glucose over time. Reported positive affect following reflection was positively associated with increases in glucose, but only for individuals who reflected on their partner, suggesting this physiological response reflects eustress. These findings add to the literature on eustress in relationships and have implications for relationship processes.

Descriptors: Partner reflection, Glucose, Positive affect, Stress, Close relationships

"Love is that splendid triggering of human vitality."
—José Ortega y Gasset

It is well known that relationship experiences produce stress responses in the body (Loving, Heffner, & Kiecolt-Glaser, 2006). Indeed, prior research has found that the experience of romantic, passionate love in particular can activate the sympathetic-adrenal-medullary (SAM) and hypothalamic-pituitary-adrenal (HPA) pathways of the endocrine system. Biological consequences of SAM activation in response to relationship stimuli (e.g., thinking about one's romantic partner) include increased levels of norepinephrine and other catecholamines (Fisher, 1998). Similarly, individuals within the first 6 months of relationships exhibit higher circulating levels of cortisol via HPA activity (Marazziti & Canale, 2004), and also show elevated levels of nerve growth factor (Emanuele et al., 2006). Moreover, one recent experimental study found that asking women higher in relationship thinking to reflect on their current romantic partner (vs. a friend) triggered acute cortisol reactivity (Loving, Crockett, & Paxson, 2009). These findings indicate that early-stage romantic love, an element of relationships marked by strong positive feelings (Kim & Hatfield, 2004), may yield biological responses that reflect euphoria. However, the question of whether physiological stress responses are associated with the experience of positive affect in response to relationship stimuli has not yet been tested empirically. The present study builds on prior work to clarify the links between bodily responses triggered by qualitatively positive relationship stimuli and subsequent affect.

Although stress is typically ascribed a negative valence, Selye (1978), who originally coined the term "stress," made a point to distinguish between *distress* ("bad" stress) and *eustress* ("good" or "euphoric" stress). Whether a biological response reflects distress or eustress seems to reflect the valence of the discrepancy between a person's perceived state and their desired state, providing the discrepancy is important to the person (Edwards & Cooper, 1988). For example, suppose Sherri has high hopes of attaining a happy, healthy relationship (desired state). If she meets Mark and is treated poorly in their relationship, resulting in her feeling unloved (perceived state), she may be more prone to experience distress because her relationship with Mark has fallen short of her hopes. Alternatively, if Sherri meets Mark and is treated exceptionally well in their relationship, resulting in her feeling loved (perceived state), she may be more prone to experience eustress because her relationship with Mark has exceeded her hopes. Thus, in contrast to the oft-studied distress concept, eustress responses are argued to be generated by positive experiences and marked by positive affect (see Edwards & Cooper, 1988; Loving & Wright, 2012).

Although the majority of research on relationships and bodily stress responses has focused on negative relationship events and subsequent distress responses, researchers examining the physiological correlates of romantic love have speculated that hormone markers of SAM and HPA pathway activity may be associated with positive feelings in this context (e.g., Loving et al., 2009). Consistent with this idea, women experiencing higher passion who are subliminally primed with their partner's name (vs. a friend's name or control) respond more quickly to positive emotion words than

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neutral words in a subsequent lexical decision task (Bianchi-Demicheli, Grafton, & Ortigue, 2006). Additionally, other studies suggest that reminding people in long-term relationships of their love for their partner can be uplifting, filling them with psychological vitality and leading them to be more open to exploration (Luke, Sedikides, & Carnelley, 2012). Any stress responses associated with the experience of romantic love, therefore, may reflect eustress rather than distress.

There are three notable limitations of prior research investigating eustress responses triggered by relationship experiences. First, most eustress research has observed individuals in relationships of less than 6 months (for an exception, see Schoenfeld & Loving, 2013) and/or recruited based on specific scores on measures of passionate love. Although informative, such inclusion criteria yield a somewhat limited view of when and how relationship experiences may yield physiological eustress. Second, experimental studies of psychophysiology and romantic love often exclude a control condition that would allow for an optimal test of resultant physiological responses being unique to the predicted context. Third, and perhaps most importantly, most previous work on this topic has not directly linked felt positive affect with physiological responses; thus, no explicit empirical evidence currently exists as to whether any observed physiological reactions to the romantic love context indeed reflect eustress. The present study addressed these limitations and sought to extend Loving et al. (2009) by utilizing a sample of individuals whose relationships encompassed a much wider range of relationship lengths, including both nonromantic relationship and nonrelationship control groups, and directly measuring positive affect postmanipulation.

In this research, blood glucose levels served as the primary physiological indicator of a stress response. SAM and HPA pathway activity mobilizes glucose into the bloodstream, "energizing" individuals so they may confront whatever stressor (good or bad) is at hand (Sapolsky, Romero, & Munck, 2000). In other words, alterations in glucose that occur in response to stress demonstrate similar patterns to that of cortisol and other hormones. Blood glucose levels, therefore, represent an additional biological indicator of the stress response. Notably, assessing blood glucose is both simple and economical; a person's blood glucose levels can be measured reliably and instantaneously at a small cost (Kristensen, Monsen, Skeie, & Sandberg, 2008).

Guided by findings indicating that love triggers SAM (e.g., Fisher, 1998) and HPA (e.g., Loving et al., 2009) pathway responses, and that activation of these systems mobilizes blood glucose (Sapolsky et al., 2000), we hypothesized that individuals who reflected on their current romantic partner would exhibit higher blood glucose levels over time compared to individuals who reflected on their morning routine or an opposite-sex friend. Additionally, because love can be experienced psychologically as positive and energizing (Luke et al., 2012), we also predicted that increases in glucose would be uniquely associated with positive affect for those thinking about their romantic partner.

Method

Participants and Design

The sample comprised 192 individuals (139 women, 53 men) recruited from a local university and surrounding community who participated in exchange for partial course credit or $15 CDN. Participants were eligible if they were currently in a relationship lasting at least 1 month and if they did not have a medical condition related to glucose (e.g., diabetes). We excluded the data of nine participants prior to conducting data analysis: two were ineligible for the study, four failed to follow instructions before and/or during the experiment, and three had major problems with experimental tasks, making their data unusable. This left a final sample of 183 (133 women, 50 men).

Participants were 18–41 years of age ($M = 22.36$, $SD = 3.93$) and currently in relationships of 1–161 months ($M = 26.22$, $SD = 28.82$). The majority of participants (87%) reported dating their current partner casually or exclusively; 13% reported being common-law, engaged, or married. A 3 (Reflection: routine [$N = 61$] vs. friend [$N = 60$] vs. partner [$N = 62$]) × 3 (Glucose Measurement: baseline, reflection + 10, reflection + 25) mixed model design was implemented; reflection condition was between-subjects, whereas glucose measurement was a within-subjects repeated measure.

Procedure

Participants were instructed not to eat or drink anything other than water for 3 h prior to participation to allow blood glucose levels to stabilize (see, e.g., Gailliot et al., 2007). All study sessions were conducted between 2:00 pm and 6:00 pm to control for diurnal patterns in relevant hormone secretion (see Loving et al., 2009). We did not directly measure hormones often associated with SAM and HPA pathways (norepinephrine and cortisol, respectively) in the present study; however, because the theoretical rationale underlying our glucose hypotheses was based on SAM and HPA pathway activation, we felt it prudent to take diurnal patterns into account. There is also some evidence that metabolic profiles including glucose also exhibit relatively stable levels between 2:00 pm and 6:00 pm, provided a person has not consumed food or drink immediately before (see Daly et al., 1998; Suckale & Solimena, 2008). Participants completed a demographic questionnaire and provided their first glucose sample (baseline). Glucose was measured in mg/dL using single-use disposable lancets and an Accu-Chek Aviva Nano meter.[1]

Next, participants underwent one of three guided imagery exercises. All participants were first asked to relax by breathing deeply with their eyes closed (these protocols are standard for relaxation exercises, see Loving et al., 2009). They were then instructed to reflect on a particular topic that varied depending on their experimental condition assignment. In the routine reflection condition, participants began by picturing their room and visualizing all the details about it. They then thought about their morning routine (e.g., what they do after they wake up, how they go about their day). In the friend reflection condition, participants pictured the face of an opposite-sex friend and were told to visualize all the details about him or her. They then thought about their relationship with their friend (e.g., when they first met their friend, things they enjoy doing with their friend). In the partner reflection condition, participants pictured the face of their current romantic partner and were told to visualize all the details about him or her. They then thought about their relationship with their partner (e.g., when they first realized they were in love with their partner, how they feel when they are with their partner). The friend and partner scripts were the same scripts developed and utilized by Loving et al.

1. Accu-Chek Aviva glucose monitoring meters demonstrate a high precision of measurement, and results from such meters are compatible with tests of blood plasma (see Kristensen et al., 2008).

(2009); the routine script was developed by the current authors (all scripts are available upon request). Each guided imagery exercise took approximately 5–6 min to complete. After the guided imagery, participants watched a neutral video of nature scenes from the Planet Earth television series for 10 min. They then provided their second glucose sample (reflection + 10), as SAM system activity, which mobilizes glucose into the bloodstream, peaks 5–10 min poststressor (Nater et al., 2006).

Participants then completed the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), in which they rated their current feelings across 20 items, 10 representing positive affect (e.g., "excited") and 10 representing negative affect (e.g., "distressed"), on a 5-point scale (1 = *very slightly or not at all*, 5 = *extremely*), $\alpha = .90$ (positive affect), $\alpha = .89$ (negative affect). They next completed a simple filler task in which they crossed letter *e*s out of a selection of text for 10 min, after which they provided their third and final glucose sample (reflection + 25). Research suggests that HPA axis activity, which also mobilizes glucose into the bloodstream, peaks 20–30 min poststressor (Dickerson & Kemeny, 2004), providing the rationale for this final glucose assessment. Lastly, participants were debriefed and dismissed.

Results

Assessing Potential Covariates

We first tested the significance of potential covariates predicting blood glucose levels, including health behaviors known to influence physiological processes (birth control use, body mass index (BMI), smoking and alcohol habits, amount of sleep obtained the prior night, time of waking the day of the experimental session), age, and relationship length. Only smoking habits predicted blood glucose levels, $\beta = .52$, $SE = .24$, $p = .03$, with smokers having higher overall blood glucose levels than nonsmokers. Importantly, none of the results presented below changed when smoking status was entered as a covariate in the analyses.

Glucose

In this study, glucose assessments were nested within individuals, meaning data have a two-level nested structure with glucose assessment at the lower level (Level 1) and individuals at the upper level (Level 2). As a result, independence of data points can only be assumed to exist from individual to individual. The data were therefore analyzed using a multilevel modeling (MLM) approach, following Singer's (1998) suggestions for estimating trajectories across repeated assessments within individuals as well as interactions between upper level (e.g., experimental condition) and lower level (e.g., trajectory of glucose assessments) variables.[2] In brief, estimation using MLM has two steps. In the first step, an analysis is computed for each upper level unit (i.e., individual). In our analyses, time of measurement, a lower-level variable, was regressed on glucose levels, generating a slope (i.e., a regression coefficient modeling the trajectory of glucose levels across time of measurement) and an intercept (i.e., an average glucose level) for each participant. In the second step, the coefficients from the first step are aggregated across the upper-level units, or individuals, and regressed on upper-level variables (i.e., the dummy codes for experimental conditions). Statistical software conducts these analytical steps simultaneously. In our analyses, therefore, we could test for mean differences in blood glucose levels between experimental conditions. Most importantly, however, we could also test for differences in the trajectories of glucose levels over time between experimental conditions. In our analyses, we specified the intercept as a random effect. Time of measurement was specified as a fixed effect, because time of measurement represented set moments before and after the guided imagery manipulation (see Blackwell, Mendes de Leon, & Miller, 2006).

For our analyses, the initial glucose assessment was coded as 0 (baseline), with subsequent assessments coded as 1 (reflection + 10), and 2 (reflection + 25). Gender was effect coded (−1 = men, 1 = women). To test for differences in glucose trajectories across reflection conditions, two dummy codes were created to represent each condition (Aiken & West, 1991), and interaction terms between time of assessment and each dummy code were entered as predictors. This approach allows for the comparison of glucose trajectories between what is coded the comparison group (i.e., given values of 0 for both dummy codes) and the other two conditions (i.e., one condition given values of 1 and 0, the other condition given values of 0 and 1) in one model. In order to compare the trajectories of glucose between these other two conditions, a second model was run that simply changed the comparison group in the dummy coding scheme. These two models therefore allowed us to compare the trajectories of glucose across all three study conditions. In the first model, the partner condition served as the comparison group for the friend and routine conditions; in the second model, the routine condition as the comparison group in order to test for potential differences between the friend and routine conditions. Significant interactions between time of measurement and the dummy codes indicate differences in the trajectory of glucose between the study conditions being compared. No interactions involving participant gender or curvilinear effects of time emerged, and those interactions were removed from final models. Effect sizes, or Cohen's *d*, associated with the difference in trajectories between conditions were estimated following the suggestions of Feingold (2009).

On average, blood glucose levels decline over time in the absence of ingesting calories; thus, in this study the typical rate of glucose decline should be best observed in the routine condition. Statistically, then, the appropriate comparison for the trajectory of blood glucose levels in the partner and friend conditions is not with zero change, but rather with the trajectory of change observed in the routine condition. As predicted, the trajectory of blood glucose levels significantly differed between the partner and routine conditions, $\beta = -.21$, $SE = .07$, $p = .002$, $d = .44$, as well as between the partner and friend conditions, $\beta = -.16$, $SE = .07$, $p = .02$, $d = .34$. The trajectory of blood glucose levels did not differ between the routine and friend conditions, $\beta = .05$, $SE = .07$, $p = .49$, $d = .10$ (see Figure 1).

Simple slopes analyses revealed a significant negative glucose trajectory in the routine condition, $\beta = -.13$, $SE = .05$, $p = .007$, and a marginally significant negative trajectory in the friend condition, $\beta = -.08$, $SE = .05$, $p = .08$. In the partner condition, however, a positive trend emerged for glucose trajectory, $\beta = .08$, $SE = .05$, $p = .11$. Given that in the routine and friend conditions blood glucose levels declined over time, the significant differences in trajectories between the partner condition and the other two conditions, coupled with the positive trend in the partner condition,

2. MLM is superior to ordinary least squares-based analyses for analyzing nested data because it provides methods for simultaneously modeling the error involved with sampling observations at multiple levels.

suggests that partner reflection resulted in a relative increase in glucose.

Positive Affect

To test our hypothesis that the glucose results represent eustress rather than distress, we first conducted a one-way analysis of variance (ANOVA) with positive affect as the outcome variable and reflection condition as the predictor variable. A main effect of reflection condition emerged, $F(2,180) = 4.65$, $p = .01$, $d = .32$; reported positive affect was higher in the partner condition ($M = 3.38$, $SD = 0.81$) compared to the routine ($M = 3.05$, $SD = 0.79$) and friend ($M = 2.97$, $SD = 0.79$) conditions, $F(2,180) = 5.24$, $p = .02$, $d = .41$ and $F(2,180) = 8.29$, $p = .005$, $d = .51$, respectively. Positive affect scores did not differ between the routine and friend conditions, $F(2,180) = 0.35$, $p = .55$, $d = .10$. Notably, a similar ANOVA with negative affect as the outcome variable yielded no main effect of reflection condition, $F(2,180) = 0.94$, $p = .39$, $d = .14$. Effects of the guided imagery manipulation, therefore, seemed to influence positive affect specifically.

To clarify the association between positive affect and glucose for individuals thinking about their current romantic partner, we reran the model used to analyze the trajectory of blood glucose levels across conditions, but now including positive affect and the interactions of positive affect with the reflection condition dummy codes. An interaction between positive affect and the trajectory of blood glucose levels emerged in the partner condition, $\beta = .19$, $SE = .06$, $p = .002$, but not in the routine or friend conditions, $\beta = -.08$, $SE = .06$, $p = .19$ and $\beta = -.02$, $SE = .06$, $p = .77$, respectively. Decomposing this interaction, we found that participants who experienced higher positive affect following partner reflection (represented in the model as a positive affect score one standard deviation above the mean) exhibited a positive blood glucose trajectory, $\beta = .19$, $SE = .06$, $p = .002$, meaning they had significantly higher blood glucose levels over time compared to the baseline assessment (see Figure 2). In contrast, participants who experienced lower positive affect following partner reflection (represented in the model as a positive affect score one standard deviation below the mean) exhibited a negative but nonsignificant blood glucose trajectory, $\beta = -.13$, $SE = .08$, $p = .11$. Thus, increases in blood glucose levels over time in the partner condition were associated with reports of higher positive affect, consistent with hypotheses.

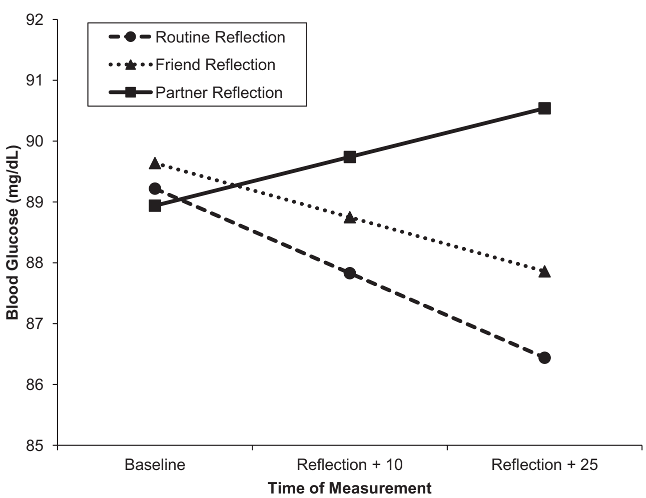

Figure 1. Blood glucose trajectory across assessments as a function of reflection condition.

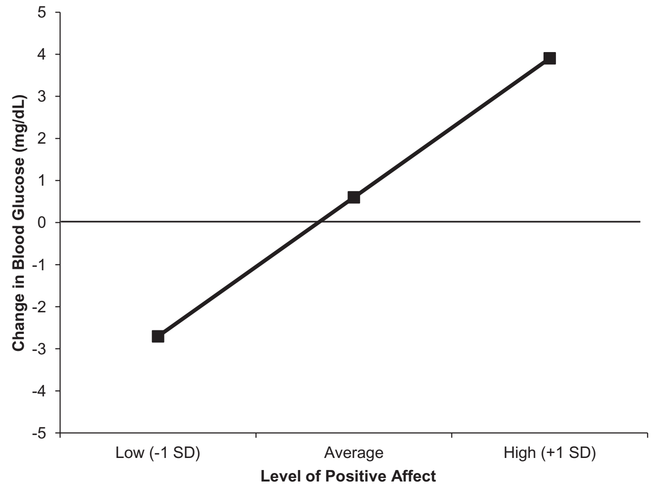

Figure 2. Association of positive affect and change in blood glucose levels within the partner reflection condition.

Discussion

The present study experimentally tested the distinction between distress and eustress in response to relationship stimuli (see Loving & Wright, 2012; Selye, 1978). In particular, we hypothesized that reflecting on relationship elements involving romantic love would trigger bodily stress responses, consistent with prior research (e.g., Loving et al., 2009). We further predicted that these responses would reflect eustress (stress linked with positive affect) as opposed to distress (stress linked with negative affect), given the established associations between romantic love and positive and euphoric feelings (see Bianchi-Demicheli et al., 2006; Kim & Hatfield, 2004; Luke et al., 2012).

Consistent with predictions, blood glucose levels relatively increased following partner (vs. routine and friend) reflection. Additionally, reported positive affect was higher for individuals who thought about their current romantic partner compared to individuals who thought about their morning routine or a friend. Importantly, positive affect was associated with increases in blood glucose levels only in the partner condition, and, moreover, physiological responses to experimental stimuli were not linked with negative affect in any condition. This pattern of results provides compelling evidence for our (and others') argument that the acute biological "stress" responses to positive relationship stimuli represent a positive form of stress, or what Selye (1978) referred to as eustress. A key strength of the present research is the utilization of an experimental design with both nonromantic relationship and nonrelationship control conditions, allowing for causal inferences to be made about the propensity for romantic relationships specifically to trigger eustress responses. This study also utilized a sample of individuals who had been involved in their relationships for a longer average length of time, as well as featured a large number of participants (60 or more) in each condition, compared to prior experimental investigations (e.g., Loving et al., 2009).

Our research dovetails with previous work demonstrating that partner reflection stimulates increases in cortisol levels, particularly for high relationship thinkers (Loving et al., 2009), as well as research linking partner stimuli to SAM system activation (e.g., increases in norepinephrine; Fisher, 1998) and increased salience of positive affect words (Bianchi-Demicheli et al., 2006). Notably, the current study extends this research in three main ways. First, we directly assessed and linked positive affect to our physiological outcome, and thus the present research is the first to provide concrete empirical support of eustress in response to partner reflection. Prior investigations have speculated that biological responses resulting from the experience of romantic love are "eustressful" (see Emanuele et al., 2006; Loving et al., 2009; Marazziti & Canale, 2004), but these studies did not include measures of positive and negative feelings to tease apart the exact affective nature of such responses.

Second, we demonstrated eustress effects in more established relationships, suggesting that individuals can experience eustress even after being together for a considerable amount of time. Thus, our research allows for the generalization of prior work on stress responses to relationship stimuli (e.g., Emanuele et al., 2006; Loving et al., 2009) to romantic relationships that have lasted beyond the initial stages of falling in love. Our findings are also consistent with a recent study examining established couples transitioning into relationship statuses that imply greater commitment (i.e., discussing the possibility of marriage; see Schoenfeld & Loving, 2013). However, we did not examine the major relationship transitions involved when falling in love or negotiating a new relationship status as most prior studies have. Perhaps intriguingly, since we explored eustress effects to comparatively simple relationship stimuli (e.g., reflecting on how much one loves his or her partner), the present research suggests that positive relationship discrepancies between desired and perceived states (see Edwards & Cooper, 1988) may be stimulated at any time as opposed to solely around major relationship transitions.

Third, our findings suggest that blood glucose is an additional effective outcome measure when assessing physiological response to relationship experiences. Glucose is mobilized into the blood when the SAM and HPA pathways are activated (Sapolsky et al., 2000), and thus blood glucose levels mirror activation patterns of cortisol and other biological outcomes associated with those systems. Blood glucose levels can be measured reliably and precisely, and the materials needed to measure glucose levels are both readily available and economical for researchers. Furthermore, because such materials are economical, physiological stress responses to experimental stimuli can be assessed relatively quickly in a large sample of participants.

The finding that partner reflection yields eustress responses also fits with research linking happy, secure relationships to psychological energy and desire for exploration (see Luke et al., 2012). It seems that, when happy, partner reflection triggers physiological outcomes consistent with the idea that romantic partners are secure bases, inspiring people to explore their environment. Indeed, other research has suggested that stress (e.g., cortisol) responses to relationship partners may function to solidify social bonds (Diamond, 2001). Eustress, then, may be a way for the body to motivate individuals to be with, and stay with, their romantic partners. Put another way, a likely positive consequence of mobilizing glucose in these circumstances is that it may reflect arousal, a defining characteristic of early-stage romantic (or passionate) love. Alternatively (or additionally), any extra energy provided to the brain via partner reflection-associated glucose increases could serve to enhance individuals' memory for events surrounding their partners and relationships. Falling in love is one of the most important events in individuals' lives (Berntsen & Rubin, 2004). Not surprisingly, individuals often hold and report remarkably vivid memories for "love" relationships (Harvey, Flanary, & Morgan, 1986). Perhaps not coincidentally, glucose promotes learning and overall cognitive performance, including the formation and recall of memories. Thus, it is possible that the increases in glucose in response to partner reflection serve to promote memory formation, although the exact adaptive function of such cognitive benefits in this context is unclear. This possibility is readily amenable to future studies.

Future research could also fruitfully investigate how eustress responses (e.g., positive affect combined with coping resources) might protect individuals from adverse psychological events. For example, Kumashiro and Sedikides (2005) found that reminders of a close positive relationship led individuals to be more resilient in the face of failure feedback and to approach a subsequent difficult task as a challenge rather than a threat. These authors, however, did not distinguish between types of close others (e.g., friend vs. family vs. romantic partner) in their analyses. In light of our findings, it may be that thinking of the positive aspects of a romantic partner and relationship are particularly "energizing" for individuals psychologically and physiologically, helping them to cope with later distress.

The present study has implications for health research, as prior research has shown that positive emotions can buffer individuals against potentially deleterious physical and mental health problems (Cohen & Hoberman, 1983; Kok et al., 2013). Furthermore, physiological reactivity resulting from rewarding stressors (i.e., "eustressful" responses) can aid in healthy brain development (Leuner, Glasper, & Gould, 2010) and have other possible buffering effects against physical illness (see Loving & Wright, 2012) as well as depression, anxiety, and self-consciousness (Traupmann & Hatfield, 1981). Over time, then, it is possible that the increases in positive affect observed in the present study could benefit health (see also Cohen & Pressman, 2006; Pressman et al., 2009). That is, it may be that positive cognitions and emotions that result from relationships may at least partially account for the strong link between satisfying social relationships and morbidity/mortality outcomes (see Diamond & Fagundes, 2012; Holt-Lunstad, Smith, & Layton, 2010).

We consider two limitations of the current research before concluding. First, we did not directly assess hormones associated with the SAM and HPA pathways. Nonetheless, we utilized the same guided imagery exercise (with the addition of a routine script) known to yield cortisol reactivity in response to partner reflection (Loving et al., 2009), and prior research has also found SAM system activation in response to partner stimuli (Fisher, 1998); therefore, given how SAM and HPA hormones can mobilize glucose (Sapolsky et al., 2000), we believe our results reflect activation of these systems. Nevertheless, measuring hormones associated with SAM and HPA pathways, in addition to blood glucose, in response to partner reflection should be included in future research in order to detail the biological cascade of events concomitant with eustress responses, thus providing even stronger empirical support for our hypotheses. Second, our findings were framed as eustress because positive affect was uniquely associated with the positive trajectory of blood glucose levels in the partner condition specifically. It is possible, however, that individuals in our sample were in happy relationships, perhaps predisposing them to experience eustress when reflecting on their romantic partner. Future research involving individuals in unhappy relationships may find that partner reflection triggers distress responses (e.g., associations between physiological activation and negative affect).

In conclusion, certain elements of romantic relationships, such as reflecting on one's love for a romantic partner, can trigger eustress responses in the body that are positive and energizing. The results of this research provide a foundation from which to explore additional circumstances in which relationship experiences can yield eustress responses, and the potential for these responses to positively impact individuals psychologically and physiologically over time.

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