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Unpacking Social Hypersensitivity: Vulnerability to the Absence of Positive Feedback

Mina Cikara[1] and Joan S. Girgus[1]

Abstract

Navigating social life requires accurately calibrated sensitivity to external feedback, thus extreme sensitivity to external feedback may be maladaptive. Using a daily diary design, the authors investigated whether the relationship between social hypersensitivity and daily events predicted level, lability, and reactivity of both self-esteem and affect. Relative to their less sensitive peers, socially hypersensitive people exhibited lower levels of self-esteem and greater negative affect and experienced greater fluctuations in self-esteem and negative affect. Although most people were negatively reactive to the presence of negative feedback, socially hypersensitive people were negatively reactive to the *absence* of positive feedback as well. The authors argue that reactivity to the absence of positive feedback is a fundamental, heretofore untested aspect of what makes social hypersensitivity a pernicious orientation.

The navigation of social life requires people to engage in dozens of social interactions every day, from intimate moments with spouses and conversations with family and friends to glances exchanged between absolute strangers. Each of these interactions is replete with positive and negative social feedback. If, however, people's sensitivity to social feedback is inaccurately calibrated, relatively minor cues of social approval and disapproval may profoundly influence self-worth and affect.

Although some sensitivity to social feedback is necessary, it is not clear that more social sensitivity is always related to better interpersonal and intrapersonal outcomes. Our intuitions might suggest otherwise: Few people cite their thin-skinned friends as beacons of happiness and well-being. Indeed, research from the clinical and personality literatures demonstrates that social hypersensitivity (or *sociotropy* in the clinical literature) is maladaptive; it has been linked to greater vulnerability to negative outcomes such as increased depressive symptoms and chronic negative affect in response to interpersonal stress (Beck, 1983, 1987). The aim of this investigation is to examine *how* social hypersensitivity leads to this increased vulnerability.

Most research examining individual differences in sensitivity to social feedback has focused on the impact of major negative life events (e.g., Coyne & Whiffen, 1995; Nietzel &

Harris, 1990; see below for more details). In this research, we examine the impact of negative and positive events that people experience on a daily basis—both social and nonsocial. We propose a model in which greater social hypersensitivity is associated with greater fluctuations in self-esteem and affect both in the presence of negative *and in the absence of positive social feedback*. These fluctuations matter. Greater self-esteem lability and affective reactivity are related to negative psychological outcomes including proneness to depression (Butler, Hokanson, & Flynn, 1994; Kernis, Grannemann, & Mathis, 1991) and poorer depression treatment outcomes (Cohen, Butler, Gunthert, & Beck, 2005), marking one possible mechanism by which social hypersensitivity constitutes a vulnerability. In a longitudinal daily diary study, we tested (a) whether greater social hypersensitivity is related to increased instability in self-esteem and affect over the course of a month and (b) whether the presence of negative and absence of positive social events predicts

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lower self-esteem, higher negative affect, and lower positive affect levels on a daily basis for relatively hypersensitive individuals.

Adaptive Social Sensitivity Versus Social Hypersensitivity

The motivation and ability to attend to, interpret, and respond to social feedback is paramount to adaptive interpersonal functioning (Tooby & Cosmides, 1996). When correctly tuned, sensitivity to social feedback is adaptive because it allows people to maintain good standing in their relationships. This begs the question, exactly *what* is sensitive to feedback? According to sociometer theory, slight shifts in self-esteem are informative reflections of social inclusion or exclusion: Self-esteem increases when feedback signals inclusion, whereas self-esteem diminishes in response to cues signaling the risk of exclusion (Leary, Tambor, Terdal, & Downs, 1995). For some people, this feedback sensitivity system is "miscalibrated" (Murray, Griffin, Rose, & Bellavia, 2003), which may cause self-esteem and affect to fluctuate to a degree that becomes harmful.

Socially hypersensitive people exhibit a heightened concern for what others think, heightened concern about pleasing close others, and overdependence on close others; they are more prone to developing depression when confronted with relationship disruptions (Beck, 1983, 1987; Blatt, 1974; Robins et al., 1994). In the clinical literature, social hypersensitivity is referred to as "sociotropy" (Beck, 1983) and "dependency" (Blatt, 1974); the clinical profile includes not wanting to be alone, being uncomfortable when alone, crying, variability of mood, reactivity of mood to events, and feeling lonely (Beck, 1983). Social hypersensitivity is moderately to highly correlated with neuroticism ($r = .47$ to $.71$; e.g., Dasch, Cohen, Sahl, & Gunthert, 2008; Mongrain, 1993), which is not surprising as most personality constructs related to hypersensitivity are significantly correlated with neuroticism (e.g., rejection sensitivity; Brookings, Zembar, & Hochstetler, 2003). However, social hypersensitivity predicts anxiety and depressive symptoms even when controlling for neuroticism, indicating that the construct predicts unique variance in negative psychological outcomes (Clark & Beck, 1991).

Social hypersensitivity is one of several constructs to posit that individual differences in reactivity to social feedback can lead to negative outcomes, though each construct is theoretically and empirically distinct. For example, Crocker and Park (2004) have reported that of all the external contingencies of self-worth, "appearance," and "others' approval" were most closely associated with mental and physical health costs. Although social hypersensitivity may seem similar, seeking others' approval is only one of three factors that define social hypersensitivity (as stated above, overdependence and concern for what others think are the other two). Downey and colleagues' Rejection Sensitivity Questionnaire is correlated

with Beck's (1983) sociotropy scale, $r(115) = .39$, $p < .001$; however, the two scales predict depressive symptoms independently (Downey & Ayduk, 2000). Moreover, rejection-sensitive individuals are more likely to avoid rejection by "keeping a safe distance" from others whereas socially hypersensitive individuals are more likely to avoid rejection by seeking intimacy (Brookings et al., 2003). Thus, although these constructs may seem very similar on the surface, they are in fact quite distinct and engender very different behavioral profiles.

Most relevant to the current investigation, social hypersensitivity reliably correlates with measures of depressive symptoms and with diagnosed depressive episodes (correlations range between .30 and .40; for a review, see Girgus & Nolen-Hoeksema, 2006). Although extant research has established that extreme social sensitivity can be bad for one's health in the face of major social stress, the precise mechanisms by which social hypersensitivity interacts with daily snubs and uplifts to predict psychological outcomes remain mostly unexplored.

Social hypersensitivity was originally characterized as a diathesis in a diathesis stress model of vulnerability to depression (Beck, 1983). Diathesis stress models assume that not all people are equally likely to develop depression; rather, people who possess a diathesis (e.g., social hypersensitivity) are hypothesized to be at greater risk than the general population for depression when they experience life stress. Because socially hypersensitive individuals are thought to be excessively invested in positive exchanges with other people, social hypersensitivity has been posited to interact specifically with *negative*, *social* events to predict depression (Beck, 1987). This "congruency hypothesis" has been tested extensively with negative social and nonsocial events, but empirical support for it has been inconsistent (for reviews, see Coyne & Whiffen, 1995; Nietzel & Harris, 1990). In some samples social hypersensitivity seems to interact exclusively with negative social events to predict negative outcomes (e.g., Hammen, Marks, Mayol, & deMayo, 1985; Robins, Hayes, Block, Kramer, & Villena, 1995; Zuroff & Mongrain, 1987). For example, the dissolution of a relationship (a social stressor) predicts increases in depressive symptoms, but achievement-related stressors (a specific type of nonsocial stressor), including failing a class or receiving negative feedback in school or the workplace, do not. In other samples, social hypersensitivity appears to pose a more general vulnerability, interacting with various kinds of negative events including both social- and nonsocial setbacks to predict increases in depressive symptoms (Fresco, Sampson, Craighead, & Koons, 2001; Robins & Block, 1988).

An examination of the effects of positive events—both social and nonsocial—is all but absent from the literature (Zautra, Affleck, Tennen, Reich, & Davis, 2005). Indeed, we are aware of only one article that has examined how social hypersensitivity interacts with positive social feedback:

Higher social hypersensitivity scores are related to less sad-ness on days when people experience higher numbers of positive social (but not achievement-related) events (Dasch et al., 2008). In sum, a survey of the literature yields many studies exploring which types of negative events interact with social hypersensitivity to predict depression, but few studies exploring whether and which types of positive events interact with social hypersensitivity to predict well-being and no studies that unpack how social hypersensitivity increases vulnerability.

How Social Hypersensitivity Increases Vulnerability

Self-esteem. Although self-esteem has been characterized as a stable trait-like construct for the past 50 years (Rosenberg, 1965), more recent empirical research has demonstrated that self-esteem fluctuates in response to daily experience (Harter & Whitesell, 2003; Heatherton & Polivy, 1991; Kernis et al., 1998). This evidence suggests that people vary both with respect to their baseline level of self-esteem (i.e., *trait* self-esteem) and in the degree to which it fluctuates moment to moment (i.e., self-esteem *lability*; see Kernis, 2005, for a review).

Self-esteem lability refers to the magnitude of short-term fluctuations that people experience in their momentary feel-ings of self-worth. People with labile self-esteem are highly reactive to events that have perceived relevance to their feel-ings of self-worth. On the other hand, people with relatively stable self-esteem are less reactive to external events; stable self-esteem is manifested when state feelings of self-worth are derived from an internal, stable source and, as a result, are generally unaffected by everyday feedback (Kernis, 2005). Self-esteem lability has implications for depressive symp-toms above and beyond the well-documented effects of low levels of self-esteem (e.g., Barnett & Gotlib, 1988; Beck, 1967; Paradise & Kernis, 2002; Tennen & Affleck, 1993). Increased self-esteem lability is a significant predictor not only of decreased levels of self-esteem over time but also of increased depressive symptoms (Butler et al., 1994; Kernis et al., 1991; Roberts & Gotlib, 1997; Roberts & Monroe, 1994).

Several endogenous and exogenous factors seem to pro-mote labile self-esteem. Overreliance on the evaluation of others, excessive dependency needs, and overreliance on sig-nificant others' love and approval as determinants of one's feelings of self-worth are associated with greater fluctua-tions in self-esteem (Butler et al., 1994; Kernis, Paradise, Whitaker, Wheatman, & Goldman, 2000; Rosenberg, 1986; Tennen & Affleck, 1993). Given that social hypersensitivity is defined by a heightened concern for what people think, a heightened concern about pleasing others, and overdepen-dence on close others, it is a reasonable candidate for self-esteem destabilization. Daily experiences also matter: Despite the focus of most self-esteem fluctuation studies on the effect

of negative events, Butler et al. (1994) and Nezlek and Plesko (2003) have both documented changes in self-esteem in response to daily positive events in addition to fluctua-tions in response to negative events. Neither of these studies, however, measured social hypersensitivity.

The studies that *have* examined the possible links among social hypersensitivity, events, and self-esteem have gen-erally been designed to test Beck's (1987) congruency hypothesis—that social hypersensitivity is a vulnerability that interacts specifically with social, as opposed to nonso-cial, stressors. For example, Frewen and Dozois (2006) found that socially hypersensitive individuals focused on the social aspects of negative life events, even when those events were not objectively classified as *social* (e.g., being fired from your job). Furthermore, socially hypersensitive partici-pants' self-worth was negatively correlated with the per-ceived impact of negative events, both social and nonsocial in nature, indicating their self-esteem was reactive to nega-tive events in general. Conversely, Lindsay and Scott (2005) found that social hypersensitivity did not predict decreases in self-esteem in response to negative academic (nonsocial) feedback, suggesting socially hypersensitive individuals' self-esteem was reactive specifically to negative *social* feed-back. These studies, however, used mixed combinations of social and nonsocial events, both major and minor, further highlighting the need for a study that assesses the impact of typical daily positive and negative, social and nonsocial events within a single sample.

Affect. If self-esteem is based in part in affective pro-cesses, it is possible that social hypersensitivity is related to the destabilization of affect in general (by the same mecha-nisms we predict it is related to the destabilization of self-esteem). People do not simply *think* positive or negative self-relevant thoughts: they *feel* good or bad about them-selves (Brown, 1993). This is not to equate self-esteem and mood; however, decreases in self-esteem tend to be accom-panied by negative affect (Heatherton & Polivy, 1991). As a result, we expect that social hypersensitivity will predict changes in day-to-day experiences of positive and negative affect as well as changes in self-esteem.

Affective reactivity refers to the intraindividual relation-ship between daily events and daily affect. In principle, this should include reactivity of both positive and negative affect in response to positive and negative daily events but again, in practice, research has primarily focused on the relationship between negative affect and negative or stressful events (Zautra et al., 2005). As in the case of self-esteem, large fluc-tuations in affect also have negative implications for mental health. Highly reactive individuals demonstrate a stronger association between their experience of stress and their ensuing experience of negative affect than less reactive individuals—a pattern that predicts increases in depressive symptoms (Cohen, Butler, et al., 2005). Furthermore, affective reactiv-ity to *social* stressors, as compared to other kinds of stressors,

is a significant prospective predictor of the development of depressive symptoms (O'Neill, Cohen, Tolpin, & Gunthert, 2004).

Overview

We suggest that social hypersensitivity affects the level, lability, and reactivity of both self-esteem and affect. We look not only at participants' responses to the presence of negative social feedback but also at their responses to *the absence of positive feedback*. We theorize that people who are hypersensitive to social feedback will not only notice rejection cues but also notice the absence of acceptance cues, which will prompt greater fluctuations in the way they feel about themselves (self-esteem) and in general (affect). Finally, we propose that these fluctuations will be related to greater levels of depressive symptoms.

Our model and this study extend prior theorizing and research on the link between social hypersensitivity and negative outcomes (i.e., negative affect, depressive symptoms) in four ways. First, we examine whether socially hypersensitive individuals are differentially reactive to positive versus negative and social versus nonsocial daily events. Second, we directly test the relationships among social hypersensitivity, self-esteem, and affect, with the same population, and, third, we do so using a prospective daily diary design, which allows us to employ multilevel models to probe the simultaneous impact of, and relationships between, inter- and intra-individual variables of interest (Bolger, Davis, & Rafeli, 2003). Specifically, we use Time 1 social hypersensitivity to predict the magnitude of fluctuations in self-esteem and affect and, in concert with daily events, to predict daily levels of self-esteem and affect over the course of a month. Using multilevel models allows us to treat social hypersensitivity as a personality dimension (as opposed to a categorical typology) by keeping it as a continuous variable in all of our analyses. Finally, we examine the interaction between social hypersensitivity and minor daily uplifts and setbacks as we suspect these seemingly minor events in the aggregate can be as pernicious as major disruptions in significant relationships (e.g., Ayduk, Downey, & Kim, 2001; Murray et al., 2003).

We test the following hypotheses:

Hypothesis 1, vulnerability: Socially hypersensitive individuals will report greater levels of depressive symptoms relative to their less socially sensitive counterparts, both at the beginning and end of the study, as we maintain that social hypersensitivity represents a vulnerability to increases in depressive symptoms.

Hypothesis 2, level and lability: (a) Socially hypersensitive individuals will have lower and more labile self-esteem, higher and more labile negative affect, and lower and more labile positive affect over the course of a month. Statistically operationalized, we

assess self-esteem and affect levels with the fixed effect of social hypersensitivity in multilevel models whereas we assess lability with the effect of hypersensitivity on the residuals of self-esteem and affect (Bryk & Raudenbush, 1987; Hoffman, 2007). (b) More labile self-esteem and affect will be related to higher numbers of depressive symptoms. For these analyses, we operationalize self-esteem and affect lability as each person's standard deviation across the reporting period for each measure, respectively (e.g., Kernis et al., 1991).

Hypothesis 3, reactivity: Socially hypersensitive individuals' self-esteem and affect will be more reactive to the presence of negative social events and the absence of positive social events on a daily basis than less socially hypersensitive individuals. Statistically, we assess reactivity with the interaction effect of social hypersensitivity and event type predicting self-esteem and affect in multilevel models (e.g., Bolger et al., 2003).

Method

Participants

Participants were undergraduate and graduate students at the university. All participants received either course credit or payment ($20) for their participation. Of the 73 participants in the study, 67 (female = 42) met the following three criteria for inclusion in the data set analyzed in this article: (a) completed all eight Web surveys between Times 1 and 2, (b) completed an instructional manipulations check correctly, and (c) reported English as their primary language. Participants' ages ranged from 18 to 30 ($M = 20.93$, $SD = 3.08$). We gathered two waves of data: 35 participants completed the study during the spring semester and 32 participated the following summer.

Design and Procedure

At the beginning of the 4-week study, participants came into the lab individually to provide consent and to complete the initial trait/baseline measures (Time 1; Personal Style Inventory [PSI-II], Rosenberg Self-Esteem Scale [RSE], Center for Epidemiological Studies–Depression Scale [CES-D]). Starting within the next 2 days, participants received an e-mail that included instructions and a Web link, which took them to their personalized online daily measures Web survey. Participants were asked to complete the Web survey between the hours of 9 and 11 p.m. Each daily measures Web survey included the Beck Self-Esteem Scale (BSE), Positive and Negative Affect Schedule (PANAS), and the Daily Negative and Positive Events checklist. Participants completed the Web surveys every third night, eight times

over the course of 24 days. We surveyed participants every 3 days to maximize the overall length of time we surveyed them while minimizing the burden of participation. In other words, we could only reasonably survey participants for approximately 10 days if they completed the survey every day, truncating the time over which we would be able to observe fluctuations in self-esteem and affect. To maintain confidentiality, we assigned each participant a unique identification number and password for the Web survey login.

To maximize compliance, we sent each participant a reminder e-mail with his or her personalized Web survey at 7 p.m. on the evening that he or she was supposed to complete the daily measures. Because our Web surveys were sent and completed electronically, we could keep track of the participants who had not completed their Web survey at the scheduled time. If a participant had not completed his or her Web survey by 9 a.m. the morning after receiving it, we sent out another e-mail reminding that participant to complete it as soon as possible. Only 5 participants (8%) had to skip a Web survey because they did not have access to a computer on a given evening. Of those 5, 4 of the participants were able to return to the normal schedule by the time the next Web survey was sent to them. Overall, we had 100% of our repeated measures data from 97% of our participants, which represents a marked improvement on the 12% attrition rate that is standard for prospective research (e.g., Metalsky & Joiner, 1992).

Once participants had completed all eight Web surveys, they scheduled an appointment to return to the lab individually and complete the follow-up measures (Time 2; PSI-II, RSE, and CES-D). On average, participants reported back to the lab approximately 1 week after finishing their last Web survey (M_{days} = 7.25, SD_{days} = 3.54). Participants were debriefed and compensated after they completed the follow-up measures.

Measures

Social hypersensitivity. We assessed participants' social hypersensitivity at Time 1 and Time 2 (1 month later) using the 24 sociotropy items from the PSI-II (Robins et al., 1994). These items are designed to assess the extent to which people are (a) concerned about what others think of them (e.g., "I judge myself based on how I think others feel about me"), (b) concerned about pleasing others (e.g., "I try to please other people too much"), and (c) dependent on other people (e.g., "I find it difficult if I have to be alone all day"). Each item is scored on a 6-point scale (1 = *strongly disagree*, 6 = *strongly agree*), indicating the extent to which participants think the statement is true of them. The PSI-II is widely used, and its reliability and validity are well established (Robins et al., 1994). Cronbach's alpha at Time 1 and Time 2 for our sample was .89 and .89, respectively.

Trait self-esteem. Participants completed the 10-item RSE (Rosenberg, 1965) at both Time 1 and Time 2. The RSE is a single-dimension self-report scale that assesses participants' overall positive and negative feelings about themselves (higher scores indicate higher self-esteem). All responses are scored on a 4-point scale (1 = *strongly agree*, 4 = *strongly disagree*), indicating the extent to which participants endorse each statement as it applies to them. The psychometric properties of the RSE have been thoroughly researched and validated; internal consistency ranges from .72 to .88 (Gray-Little, Williams, & Hancock, 1997). Cronbach's alpha for this study at Times 1 and 2 was .88 and .90, respectively.

Daily self-esteem. Participants completed the BSE (Beck, Brown, Steer, Kuyken, & Grisham, 2001) as part of their Web survey every 3 days for 24 days (between Times 1 and 2). The BSE is a 10-point semantic differential scale consisting of 18 pairs of adjectives (e.g., strong–weak, smart–dumb). We chose this scale because it would be hard for participants to remember which point they marked on previous days and it would therefore provide a sensitive measure of participants' fluctuations in self-esteem. We used participants' responses on this scale to compute self-esteem lability and reactivity to daily events for analyses related to Hypothesis 2b. Self-esteem lability was measured as the standard deviation of each individual's total self-esteem scores over the course of the eight Web surveys, with higher standard deviations indicating less stable self-esteem. We also computed the average of participants' daily self-esteem scores as another measure of "trait" self-esteem; the pattern of results using this measure is the same as when we use the RSE as the measure of trait self-esteem. The BSE is a valid and reliable measure (Beck et al., 2001). Average Cronbach's alpha for our data set was .92 over the course of the eight Web surveys.

Depressive symptoms. We assessed participants' depressive symptoms at Time 1 and Time 2 with the 20-item CES-D (Radloff, 1977). Each item is scored on a 4-point scale, indicating how frequently over the past week participants experienced each symptom (1 = *less than 1 day*, 4 = *5–7 days*). The CES-D is both reliable and valid (Hann, Winter, & Jacobsen, 1999). Cronbach's alpha for our data set was .90 at Time 1 and .87 at Time 2.

Daily positive and negative affect. We used the PANAS (Watson, Clark, & Tellegen, 1988) to assess participants' experiences of positive and negative affect on each day they completed the web survey. The PANAS is a list of 10 positive affect items (e.g., "excited") and 10 negative affect items (e.g., "distressed"). Each item is scored on a 5-point scale (1 = *not at all*, 5 = *extremely*), indicating the extent to which participants experience positive or negative affect throughout the day. Average levels of positive and negative affect were calculated as the average of the eight reports of positive and negative affect, respectively, collected over the course of the eight web surveys. We used this scale to compute fluctuations in affect as well as affective reactivity to daily events. Affective lability was measured as the standard deviation of each individual's total positive and negative affect scores over the course of the

eight Web surveys, with higher standard deviations indicating less stable positive and negative affect, respectively. The PANAS is a widely utilized measure that is internally valid and reliable over time (Watson et al., 1988). Average Cronbach's alphas for our positive affect and negative affect data sets were .88 and .85, respectively, over the course of eight Web surveys.

Daily negative and positive events. We used daily events taken from the University of Delaware Stress and Coping Survey (used in O'Neill et al., 2004; see the appendix). "Social" events included arguments and snubs (Joiner, 2000) as well as positive interactions; we deemed events "social" only if they involved interactions with *close others*. "Nonsocial" events included both negative and positive items: inconveniences and good fortune, successes and failures with regard to a variety of goals, and interactions with people other than family, friends, or romantic partners (e.g., a stranger). For each item, participants could check one of three columns indicating that the event had not happened *that day* (column 1), that the event had happened once *that day* (column 2), or that the event had happened two times or more *that day* (column 3).[1] The list consisted of 38 items total, including 9 negative social events, 6 positive social events, 16 negative nonsocial events, and 7 positive nonsocial events. The four types of events (positive/negative × social/nonsocial) constituted our daily events measures (please see Appendix).

Daily Diary Analyses

Effects of time. We found a significant fixed linear effect of day in study on daily self-esteem ($p < .01$), such that there was a positive trend in self-esteem over the course of a month. However, the restricted maximum likelihood (REML) χ^2 difference for the random linear effect of time was not significant, indicating that there was not significant individual variation in the trend for self-esteem over the course of the study. We did not find a significant fixed or random linear effect of day on positive affect, $p > .30$. For negative affect, the first model revealed a marginally significant negative fixed linear effect of time ($p = .06$); however, the REML χ^2 difference for the random linear effect was not significant, indicating that there was not significant individual variation in negative affect over the course of the study. We included a fixed linear effect of time in models predicting daily self-esteem and negative affect to control for any possible time-related confounds before we included other predictors of within-person variation.

Unconditional models. The following are the equations for the unconditional model:

$$\text{Level 1: } y_{di} = \beta_{0i} + e_{di}$$

$$\text{Level 2: } \beta_{0i} = \gamma_{00} + U_{0i}$$

The unconditional model determines how much variation in each dependent variable (e.g., daily self-esteem and affect)

is within versus between participants. We used the between-person variance, divided by the total variance (between plus within-person variance) to compute the interclass correlation (ICC). All three unconditional models were significant: $F_{\text{self-esteem}} (1, 66) = 2329.15$, $p < .001$, $F_{\text{positive affect}} (1, 66) = 884.73$, $p < .001$, $F_{\text{negative affect}} (1, 66) = 838.17$, $p < .001$, respectively. The ICC for daily self-esteem was .58, meaning 58% of the variance is between persons, 42% within persons; the ICC for daily positive affect was .46, and the ICC for daily negative affect was .41.

Measuring within-subjects fluctuations. We used heterogeneous variance models to examine intraindividual variation or within-persons fluctuations over time.[2] Specifically, these models examined the magnitude of within-person variation in daily self-esteem, and positive and negative affect, and whether these individual differences vary as a function of participants' centered social hypersensitivity scores.

The following equations summarize the model for each of the dependent variables:

$$\text{Level 1: } y_{di} = \beta_{0i} + e_{di}$$

$$\text{Level 1 residuals:}$$
$$\sigma_i^2 = \alpha_0(\exp(\alpha_1 (\text{Social hypersensitivity}_i - 93)))$$

$$\text{Level 2: } \beta_{0i} = \gamma_{00} + \gamma_{01} (\text{Social hypersensitivity}_i - 93) + U_{0i}$$

Social hypersensitivity scores are now included as a predictor in both Level 1 and Level 2 equations, centered around the sample's grand mean (i.e., 93). In the Level 2 model, the expected value of a participant's self-esteem is a function of the expected self-esteem mean for a person with an average social hypersensitivity score, plus the additional difference in mean level of self-esteem because of the linear effect of social hypersensitivity, plus that individual's deviation from the group's mean self-esteem score. The Level 1 model gives us the expected self-esteem value for any individual on any given day and is a function of the individual's own self-esteem mean plus his or her own deviation from his or her mean on any given day, *d*. The Level 1 residual model allows the residual error to vary across individuals.

Measuring reactivity to positive and negative social and nonsocial events as a function of social hypersensitivity scores. We also present multilevel models, which examined the interaction between social hypersensitivity and different daily events to predict self-esteem, positive affect, and negative affect[3]:

$$\text{Level 1: } y_{di} = \beta_{0i} + \beta_{1i} (\text{Daily event}_{di}) + e_{di}$$
$$\text{Level 2: } \beta_{0i} = \gamma_{00} + \gamma_{01}(\text{Social hypersensitivity}_i) + U_{0i}$$

Combined:

$$y_{di} = \gamma_{00} + \gamma_{01}(\text{Social hypersensitivity}_i) + \gamma_{10}(\text{Daily events}_{di}) + \gamma_{11} (\text{Social hypersensitivity}_i \times \text{daily event}_{di}) + U_{0i} + e_{di}$$

Table 1. Correlations, Means, and Standard Deviations for Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. PSI-II 1	—														
2. RSE 1	−.46**	—													
3. CES-D 1	.33**	−.65**	—												
4. SE Lability	.37**	−.37**	.44**	—											
5. Pos Level	−.10	.28*	−.35**	−.20	—										
6. Neg Level	.21	−.38**	.40**	.20	.08	—									
7 Pos Lability	.28*	.19	−.11	.29*	.29*	−.10	—								
8. Neg Lability	.18	−.17	.24*	.35**	−.03	.54**	.01	—							
9. SOC −	.22	−.21	.42**	.28*	−.17	.20	−.16	.03	—						
10. SOC +	.13	.06	−.03	.12	.35**	.01	.15	−.06	.32**	—					
11. OTH −	.09	−.15	.33**	.21	−.03	.50**	−.09	.17	.56**	.17	—				
12. OTH +	.03	.10	−.02	−.04	.47**	.09	.23	−.01	.13	.26*	.62**	—			
13. PSI-II 2	.86**	−.46**	.28*	.22	−.04	.25	.19	.14	.15	.14	.11	.03	—		
14. RSE 2	−.40**	.86**	−.67**	−.40**	.35**	−.45**	.16	−.21	−.19	.19	−.23	.21	−.43**	—	
15. CES-D 2	.17	−.60**	.69**	.27*	−.34**	.48**	−.23	.19	.52**	−.11	.37**	−.26*	.26*	−.65**	—
M	92.46	31.96	15.51	15.93	2.32	1.64	0.59	0.46	8.51	21.64	30.57	20.27	90.97	31.60	15.11
SD	16.80	4.86	10.06	7.41	0.64	0.46	0.23	0.25	8.14	10.11	12.81	9.50	16.44	5.09	8.55

Note: $N = 67$ for all variables. PSI-II 1 = Personal Style Inventory, Time 1 (social hypersensitivity); RSE 1 = Rosenberg Self-Esteem Scale, Time 1 (trait self-esteem); CES-D 1 = Depression Inventory, Time 1 (depressive symptoms); SE Lability = self-esteem lability over the course of the month; Pos Level = average level of positive affect over study; Neg Level = average level of negative affect over study; Pos Lability = positive affect lability over study; Neg Lability = negative affect lability over study; SOC − = total number of negative social events; SOC + = total number of positive social events; OTH − = total number of negative nonsocial events; OTH + = total number of positive nonsocial events; PSI-II 2 = Personal Style Inventory, Time 2; RSE 2 = Rosenberg Self-Esteem Scale, Time 2; CES-D 2 = Depression Inventory, Time 2.
*$p < .05$. **$p < .01$.

These models included daily events as the Level 1 predictors, Time 1 centered social hypersensitivity (and centered trait self-esteem scores in the models predicting daily self-esteem) as a Level 2 predictor, and the cross-level interaction between social hypersensitivity and each kind of daily event, respectively. We included all relevant daily events in each model to control for the fact that occurrences of events are correlated.

Results

In this section, we test the following hypotheses: (1) higher social hypersensitivity scores will be correlated with greater levels of depressive symptoms both at the beginning and end of the study; (2a) higher social hypersensitivity scores will be related to lower and more labile self-esteem, lower and more labile positive affect, and higher and more labile negative affect over the course of a month; (2b) increased self-esteem and affect lability will be positively related to higher levels of depressive symptoms; (3) increased social hypersensitivity scores will be related to more fluctuations in self-esteem and affect in reaction to positive and negative social events but not in reaction to positive or negative nonsocial events.[4]

Descriptive Statistics and Correlations

We present descriptive statistics and correlations among the data obtained during the Time 1 and Time 2 lab visits, as well as the aggregated data from the daily Web surveys, in Table 1. In support of Hypothesis 1, social hypersensitivity was positively correlated with depressive symptoms at Time 1 and Time 2. Of particular note, at Time 1 and Time 2 social hypersensitivity was negatively correlated with trait self-esteem and positively correlated with self-esteem lability, though the relationship is marginal for Time 2 social hyper-sensitivity and self-esteem lability, $r(65) = .22$, $p = .07$.

Individual Differences in Fluctuations in Self-Esteem and Affect and Their Relationship to Social Hypersensitivity and Depressive Symptoms

In this section, heterogeneous variances models test whether the magnitude of an individual's fluctuations in self-esteem and affect are related to his or her level of social hypersensitivity (Hypothesis 2a; see Bryk & Raudenbush, 1987; Hoffman, 2007). The following heterogeneity tests confirm that there are individual differences in the magnitude of fluctuations in self-esteem, positive affect, and negative affect:

Table 2. Effect of Social Hypersensitivity on Self-Esteem, Positive Affect, Negative Affect, and Respective Residuals

Parameter	Self-esteem		Positive affect		Negative affect	
	Est.	SE	Est.	SE	Est.	SE
PSI 1 fixed linear effect	0.48**	0.15	−0.00	0.00	0.01†	0.00
PSI 1 linear effect on residuals	0.47**	0.15	−0.00	0.00	0.01†	0.00

Note: $N = 67$. PSI 1 = Personal Style Inventory, Time 1 (social hypersensitivity). Asterisks indicate that the estimate of fixed effect differs significantly from 0.
†$p < .10$. **$p < .01$.
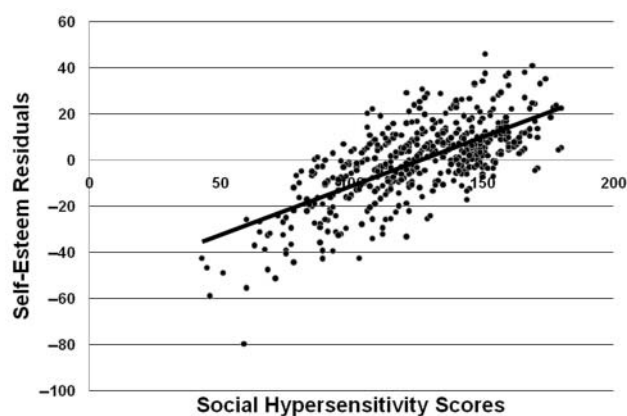
Figure 1. Observed unstandardized Level 1 residuals for self-esteem as a function of social hypersensitivity scores
Note: Each residual point represents the difference between a participant's daily self-esteem score and his or her own average self-esteem score. Higher residual scores are indicative of increased self-esteem lability.

$H_{\text{self-esteem}}$ (66) = 280.81, $p < .001$, $H_{\text{positive affect}}$ (66) = 153.06, $p < .001$, $H_{\text{negative affect}}$ (66) = 309.68, $p < .001$, respectively.

Our hypothesis is that social hypersensitivity is a characteristic that can predict these individual differences. The results are summarized in Table 2. The fixed effect of social hypersensitivity was a significant predictor of daily self-esteem. In addition, there was a significant positive linear effect of social hypersensitivity on the residual variance (Figure 1). These findings demonstrate two important patterns: (a) overall level of social hypersensitivity was negatively related to daily self-esteem, such that higher social hypersensitivity scores predicted lower daily self-esteem scores, and (b) participants with higher social hypersensitivity scores exhibited a larger magnitude of within-person fluctuation in daily self-esteem over the course of a month.

Neither the fixed effect nor the linear effect of social hypersensitivity was a significant predictor of daily positive affect: Participants' level of social hypersensitivity was not related to daily positive affect, nor did it predict greater within-person fluctuation in daily positive affect over the course of a month. Once we controlled for a person's average level of positive affect, there was not a significant difference in positive affect fluctuations as a function of participants' social hypersensitivity scores.

The fixed effect of social hypersensitivity was a marginally significant predictor of daily negative affect ($p = .09$). In addition to the marginally significant positive linear effect of social hypersensitivity on negative affect, there was a marginally significant positive linear effect of social hypersensitivity on the residual variance ($p = .09$). Higher social hypersensitivity scores predicted higher daily negative affect scores, and participants with higher social hypersensitivity scores exhibited greater within-person variation in daily negative affect over the course of a month.

We also predicted that greater lability in self-esteem, positive affect, and negative affect would be positively related to higher levels of depressive symptoms (Hypothesis 2b). For these analyses, we operationalized self-esteem and affect lability as each person's standard deviation across the reporting period for each measure, respectively. Self-esteem lability was significantly correlated with depressive symptoms at Time 1 and Time 2, $r(65) = .44$ and $.27$, $p < .05$, respectively. Positive affect lability was not significantly correlated with depressive symptoms at either Time 1 or Time 2. Negative affect lability was significantly correlated with depressive symptoms at Time 1, $r(65) = .24$, $p < .05$, but not at Time 2.

Individual Differences in Fluctuations in Self-Esteem and Affect and Their Relationship to Social and Nonsocial Events

The next question we address is whether socially hypersensitive individuals are particularly reactive to positive and negative social events, compared to their less sensitive peers, as evidenced by the magnitude of changes in their self-esteem and affect levels in response to these events (Hypothesis 3).

Daily self-esteem. Table 3 summarizes the results of the four models predicting daily levels of self-esteem. In each of the four models, we entered all four types of events as the Level 1 variables and trait self-esteem and social hypersensitivity as the Level 2 variables. All of the events and trait self-esteem were significant predictors of daily self-esteem in each model: As the number of negative events increased, daily self-esteem decreased; as the number of positive events increased, daily self-esteem increased; those with lower trait self-esteem had lower daily self-esteem over the course of a month. Social hypersensitivity alone, however, was not a significant predictor of daily self-esteem.

Each of the four models tests a different cross-level interaction between social hypersensitivity and one type of event.

Table 3. Social Hypersensitivity, Trait Self-Esteem, and Daily Events Predicting Self-Esteem Over 24 Days

	Type of daily event							
	Negative/social		Positive/social		Negative/other		Positive/other	
Parameter	Est.	SE	Est.	SE	Est.	SE	Est.	SE
Intercept	126.49**	2.01	126.49**	2.01	126.49**	2.01	126.49**	2.01
PSI 1	−0.12	0.14	−0.12	0.14	−0.12	0.14	−0.12	0.14
RSE 1	2.69**	0.47	2.69**	0.47	2.70**	0.47	2.70**	0.47
Neg-social events	−1.39**	0.57	−1.32**	0.55	−1.39**	0.37	−1.38**	0.54
Pos-social events	1.72**	0.41	1.73**	0.41	1.73**	0.41	1.63**	0.41
Neg-other events	−2.13**	0.34	−2.11**	0.34	−2.17**	0.36	−2.16**	0.34
Pos-other events	1.16**	0.45	1.07**	0.45	1.15**	0.45	1.15**	0.45
PSI × events	−0.01	0.04	0.05*	0.03	0.01	0.02	0.06**	0.03

Note: $N = 67$. Asterisks indicate that the estimate of fixed effect differs significantly from 0. PSI 1 = Personal Style Inventory, Time 1 (social hypersensitivity); RSE 1 = Rosenberg Self-Esteem Scale, Time 1 (trait self-esteem); PSI × events = cross-level interaction with event at top of respective column.
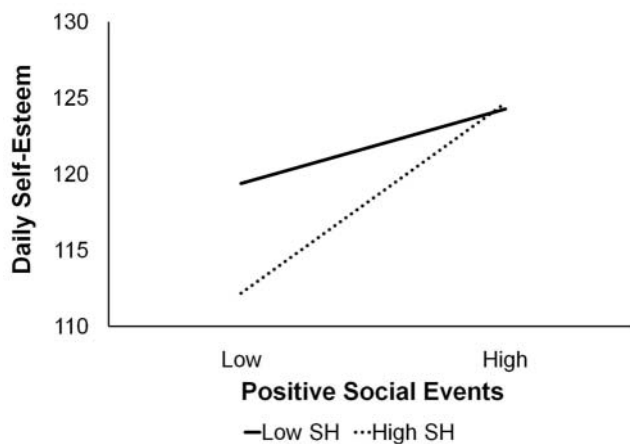*$p < .05$. **$p < .01$.

Figure 2. Cross-level interactions between social hypersensitivity scores and positive social events as predictors of daily self-esteem
Note: High and low levels of positive social events and social hypersensitivity were defined according to ±1 standard deviation from the mean on each of these measures, respectively (i.e., total number of positive social events and social hypersensitivity score at Time 1).
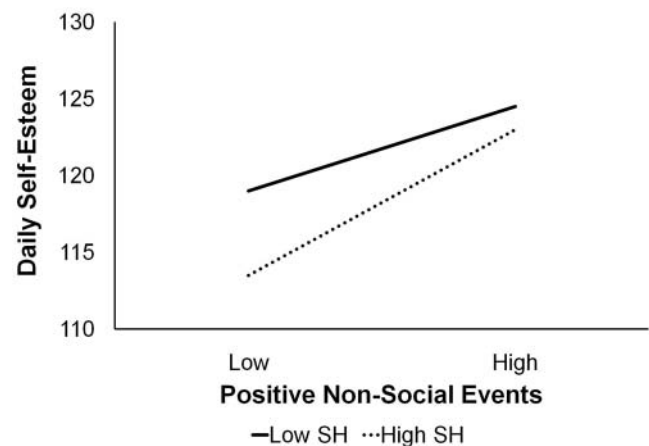

Figure 3. Cross-level interactions between social hypersensitivity scores and positive nonsocial events as predictors of daily self-esteem
Note: High and low levels of positive nonsocial events and social hypersensitivity were defined according to ±1 standard deviation from the mean on each of these measures, respectively (i.e., total number of positive nonsocial events and social hypersensitivity score at Time 1).

In Model 1, the cross-level interaction between social hypersensitivity and negative social events was not significant. Irrespective of their social hypersensitivity scores, all participants experienced decreases in daily self-esteem when they reported higher numbers of negative social events. In Model 2, the cross-level interaction between social hypersensitivity and positive social events was significant (Figure 2). On days when they experienced fewer positive social events (–1 *SD* from the grand mean for positive social events), people with relatively higher social hypersensitivity (+1 *SD* from the grand mean of social hypersensitivity) scores had markedly lower self-esteem than their less socially hypersensitive peers (–1 *SD* for social hypersensitivity). But as the sharper slope of their line indicates, on days when they had a great

deal of positive social feedback (+1 *SD* for positive social events), people with higher social hypersensitivity scores reported self-esteem as high as those who are relatively less sensitive. In Model 3, the cross-level interaction between social hypersensitivity and negative nonsocial events was not significant. In Model 4, however, the cross-level interaction between social hypersensitivity and positive nonsocial events was significant (Figure 3). As was the case with Model 2, on days when there were fewer positive nonsocial events (–1 *SD*), people with relatively higher social hypersensitivity scores had markedly lower self-esteem than their peers. On days when they had a great deal of positive nonsocial feedback (+1 *SD*), more socially hypersensitive people had self-esteem almost as high as those who are not as socially hypersensitive.

Table 4. Social Hypersensitivity and Daily Events Predicting Positive Affect Over 24 Days

Parameter	Positive/social		Positive/other	
	Est.	SE	Est.	SE
Intercept	2.32**	0.08	2.33**	0.08
PSI 1	−0.004	0.005	−0.004	0.005
Pos−social events	0.06**	0.01	0.07**	0.01
Pos−other events	0.07**	0.02	0.07**	0.02
PSI × events	0.002†	0.00	0.00	0.00

Note: $N = 67$. Asterisks indicate that the estimate of fixed effect differs significantly from 0. PSI 1 = Personal Style Inventory at Time 1; PSI × events = cross-level interaction with event at top of respective column.
†$p = .10$. **$p < .01$.
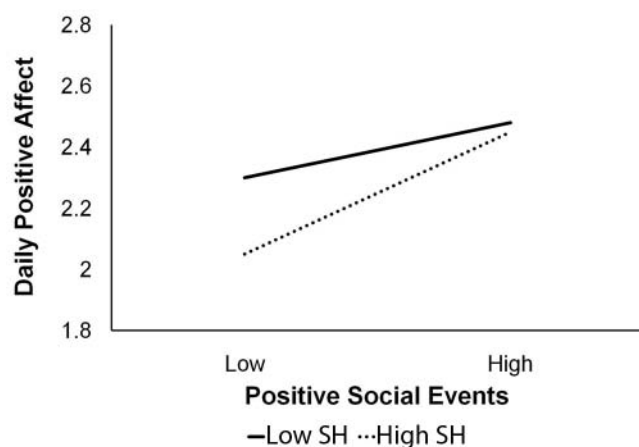
Figure 4. Cross-level interaction between social hypersensitivity scores at Time 1 and positive social events as a predictor of daily positive affect
Note: High and low levels of positive social events and social hypersensitivity were defined according to ±1 standard deviation from the mean on each of these measures, respectively.

Daily positive affect. Results are summarized in Table 4. Extant research shows that positive events are strongly related to positive affect but not negative affect, whereas negative events are strongly related to negative affect but not positive affect (Gable, Reis, & Elliot, 2000). In line with previous findings, neither the main effects of social or nonsocial *negative* events nor the cross-level interactions between social hypersensitivity and social and nonsocial negative events, respectively, predicted daily positive affect, ps > .70. In both models predicting positive affect, we entered both types of positive events as the Level 1 variable and social hypersensitivity as the Level 2 variable. Both types of positive events predicted daily positive affect: More positive events, social and nonsocial, predicted more positive affect on any given day. Although social hypersensitivity alone was not a significant predictor of daily positive affect in these models, the interaction between social hypersensitivity and positive social events was marginally significant (Figure 4). In contrast, the

cross-level interaction between social hypersensitivity and positive nonsocial events did not predict daily positive affect.

Daily negative affect. Again, neither the main effects of social or nonsocial *positive* events nor the cross-level interactions between social hypersensitivity and either type of positive event predicted daily *negative* affect, ps > .55. In both models predicting negative affect, we entered both types of negative events as the Level 1 variable and social hypersensitivity as the Level 2 variable. Both types of negative events predicted daily negative affect: More negative events, social and nonsocial, predicted more negative affect on any given day. Neither social hypersensitivity alone nor the interaction between social hypersensitivity and either type of negative event was a significant predictor of daily negative affect.

Discussion

The aim of the present study was to investigate whether social hypersensitivity makes individuals more susceptible to changes in level, lability, and reactivity of self-esteem and affect in response to the presence of negative and absence of positive social feedback. We had three specific hypotheses:

Hypothesis 1. First, following Beck (1987), we hypothesized that socially hypersensitive individuals would report greater levels of depressive symptoms at both the beginning and the end of the study (1 month later). As shown in Table 1, social hypersensitivity is significantly correlated with depressive symptoms both at Time 1 and Time 2.

Hypothesis 2. We hypothesized that, in general, socially hypersensitive individuals would have lower and more labile self-esteem, higher and more labile negative affect, and lower and more labile positive affect over the course of a month. The data supported our hypothesis for social hypersensitivity and self-esteem (see Table 2 and Figure 1); level and lability of negative affect also covaried with social hypersensitivity, though the relationships were marginally significant (see Table 2). On the other hand, we found no relationship between social hypersensitivity and level or lability of positive affect over the same time period. This pattern of findings is common, however: Positive affect does not factor as heavily as negative affect does in models of instability and reactivity (Langston, 1994).

As predicted, self-esteem lability was positively correlated with depressive symptoms at the beginning and end of the study. Negative affect lability was also correlated with depressive symptoms at Time 1 but not at Time 2, although the relationship was trending in the correct direction, $r(65) =$ .19. The lack of significance at Time 2 is most likely because of the decrease in reported depressive symptoms at Time 2. It is fairly common for participants to experience linear decreases in depressive symptoms when participating in longitudinal studies (e.g., Nolen-Hoeksema, Girgus, & Seligman, 1992). We did not find that positive affect lability was related to the number of depressive symptoms at either Time 1 or Time 2.

The self-esteem and negative affect lability findings are noteworthy because they corroborate our proposition that social hypersensitivity becomes a vulnerability to negative outcomes by destabilizing self-esteem and negative affect.

Hypothesis 3. Finally, we hypothesized that socially hypersensitive individuals' self-esteem and affect would be particularly reactive to positive and negative social (as compared to nonsocial) events. The partial support that we found for this hypothesis was embedded in an intriguing pattern of results that suggested a somewhat different approach to our thinking about social hypersensitivity.

On days when there were fewer positive events (the absence of both social and nonsocial feedback), socially hypersensitive individuals had much lower self-esteem than their less socially hypersensitive peers, whereas on days when there were more positive events of either kind, the self-esteem of socially hypersensitive individuals was as high as those who are not as socially hypersensitive (see Figures 2 and 3). On the other hand, the cross-level interactions between social hypersensitivity and negative events (both social and nonsocial) were not significant; participants' self-esteem was reactive to negative events *independent* of their level of social hypersensitivity.

Two aspects of this pattern of results were surprising. First, we expected the self-esteem of socially hypersensitive individuals to be more reactive to negative social events than the self-esteem of less sensitive individuals, but this did not occur. This is perhaps less surprising when one considers that a well-calibrated sociometer requires attention and reaction to negative, but not necessarily positive, social feedback (Leary et al., 1995), which suggests that the self-esteem of both those who are and those who are not socially hypersensitive will necessarily be responsive to negative feedback. This pattern may also reflect the well-documented finding that, in general, negative events are more impactful than positive ones (e.g., Rozin & Royzman, 2001); negativity bias may be too strong to be moderated by social hypersensitivity in a relatively small sample.

Second, we had expected to find that social hypersensitivity would *not* moderate reactivity in response to positive and negative nonsocial events. However, we found the same pattern of results for nonsocial events as we found for social events. Socially hypersensitive individuals' self-esteem was more reactive to positive nonsocial events, but not negative nonsocial events, relative to their less sensitive peers. We believe that our participants may have been equally reactive to the positive social and positive nonsocial events on the checklist we provided because most notable daily events are at least somewhat social in their nature. This interpretation is supported by the finding that socially hypersensitive individuals focus on the social aspects of life events, even when those events are not objectively classified as *social* (Frewen & Dozois, 2006). Take, for example, meeting a daily fitness goal: Although meeting a fitness goal is not social in an immediate sense, it may be related to social motivations in a more abstract sense, such as wanting to look fit to receive positive feedback on one's appearance.

Follow-up pilot data with a separate sample revealed that there was variation in the extent to which people perceived each of our daily event sets as social. On a scale of 1 (*not at all social*) to 10 (*extremely social*), 51 participants rated positive social events as most social ($M = 8.01$, $SD = 1.70$) and negative social events as second most social ($M = 5.91$, $SD = 2.62$), followed by positive nonsocial events ($M = 5.65$, $SD = 1.43$) and negative nonsocial events as least social ($M = 3.79$, $SD = 1.31$). Paired t tests revealed that all events were significantly different from one another, all $ts(50) > 5.5$, $p < .001$, except negative social events and positive nonsocial events, which were statistically equivalent, $t(50) = -0.57$, $p = .58$. Future studies should take care to include daily events that are equivalent in the extent to which they are perceived as social or ask participants to rate the events at the end of the study to control for subjective variation.

We were also interested in affective reactivity as a function of social hypersensitivity. Previous research has focused on negative affective reactivity to stressful events as a prospective predictor of depression (see Cohen, Gunthert, Butler, O'Neill, & Tolpin, 2005, for a review). Our data demonstrated that socially hypersensitive individuals exhibited greater positive affective reactivity to positive social events but not to positive nonsocial events. Socially hypersensitive individuals' negative affect was no more reactive to negative social or nonsocial feedback than individuals who were less socially sensitive.

In sum, the results for positive and negative affect were markedly weaker than the results for self-esteem (Tables 2–4). One possible explanation for the difference in the results is that social hypersensitivity is directly related to self-esteem (Beck, 1983) but is connected to affect only insofar as changes in self-esteem cause changes in affect. A recent meta-analysis examining the effect of social rejection on self-esteem and affect reports a similar discrepancy (Blackhart, Nelson, Knowles, & Baumeister, 2009). First, for people in general, the experience of social rejection (particularly reliving past rejection experiences) yields only a moderate effect size for affect as compared to a large effect size for self-esteem. Second, and in line with our findings, rejection seems to place people in a slightly negative or affectively neutral state, whereas social acceptance and inclusion significantly increase positive affect and self-esteem. Both the stronger results for self-esteem as compared to negative affect and the stronger effects of positive social events as compared to negative social events are replicated in the current data set. The current findings and Blackhart et al.'s (2009) meta-analysis highlight that the relationship between self-esteem and affect is interesting in and of itself. For example, asking people to label their affective reactions to stimuli dampens people's responses to those stimuli (e.g., Lieberman et al., 2007); whether

or not explicitly reporting self-esteem has the same effect has yet to be determined. If self-esteem is not subject to the same dampening effects, it may help to explain why affect is less closely linked than self-esteem to social hypersensitivity in the current study.

Are socially hypersensitive individuals benefiting from their heightened reactivity to positive feedback? Since, in general, people are more sensitive to negative than to positive stimuli (Rozin & Royzman, 2001), it seems unlikely that socially hypersensitive individuals are better off than their less sensitive peers. It is worth reiterating here that social hypersensitivity was marginally related to reports of greater numbers of negative social events, $r(66) = .22$, $p = .07$, and that socially hypersensitive individuals consistently demonstrated lower self-esteem (both in the lab and during the daily diary data collection) and more depressive symptoms than their less sensitive peers.

Our study addresses several of the limitations of personality diathesis stress research outlined by Coyne and Whiffen (1995) and represents an improvement on past studies of social hypersensitivity as a vulnerability for several reasons. First, the daily diary design allows us to study the relationships among social hypersensitivity, self-esteem, and affect, over the course of a month (as compared to "one-shot" or "pre-post" studies where a difference score ostensibly provides insight into a "slice" of a participant's life). Although researchers have conducted prospective studies to determine if social hypersensitivity is a predictor of depression (e.g., Fresco et al., 2001; Robins et al., 1995), no study of which we are aware directly examines the role of self-esteem and affect in the relationship between social hypersensitivity and depression. Second, using multilevel models allowed us to conduct more statistically rigorous analyses to explore the relationship among daily events, self-esteem, and affective reactivity as a function of social hypersensitivity. Daily diary studies conducted prior to the availability of multilevel modeling are disadvantaged to the extent that they use less

sensitive statistical proxies for measuring individual-level reactivity and structural qualitative changes over time (Bolger et al., 2003). Finally, we had a particularly high compliance rate on the daily surveys portion of the study because we distributed the surveys electronically, which allowed us to remind participants to fill them out the evening they received them. More important, participants could access the surveys only *on the day* they were to be completed; thus, we could ensure they were completing the surveys when they were supposed to, as opposed to completing several surveys in one day and trying to reconstruct what had happened to them days earlier.

Conclusion

Basing one's self-worth on social approval is demonstrably perilous. Social hypersensitivity and reactivity to positive events may make people more prone to noticing all varieties of self-relevant feedback because people learn to rely on feedback to determine their self-worth. For socially hypersensitive people, minor snubs may chip away at an already precarious sense of self-esteem. Learning that exogenous positive feedback increases self-esteem only strengthens the perceived relationship between one's worth and others' approval. In other words, people may come to learn that others' approval is the only way to feel better about their selves, which may lead people to actively pursue such approval. However, rather than increasing self-worth, active pursuit of social approval can alienate friends and family over time, leading not only to negative psychological outcomes but also to increases in exactly the type of social rejection hypersensitive individuals try so hard to avoid (e.g., Joiner, Metalsky, Katz, & Beach, 1999). We hope that further experimental investigation of cognitive processing of different kinds of feedback and continued use of daily diary methodologies and multilevel modeling will help illuminate the mechanisms by which socially hypersensitive people become more vulnerable to experiencing increased depressive symptoms.

Appendix

Daily Events

	Positive	Negative
Social	Had especially good interactions with a friend, family member, romantic partner, or other acquaintance.	Showed interest in someone and they rejected me.
	Was complimented by another person.	Did something awkward or embarrassing in a social situation.
	Patched things up with a friend, family member, or romantic partner.	Was left out by my group of friends, family, or romantic partner.
	A friend, family member, or romantic partner helped me with a personal problem.	Tried to share something important with a friend, family member, or romantic partner and they acted disinterested.
	Did something special for a friend, family member, or romantic partner, which was appreciated.	Had an argument or got along poorly with a friend, family member, or romantic partner.

(continued)

Appendix (continued)

	Positive	Negative
	Friend, family member, or romantic partner did something special for me.	A friend, family member, or romantic partner let me down (e.g., didn't call, meet me, or do as promised).
		A friend, family member, or romantic partner embarrassed me or hurt my feelings in front of others.
		Asked a friend, family member, or romantic partner to spend time with me and they said no.
Nonsocial	Completed work on an interesting project or assignment.	Did poorly on a school task.
	Met a daily fitness goal.	Received feedback or evaluation that I needed to work harder/perform better in my classes or job.
	Went to a stimulating class or lecture.	Failed to meet a daily fitness goal.
	Did well on a school or work task (e.g., test, assignment).	Had a minor illness, injury, or some other physical discomfort.
	Spent enjoyable time pursuing a hobby, extracurricular activity, or other recreation.	Had a financial difficulty (e.g., unexpected expense, overspent, etc.).
	Received a positive letter or e-mail	Committed a minor law violation (e.g., traffic ticket, disturbing the peace, dorm violation).
	Had a good interaction with someone other than a friend, family member, romantic partner, or other acquaintance.	Failed an important exam.
		Was the victim of a crime (e.g., theft, assault).
		Tried to accomplish something (e.g., homework) but had too many interruptions.
		Misplaced or lost something.
		Tried to accomplish something (e.g., homework) but wasted too much time on other activities.
		Was delayed/late due to circumstances beyond my control.
		Poor weather.
		Experienced a transportation problem (e.g., car problems, late bus).
		Was concerned about an event on the news.
		Argument/conflict with someone other than a friend, family member, or romantic partner.

Source: Delaware Stress and Coping Survey (O'Neill, Cohen, Tolpin, & Gunthert, 2004).

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The authors declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

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Notes

1. If an event happened two or more times, it was scored as happening twice. Each event on any given day could be scored as happening zero, one, or two times.

2. For the heterogeneous variance models we examined between-person and within-person variation using multilevel models estimated in SAS PROC MIXED. We compared models differing in fixed effects using maximum likelihood and models differing in random effects using restricted maximum likelihood (REML). We compared nested models by their model deviances (–2 log likelihood values) and adjusted for the number of parameters included in each model. We evaluated the significance of fixed effects with Wald's tests using Satterthwaite denominator degrees of freedom.

3. For the multilevel models in this section, we examined between-person and within-person variation using multilevel models estimated in SPSS, using the MIXED command. We compared models' random effects using REML.

4. All models including trait self-esteem were tested using the Rosenberg Self-Esteem Scale as well as the average of the eight Beck Self-Esteem Scales; the results are the same. We report models using the Rosenberg Self-Esteem scores as trait self-esteem in the remainder of the results section.

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