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Dyadic Effects of Feeling Transparent

A dissertation submitted in partial satisfaction of the requirements for the degree

Doctor of Philosophy in Psychology

by

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Manuscripts Under Review

Winczewski, L.A., Collins, N.L., & Bowen, J.D. How do people know when they are understood? An interpersonal process model of empathic accuracy, expressed understanding, and feeling understood in social interactions. Under review at *Social Psychological and Personality Science.*

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ABSTRACT

Dyadic Effects of Feeling Transparent

by

Lauren Winczewski

A wealth of evidence suggests that social relationships and social interactions are more satisfying when partners accurately understand one another's true thoughts and feelings. However, most research on interpersonal understanding (empathic accuracy) has focused on profiling the most effective perceiver, with very little work on how targets contribute to a perceiver's empathic ability and resulting interaction outcomes. Targets want to be understood, but how do their own cognitive biases and behavioral responses help or hinder this process? Research on the *illusion of transparency* shows that people tend to overestimate how easily others can detect their innermost thoughts and feelings. Critically, perceived transparency can result in adverse social outcomes (e.g., lower perceptions of social support, feelings of rejection), suggesting that targets can sometimes undermine other people's ability to understand them and respond to their needs. To investigate this idea, my dissertation included two experimental laboratory studies designed to test the hypothesis that when targets overestimate the transparency of their own feelings, they are less effective at conveying their needs. In turn, perceivers should be less accurate at inferring the targets' thoughts and feelings, thereby hindering perceivers' ability to provide effective social support. In Study 1, I manipulated perceived transparency and measured expressiveness during a disclosure task. In Study 2, I manipulated perceived transparency among romantic couples and created an opportunity for targets to seek and receive support from their partners. Study 1 findings reveal that the manipulation consistently *increased* expressiveness rather

than decreased it, and Study 2 showed few significant differences by condition. The findings are discussed in terms of methodological and conceptual difficulties I encountered in empirically distinguishing perceived transparency from expressiveness.

Dyadic Effects of Feeling Transparent

People have a need to understand and feel understood by others. Understanding is critical not only for facilitating intimacy and satisfaction in close relationships (Reis and Shaver, 1988), but also for ensuring smooth social interactions. Yet the ability to accurately understand others is rather elusive. Research on *empathic accuracy*, or the ability to accurately understand another person's innermost thoughts and feelings, finds that perceivers are most accurate at inferring their romantic partner's feelings above anyone else's – yet even with romantic partners' deep intersubjective knowledge and shared reality, perceivers are only accurate at inferring their partner's thoughts and feelings roughly 30% of the time (Ickes, 2011).

Of course, interpersonal perception is just that – an *interpersonal* dynamic. Although empirical research places considerable onus on the *perceiver's* ability to accurately infer a target's thoughts and feelings, how do *targets* contribute to perceivers' ability to understand them? Is it possible that targets behave in ways that make them more or less understood by others? In an effort to address these issues, my dissertation was designed to examine one psychological processes that might facilitate or impair targets' readability – namely, targets' perceptions of their personal transparency. I propose that when targets believe their thoughts and feelings are transparent to others, they will ironically become less motivated to effectively and clearly express their inner states. This impairment in target readability should then disrupt interpersonal perception, such that perceivers will become less accurate at inferring the target's thoughts and feelings and less capable of meeting the target's needs in stressful situations. I will elaborate on the following theoretical model in full detail, below.

Target readability

Some people, more than others, are particularly hard to read. One line of research on readability focuses on the readability of personality traits. Due to a variety of factors, people do not always behave in ways that effectively clue others into their personalities (Colvin, 1993). This argument is echoed in the *realistic accuracy model* (Funder, 1995), which suggests that incongruence between personality and behavior is only the beginning of a cascade of interpersonal misunderstanding. If targets do not provide relevant behavioral cues to their personality, perceivers will not have an opportunity to detect nor use such information in forming an accurate impression.

A separate but related literature focuses not on accurate detection of another's personality, but instead on fleeting thoughts and feelings as they arise in the context of social interaction. Studies on *empathic accuracy*, or the ability to accurately detect another person's innermost thoughts and feelings, emphasizes the role of perceiver ability and motivation in making accurate inferences (Ickes, 1993). Although we know that interpersonal accuracy is associated with greater perceiver maturity and socialization (Davis & Kraus, 1997), researchers have not identified reliable personality correlates of empathic accuracy that *should* map on to empathic ability. That is, there are no consistent associations between accuracy and perceiver personality variables such as self-reported perspective-taking, empathic concern, emotional contagion, or general intelligence (e.g., GPA, need for cognition; Ickes, Stinson, Bissonnette, & Garcia, 1990; Davis & Kraus, 1997; Marangoni, Garcia, Ickes, & Teng, 1995). Even gender differences in accuracy are sparse; women only become more empathically accurate when they are reminded of the stereotype that women are more empathic than men (Ickes, Gesn, & Graham, 2000; Klein & Hodges, 2010).

Ickes and colleagues (2000) offer two possible explanations for this lack of perceiver variance. First, it may simply be that perceivers have inaccurate "metaknowledge" of their own empathic ability, such that merely *believing* in one's own ability does not predict actual accuracy (Ickes, 1993). Second, it is possible that the proposed associations between perceiver personality and empathic accuracy are extremely subtle and difficult to detect. If this second possibility is true, it suggests that these proposed relationships between perceiver personality and empathic accuracy would be most likely detected in study designs that allow multiple perceivers to make inferences about multiple targets.

To explore this possibility, Ickes and colleagues (2000) conducted a meta-analysis in which they subjected relevant data to a social relations analysis. Using a statistical technique known as *actor-partner interdependence modeling* (Kenny, 1996; Kenny, Kashy, & Cook, 2006), they were able to parse apart variability in empathic accuracy that could be attributed to (a) the perceiver, (b) the target, (c) the perceiver-target relationship, and (d) error. The relative role of perceiver effects and target effects reliably differed depending on the study design. In three studies designed to assess perceiver accuracy using small perceiver-target subgroups (e.g., two perceivers making inferences about two targets), the *targets* contributed considerable variance in perceiver empathic accuracy; conversely, perceivers contributed almost no variance at all. In three studies where multiple perceivers (mean $N = 52$ perceivers) inferred the thoughts of the same few targets, only then was perceiver variance greater than target variance; however, target effects were still significant contributors to perceiver accuracy. Across these five studies, targets uniquely contributed an average of nearly 25% of the total variance in perceivers' accuracy, suggesting that features of targets matter just as

much as (if not more than) features of perceivers (Ickes, Buysse, Pham, Rivers, Erickson, Hancock, Kelleher, & Gesn, 2000, Study 1).

Interestingly, the empathic accuracy literature is only beginning to acknowledge the critical role of targets in perceiver accuracy. In one of the studies included in Ickes and colleagues' meta-analysis (Marangoni, Garcia, Ickes, & Teng, 1995), perceivers were asked to infer the thoughts and feelings of three different female volunteers who were video-recorded describing an emotional life event. Perceivers consistently experienced difficulty understanding the one target who felt ambivalent about her impending divorce, and it is worth noting that some features of her emotional disclosure are critical for my argument. First, this target was difficult to read because she (1) said she was looking forward to the divorce, but (2) at the same time revealed that she had many unresolved, conflicting feelings about her situation. It is possible that this level of ambivalence made it difficult for perceivers to know how she truly felt, let alone for her to accurately report on her inner state. Second, perceivers generally reacted negatively to this woman's story because of her apparent inability to confidently end an unhappy marriage that had provided financial security (Marangoni et al., 1995). This second pattern suggests that targets may express themselves in ways that reduce perceivers' motivation to accurately perceive them, providing important evidence that targets differ in the ways they cue perceivers to their private inner world.

The take-home message of these studies, of course, is that when it comes to perceiver empathic accuracy, both perceivers *and* targets matter. Although the vast majority of empirical work has focused on features of the perceiver, current trends in accuracy research examine the unique role of targets in the perceiver's inference-making. For example, Zaki, Bolger, and Ochsner (2008) found that perceivers' self-reported empathy predicted their

ability to accurately understand unacquainted targets, but only when targets rated themselves as more expressive. In a related study, Zaki, Bolger, and Ochsner (2009) examined whether perceivers would be more accurate when they had access to visual, audio, or both audio and visual information when watching targets describe positive and negative emotional events. They found that targets who were high in self-reported expressiveness were also more *behaviorally* expressive (i.e., they produced more verbal and nonverbal cues), and perceivers were more accurate when they could access these cues using both visual and audio information channels. These studies show that targets send important information to perceivers, but far more research is needed to better understand how, why, and in what conditions targets are better or worse at facilitating a perceiver's perception efforts.

In summary, there is mounting evidence that targets differ in their readability. However, little is known about how or why they differ. How do targets' own cognitive biases and behavioral responses help or hinder their readability? Although researchers are beginning to acknowledge the important role that targets play in the accuracy process, more research is needed to uncover the specific pathways through which targets facilitate or impair a perceiver's ability to read their minds.

The illusion of transparency

One psychological process that may affect readability is *the illusion of transparency*, or the erroneous belief that one's own internal states (Barr & Kleck, 1995; Vorauer, Cameron, Holmes, & Pearce, 2003), traits and values (Vorauer & Cameron, 2002; Vorauer & Ross, 1999), or goals (Vorauer & Claude, 1998) are obvious to others. In their seminal piece, Gilovich, Savitsky, and Medvec (1998) proposed that people succumb to this illusion when their own inner state is especially salient to them. In focusing on their own phenomenological

experience, people tend to overestimate the extent to which others share in their perspective of the self. The illusion of transparency thus reflects an "anchoring and adjustment" process (Tversky & Kahneman, 1974). That is, people anchor to their own experiences but insufficiently adjust for the discrepancy between self-knowledge and inferences about how others see the self (Gilovich et al., 1998; Gilovich & Savitsky, 1999; Nickerson, 1999). As a result, people assume their inner states "leak out" more than they actually do.

Most of the research on the illusion of transparency is focused on uncovering individual differences, contexts, or psychological processes that predict felt transparency. A recurring theme in the literature is that self-focus or self-evaluative concerns render people far more likely to believe that their inner feelings are easily detectable by observers. People who are chronically self-conscious (Vorauer & Ross, 1999), low in self-esteem (Cameron & Robinson, 2010; Cameron, Holmes, & Vorauer, 2011) or insecure and sensitive to rejection (Vorauer et al., 2003) tend to feel more transparent. In self-evaluative contexts (e.g., public speaking), people also believe their anxiety is more apparent to onlookers than it really is. For example, Savitsky and Gilovich (2003) asked pairs of participants to give a speech, and then measured how nervous participants believed they appeared. In line with predictions, participants believed they appeared significantly more nervous than the other participants (i.e., the "audience") perceived them to be. These findings are consistent with the theoretical assumption that transparency should be greatest when people are especially focused on self-relevant thoughts (Gilovich et al., 1998).

Apart from predictors of transparency, there are far fewer studies examining *intrapersonal outcomes* associated with this illusion. In general, the assumption that others can detect one's own internal traits or states is associated with miscommunication (Vorauer

et al., 2003; Vorauer, 2005). In a study on intergroup relationship formation, for example, Vorauer and Sakamoto (2006) invited White and Chinese participants to interact with one another in a semi-structured laboratory discussion via a live audiovisual feed. When White participants had little prior contact with people of Asian descent, those who interacted with a Chinese participant thought they communicated more interest than did Whites who interacted with another White participant. In the White-Chinese dyads, White participants thought they conveyed more interest than the Chinese participants *and* a third party team of objective raters picked up on. Because Whites thought they communicated greater interest in their partner than was reciprocated, the realization of this unrequited enthusiasm ultimately predicted defensive distancing and a diminished desire to meet the person face-to-face. The researchers speculate that these discrepancies reflect an outcome of the illusion of transparency: the novelty of interacting with an outgroup member activated self-awareness and perceived transparency, which led to the erroneous belief that one's relationship motivations were obvious to outgroup (but not ingroup) members. Thus, the illusion of transparency has the potential to undermine the formation of intergroup relationships, even among participants with good intentions.

In the context of well-established relationships with close others, the illusion of transparency is especially strong (Cameron & Vorauer, 2008). When individuals feel closer and more cognitively merged with close others, they make judgments that stem primarily from self-knowledge. In one study, individuals completed the Inclusion of Other in the Self scale (Aron, Aron, & Smollan, 1992) to indicate the degree to which they felt merged with a particular close other (i.e., degree of self-other overlap). Then, participants responded to a checklist of interpersonal dilemmas and were asked to consider the degree to which their

significant others would accurately anticipate the participant's course of action in these hypothetical situations. When participants reported a greater merging of self with other, they reported a greater (albeit incorrect) belief that close others would be aware of their emotions, preferences, and behaviors in those situations (Vorauer & Cameron, 2002).

Although it makes sense that people are especially motivated to feel understood by close others (Reis & Shaver, 1988), the few studies on the role of transparency in interpersonal perception suggests that attempts to understand close others can be undermined by thinking about how others view the self. In a recent study on perspective-taking among romantic partners (Vorauer & Sucharyna, 2013, Study 3), participants who were asked to imagine their partner's perspective during an interpersonal problem-solving task became – ironically – more self-focused; that is, their cognitions centered on how they thought *they* appeared to their partner. Imagining another person's perspective was thought to paradoxically create more self-focus when the other person is in a position to evaluate the self (after all, as mentioned above, people generally feel more transparent to close others or to those with whom they feel a greater overlap between self and other; Vorauer & Cameron, 2002; Vorauer & Sucharnya, 2013). When people consider another person's perspective in an interpersonal interaction, their attention turns back to the self and prompts them to consider what the other person is thinking of them. This self-focused state is sometimes referred to as the *spotlight effect*, or an egocentric bias wherein people exaggerate the extent to which others notice them (Gilovich & Savitsky, 1999). When people feel they are "in the spotlight" or are the subject of another person's evaluations, they feel more transparent to that person. Consistent with this idea, Vorauer and Sucharnya (2013) found that participants who took their partner's perspective did indeed become more self-focused and felt more transparent.

This transparency was then associated with less favorable interaction outcomes. In particular, participants who reported greater transparency about negative feelings also felt less close to their partner and less satisfied with their relationship after the task. This study shows that, when situational features lead to greater transparency, transparency is once again associated with adverse outcomes.

If the feeling of transparency has negative *intra*personal consequences for targets, is it possible that this illusion also impedes social interactions with others? That is, what are the *inter*personal consequences of feeling transparent? Consider the role of transparency in social support contexts, for example. One study showed that when low self-esteem individuals exaggerated the degree to which they conveyed their needs to their partner, they felt less supported than those who had accurate insight into how much they actually conveyed (Cameron & Robinson, 2010). Is it possible that individuals felt less supported because support-providers were actually less supportive? And if so, why? In line with the speculation that feelings of transparency should result in a downward spiral of interpersonal miscommunication and misunderstanding (Cameron & Vorauer, 2008; Vorauer, 2012), growing evidence suggests that one person's felt transparency can result in negative social interactions for *both* individuals.

Dyadic effects of felt transparency

Arguably one of the more interesting features of the illusion of transparency is the consistent discrepancy between what targets believe they communicate and what observers actually detect. That is, just because targets feel transparent does not mean that other people (perceivers) can accurately discern their true traits or states. Gilovich found that when participants were asked to lie (or tell the truth), liars consistently felt that others knew (could

detect, or guess) that they were the liars, but observers were no better than chance at detecting the liar (Gilovich et al., 1998). In a study on felt transparency of traits, participants believed that their friends could accurately discern 70% of their self-aspects; however, friends were only accurate 32% of the time (Vorauer & Cameron, 2002). Studies that experimentally manipulate transparency tell the same story: when targets were led to feel more transparent (e.g., through a self-focus manipulation), observers did not have an easier time detecting the targets' inner states (e.g., Vorauer & Ross, 1999; Vorauer & Sucharnya, 2013).

The few studies on interpersonal outcomes of transparency make it clear that much more research is needed to understand the mechanisms by which an individual's felt transparency disrupts dyadic processes. There is a clear disconnect between what people think they convey and what perceivers are able to detect, and individuals and relationships may suffer as a result of one person's heightened transparency. If people believe (or are motivated to believe) their feelings are transparent, why do observers consistently fail to pick up on them? If people believe their feelings are transparent, how does this affect their social behavior, such as their willingness to disclose information about their true thoughts and feelings?

Given the various circumstances in which people feel transparent, it is worth noting that the intra- or interpersonal outcomes of feeling transparent may be modulated by whether people are motivated feel transparent to begin with. Some studies show that people feel transparent even when they may not want their inner feelings known (i.e., when they are lying, when they feel nervous; Gilovich et al., 1998, Gilovich & Savitsky, 2003). But other studies show that people also feel transparent in instances when it might otherwise be helpful

that one's feelings are easily detectable by others. For example, people may overestimate how much they are conveying their inner states because they want to be understood and are motivated to believe their emotions are "leaking out" to others who may be able to respond to them (Cameron & Robinson, 2008; Cameron, Holmes, & Vorauer, 2010). I suspect that the negative effects of feeling transparent, such as overestimating how much others can see one's emotional state, may contribute to peoples' beliefs about whether they are actually being understood in social interactions. If people want to be understood but erroneously assume their feelings are transparent, they may be all the more disappointed when listeners do not have as much insight into the discloser's mind as the discloser wants to believe.

Thus, in instances in which it would be helpful to be understood, I propose that the egocentric bias of feeling transparent is associated with negative outcomes because it disrupts peoples' propensity to effectively express themselves to others. I speculate that there are two ways in which the illusion of transparency is related to expressiveness. First, the belief that one's inner state is obvious may be a *cognitive* bias – that is, people may be less expressive because they believe they already are adequately expressing themselves. Second, the illusion of transparency may instead deplete the *motivation* to be expressive; that is, people may not feel motivated to exert effort expressing something that seems obvious to others (Cameron & Vorauer, 2008). Thus, the current studies examined the possibility that expressiveness is the key link between felt transparency and adverse social outcomes.

Expressiveness

A number of theoretical traditions suggest that people want to feel understood by others (Reis and Shaver, 1988), both over time and in the context of specific interactions (Finkenauer & Righetti, 2011). Fortunately, people have a number of channels through which

they can make their inner states known to others. Via nonverbal or verbal behavior, people differ in their ability and motivation to act in accordance with their true feelings, needs, or goals (Gross, John, Richards, 2000). Indeed, people high in trait expressivity achieve this goal; their use of more affective/emotional language and relevant nonverbal behaviors allows perceivers to more accurately detect the valence of their emotional state (Zaki, Bolger, & Ochsner, 2009). So, although perceivers must register the cues that targets send, targets must also send clear signals that properly convey their internal states.

Emotional expression is a key feature of effective support-seeking behavior and communication of needs among romantic partners (Reis and Shaver, 1988). In order to elicit support that matches one's needs, support-seekers need to clearly express their thoughts and feelings in social interactions (Collins & Feeney, 2000). But if support-seekers erroneously assume that their partners can accurately "read their minds," they may be less communicative about their needs and more upset with the support they do receive (Eidelson & Epstein, 1982; Vorauer, 2012). For wives, this mind-reading assumption is even associated with more hostile behavior during conflict episodes (Bradbury & Fincham, 1993). In addition, it is noteworthy that people tend to seek social support when they are feeling distressed and vulnerable, which tends to make people more self-focused and concerned about how they are viewed by others. This egocentric focus may, in turn, heighten perceptions of transparency (Vorauer, 2012) and reduce one's ability (or motivation) to effectively communicate one's needs to others. For example, if the process of seeking support renders people more self-focused – and heightens perceived transparency – support-seeking efforts (and outcomes) may be significantly impaired.

Given these cognitive and interpersonal complexities, it is surprising that there is relatively little research on specific target expressions that most effectively elicit support behavior. If support-seekers are met with stressful circumstances that require they communicate their needs, how might their nonverbal and verbal expressiveness be affected by felt transparency? I predict that the belief that one's inner state is obvious to others renders people less motivated (or less able) to engage in effective expression during social interactions. Some evidence supports the idea that expression can be affected by motivational factors. For example, the literature on individual differences in self-monitoring suggests that people modify their behavioral expressions in ways that they believe suit the situation (Snyder, 1974). In addition, in a study of facial expressiveness, Barr and Kleck (1995) video-recorded participants expressing or suppressing their emotional reactions to a humorous video clip. Participants and outside observers then rated the intensity of the participants' emotional displays while watching the clips. When participants were asked to genuinely communicate their feelings, the discrepancy between participants' self-ratings and observer ratings was small and not statistically significant; but when they were asked to suppress their emotions, there was a larger (and significant) discrepancy between self and observer ratings. These findings show that targets can enhance their expressiveness – and send a clear signal – when motivated to do so.

The importance of expression is also implicated in the existing transparency literature. As reviewed above, people who feel (or are made to feel) more transparent are not any easier to read despite believing they are (Vorauer et al., 2003; Vorauer, 2005; Vorauer & Sakamoto, 2006). That is, perceived transparency reflects a discrepancy between what people *think* they express versus what they *actually* express. Thus, I propose that felt transparency –

whether due to diminished motivation or cognitive inability – ironically prompts individuals to behave in ways that undermine the likelihood that they will be seen, with accuracy, by others.

Downstream dyadic consequences of feeling transparent in stressful situations

There are likely numerous dyadic implications of overestimating how much one conveys and expresses during stressful circumstances. If felt transparency both disrupts targets' expressiveness and impairs perceivers' accuracy, targets and perceivers alike may be less satisfied with their social interactions. In the heat of conflict, for example, partners who misunderstand each other may be less accommodating of one another's behavior (Kilpatrick, Bissonnette, & Rusbult, 2002). In such emotional circumstances, there is plenty of room for error in communicating one's own feelings or inferring another's inner state.

Miscommunication may be especially problematic in social support transactions among couples. If partners misunderstand one another's needs, their efforts at providing support may be misguided. Indeed, understanding is key for responsive behavior and intimacy (Reis & Shaver, 1988; Laurenceau, Feldman Barrett, & Pietromonaco, 1998), and there is mounting evidence that empathic accuracy is critical to a partners' ability to provide supportive behavior during social interactions (Verhofstadt, Buysse, Ickes, Davis, & Devoldre, 2008; Winczewski, Bowen, & Collins, 2016). However, little research examines how *support-seekers* affect the likelihood of eliciting responsive behavior that matches their needs. I argue that stressful situations may provide an especially relevant context for examining dyadic effects of transparency because (1) transparency is heightened in anxiety-provoking situations (Savitsky & Gilovich, 2003), (2) support-seekers' expressiveness is especially relevant for communicating needs and alleviating distress, and (3) transparency

may ultimately disrupt the support-seeking process if support-seekers assume their inner states are obvious. Thus, my dissertation focused on these processes in the context of social support interactions in an effort to better understand how the support-seeking exchange may ironically undermine support seeking and provision. In future studies, I plan to extend my work to examine how transparency impacts other types of social interactions, including conflict interactions and positive event disclosures.

Theoretical model

My dissertation was designed to examine the complex dyadic processes that are set in motion when targets believe they are transparent to close others. I examined these processes in the context of social support interactions among romantic partners. As shown in the theoretical model below, I hypothesized that when targets (or *support-seekers*) assume their inner states are transparent, they would be less expressive; that is, they would provide fewer verbal and nonverbal cues to their inner thoughts and feelings. With fewer cues, perceivers (*support-providers*) would be less able to form accurate inferences about the target's support needs. Lower accuracy should, in turn, lead perceivers to provide less responsive support to targets.

Overview of studies

To test these ideas, I ran four pilot studies (conducted on MTurk and in the lab – see Appendix A for a description of these pilot studies) and two behavioral laboratory studies. The purpose of the pilot studies was to identify a manipulation of transparency that led participants to feel more readable. I had a difficult time manipulating transparency. I ultimately chose a perspective-taking manipulation (adapted from Vorauer & Sucharnya, 2013) that increases perceived transparency because it ironically increases self-focus, by

increasing the likelihood that people will view themselves through the eyes of their partner. The goal was to make participants feel they were the subject of their partner's evaluation. I used this manipulation, despite some misgivings, for two reasons. First, it was the only manipulation that had been validated in prior studies. Second, it was the only manipulation (of the many that I piloted) that created an increase, albeit marginal, in perceived transparency.

In Study 1, I capitalized on a controlled laboratory environment to examine the link between felt transparency and expressiveness. The goal of Study 1 was to test the first link in the model, which argues that greater transparency leads to *less* expressiveness. To test this link, I first manipulated transparency, then asked participants to write a letter to a significant other describing a current personal stressor. These letters were then rated for expressiveness. I predicted that participants who took their partner's perspective would feel more transparent, and this transparency would cause a decrease in objective measures of expressiveness (message length, affective language use) in a written message to their partner.

Study 2 was designed to examine transparency and expressiveness among romantic partners in a stressful context, as well as downstream dyadic effects on responsive behavior. In this study, I manipulated one partner's (the *support-seeker's*) feelings of transparency via the same perspective-taking manipulation used in Study 1 (Vorauer & Sucharnya, 2013), then measured support-seeking behavior (i.e., expressiveness) during a stressful situation. To examine dyadic effects of the support-seeker's felt transparency, I also measured their partner's (the *support provider's*) empathic accuracy and support behavior. I predicted that (1) support-seekers who were higher in perceived transparency would show less effective (less direct, less clear) verbal expression during the disclosure task, (2) support-seekers who

were higher in perceived transparency would have partners (support-providers) who were lower in empathic accuracy and who provided less support, and (3) the relationship between seeker transparency and provider support would be mediated by the support-seeker's ineffective communication and support-providers' diminished empathic accuracy.

Study 1

The purpose of Study 1 was to provide a controlled laboratory environment in which I could examine causal relationships between perceived transparency and expressive behavior during self-disclosures about a personal stressor. Participants came to the lab and were told they would be writing a note to their romantic partner. Before writing, participants in the transparency condition were asked to take their partner's perspective, as this perspective-taking exercise has been shown to ironically increase self-focus (Vorauer & Sucharnya, 2013). Participants in the control condition did not receive any additional instructions before the writing task. Then, all participants were asked to write a private message to their partner in which they described an important *personal* stressor. These messages were coded for length, use of emotional language, clarity, and overall degree of expressiveness. I predicted that when people felt more transparent, this illusion of transparency would render them less motivated (or less able) to clearly express their thoughts and feelings.

A secondary goal of this study was to explore whether the effects of manipulated transparency would be moderated by individual differences factors that have been shown, in prior research, to play a potential role in determining the social effects of transparency. I measured a host of personality and relationship variables and explored interactive effects on expressiveness.

Hypotheses

I hypothesized that the transparency manipulation would affect participants' level of expressiveness during a writing task. Specifically, I predicted that when participants felt transparent, they would write letters to their partner that were *less* expressive (i.e., have fewer words, use less affective language) than participants in the comparison/control condition.

Method

Participants. Based on the small number of previous studies that manipulated transparency, I expected to find a medium effect size in expressivity between the transparency and control conditions. An a priori power analysis indicated that I should recruit 154 participants (78 per condition) to detect a small to medium effect size (d = .40). I worked toward this goal until resources were exhausted at the end of the academic year. Participants were 169 undergraduate students at the University of California, Santa Barbara and members of the local community who were involved in committed, romantic relationships of at least three months. I excluded seven participants. Six participants did not release their data following the debriefing procedure, and one failed to follow instructions. Post hoc power analyses on this final sample of 162 participants ($n_{transparency}$ = 81, $n_{control}$ = 81) indicated that I had 81% power to detect an effect size of d = .40.

Participants in the final sample were 62% female, and their mean age was 19.26 (SD = 1.32). The sample was fairly ethnically diverse (36% White, 34% Hispanic/Latino, 20% Asian/Pacific Islander, 2% Black, 1% Native American, 5% "Other," three participants did not indicate their ethnicity). The majority of participants were in heterosexual relationships (88%). The average relationship length was 19.03 months (SD = 19.27). Participants received either $10 or partial course credit in their Introductory Psychology course.

Procedure. Participants were recruited via an online subject pool to participate in a two-part study on communication using various media. Before the laboratory session, participants were emailed a link to a background questionnaire. I assessed a variety of personality and relationship variables so that I could explore moderation. Here, I report only the demographic data and a summary of findings from my exploratory moderation analyses.

Approximately one week later, participants arrived to the lab and were told they would be randomly assigned to write notes to their romantic partner using one of three media: text messages, a hand-written letter, or an email. In reality, all participants were asked to write an email using a standardized online form. To bolster the cover story (and encourage authentic messages), the experimenter told participants that the research staff would actually send the note to their partner. Participants were seated at a computer and were informed that they would write about a variety topics, including personal stressors or positive events. Participants ultimately wrote about one personal stressor (something unrelated to their romantic relationship) and a positive memory.

Before the writing activity, participants were asked to nominate a personal stressor that was unrelated to their relationship. They were then randomly assigned to either the transparency or control condition. As per the pilot study (see Appendix A), participants in the transparency condition received perspective-taking instructions before the first writing activity about a personal stressor. These instructions were based off of Vorauer and Sucharnya's (2013) imagine-other perspective-taking instructions, which were adapted from perspective-taking instructions typically administered in prosocial behavior research (e.g., Batson et al., 1997; Davis et al., 2004). Recall that the imagine-other perspective-taking instructions are supposed to create felt transparency when people are in a position to be

evaluated by the other person, because in these circumstances, people instead begin to focus their attention on considering how the other person sees them. Thus, I modified the language of the manipulation just slightly, in the pilot study and in both studies reported here, in an effort to (1) more explicitly make the self feel as though he or she is the subject of their partner's evaluation, and (2) to make the instructions relevant to the writing activity at hand. Experimenters delivered the following verbal instructions, which also appeared on the computer screen before both writing prompts:

> *When writing, please try to imagine how your partner will feel about you after reading your email. Try to feel the full impact of your email on your partner and how he or she will feel as a result of reading your email. Please do everything you can to imagine what your partner's feelings and perceptions of you will be like after reading your email.*

Participants in the control condition did not receive any additional instructions before the writing activities.

Participants were then asked to "write a message to your partner describing the stressful event" and could take as much time as they wanted. Participants wrote for an average of 3.94 minutes ($SD = 2.64$). After writing about a personal stressor, participants rated the degree to which they felt their emotions were transparent to their partner. They also rated their own expressivity in the note by indicating the degree extent to which they disclosed information, thoughts, and feelings in the note. These measures are described in full detail below.

To explore expressivity about positive events, participants were then given a second writing prompt. This time, they were asked to "write about your most treasured memory."

Participants in the transparency condition were then reminded of the perspective-taking instructions they had received before the first writing prompt. On average, participants wrote about their most treasured memory for 4.50 minutes (*SD* = 2.97). Since I was primarily interested in expressivity about stressful events, and to ensure that the transparency condition participants were following the verbal perspective-taking instructions, I did not counterbalance the order of these two writing prompts. As these "treasured memory" data are purely exploratory, I do not include analyses of these data here.

To explore the generalizability of feeling transparent on expressiveness, participants then read about three hypothetical situations and were asked to rate how transparent they would feel if they disclosed them to their partner. Participants were asked to imagine that they (1) got a job they were excited about, (2) had to give a speech at work with little time to prepare, and (3) were feeling distant from their partner. After each scenario, participants rated how obvious their feelings would be to their partner and how easily it would be for their partner to identify what they were thinking and feeling. These data are also exploratory, so I do not report these analyses here.

In the last part of the study, participants were asked to think back to the stressor they had written about earlier. They rated whether they had previously discussed the stressor with their partner (*Yes*/*No*), as well as the degree to which they typically go to their partner to disclose meaningful information about needs, goals, or concerns (1 = *Never*, 7 = *Always*). At the end of the study, participants were carefully debriefed and thanked for their time.

Measures.

Manipulation checks. I checked the effectiveness of the manipulation in two ways. First, I confirmed that participants were following instructions by asking them to indicate the

degree to which they were focused on their partner's evaluation of them while writing (1 = *Not at* all, 7 = *Very much*).

To assess perceived transparency, I borrowed a measure from Vorauer and Cameron (2002). Participants were asked to first consider, in their own mind, the degree to which they felt a series of emotion words (see Appendix A) on a scale of 1 = *Not at all* to 10 = *Extremely*. Then, participants were asked to consider whether their partner would have an accurate understanding of their feelings by indicating whether their partner would give them the same rating they gave themselves (*Yes*/*No*/*I don't know*) for each emotion. Felt transparency was operationalized as the number of times participants indicated *Yes* on this checklist, or the average number of emotions that participants thought would be transparent to their partner. I examined overall transparency across all emotion words ($M = 8.31$, $SD = 2.61$), as well as transparency of positive feelings ($M = 5.19$, $SD = 1.20$) and negative feelings ($M = 2.57$, $SD = 1.93$) separately.

Post-writing emotions. I measured participants' emotions after the manipulation for two reasons. First, I wanted to explore whether the manipulation elicited changes in mood after disclosing a stressor. I also wanted to be able to explore whether felt transparency of certain emotions was associated with simply feeling more of those particular emotions after the writing task. For example, perhaps participants in the transparency condition would feel their distress was more transparent if they also reported feeling more distress after the writing task. Thus, after the writing activities, participants completed a brief emotions checklist using a 5-point scale (1 = *Not at all* to 5 = *Extremely*). I computed two subscales of positive and negative mood by averaging five positively-valenced emotions (happy, content, interested,

excited, confident, α = .83) and four negatively-valenced emotions (distressed, upset, uneasy, frustrated, α = .87).

Dependent variables: Expressivity.

Self-reported expressivity. Using four items, I averaged participants' ratings of the quality of their own expressivity on a 7-point scale (1 = *Strongly disagree* to 7 = *Strongly agree*). Participants rated statements about the degree to which they revealed their thoughts and feelings in the email ("In my email, I disclosed a lot of information about my thoughts and feelings surrounding the stressful event") and the degree to which they shared details about the event ("In my email, I disclosed a lot of information about the details of the stressful event"). They also rated how open and honest they were in their email message, and how obvious their thoughts and feelings were in their message (α = .84).

Partner's ability to infer own thoughts and feelings. After each writing activity, I also measured participants' beliefs about whether their partner could accurately infer their thoughts and feelings from the note they had written using a scale of 1 = *Strongly disagree* to 7 = *Strongly agree* (α = .83). I averaged together their ratings on three statements: "When my partner reads my email, it will be easy for him/her to understand exactly what I was thinking or feeling," "When my partner reads my email, he/she will be able to tell exactly what I was feeling," and "When my partner reads my email, he/she will NOT be able to tell what I was thinking or feeling" (reversed).

Word count and time spent writing. To examine objective measures of expressivity, I used the Linguistic Inquiry and Word Count software (LIWC, Pennebaker, Booth, & Francis, 2007) to measure word count in the stressor and treasured memory messages. To assess the average time spent writing, I programmed the online questionnaire to save the number of

seconds that participants remained on the ostensible email pages of the survey. Because these variables were highly correlated ($r = .81$, $p < .001$), I standardized both variables and created a composite variable representing message length. The results are nearly identical (and all correlations with other variables are in the same direction and of nearly the same magnitude) if I analyze the word count variable by itself.

Affective word use. Using pre-existing LIWC dictionaries, I ran a count of (1) overall affective language use, (2) the number of positive affect words written, and (3) the number of negative affect words contained in the stress notes (see Appendices B and C for a complete list of the LIWC words contained in the positive and negative affect dictionaries separately; the overall affective language category contains all words collapsing across the positive and negative affect word dictionaries). The LIWC analysis yields a percentage of total words spoken in each category. In my analyses of these data, I first transformed these data into raw frequencies of the words spoken per category, then controlled for word count.

Observer ratings of expressivity. A team of four independent raters (three female, one male), blind to hypotheses, coded the stress messages for degree of expressivity. Inter-rater reliability was assessed with intra-class correlations (ICC). Raters evaluated the quality of expressivity along three dimensions: *evaluative self-disclosure* ("To what extent did this person disclose their *feelings* about the stressor?" ICC = .896), *descriptive self-disclosure* ("To what extent did this person disclose *details* about the stressor? ICC = .903), and the *overall clarity* with which they could understand the participant's thoughts and feelings ("To what extent was it *easy to understand* the writer's thoughts and feelings?" ICC = .881). All codes were rated on a 7-point scale, where 1 = *Not at all*, 7 = *Very much*. The three

dimensions were highly intercorrelated (all r's > .70, p < .001), so I combined them into a single composite of expressivity (α = .94).

Results

Analytic strategy. I tested for main effects of the transparency condition on perceptions of transparency and expressivity in the notes about stressors. I predicted that people who felt transparent would be *less* expressive – that is, they would report being less expressive, they would write fewer words, include fewer affective words, and would be rated as less expressive by objective raters. Please see Table 1 for descriptive statistics and zero-order correlations between the primary study variables.

Preliminary analyses. In preliminary analyses, I tested for main effects of gender and gender by condition interactions on all dependent variables to determine if there were any unexpected gender differences that should be taken into account in subsequent analyses. First, there were significant gender differences on only two study variables. On the manipulation check of perceived transparency, women felt their negative emotions were significantly more transparent in their email (M = 3.34, SD = 1.25) than did men (M = 2.85, SD = 1.53), $t(157) = 2.18$, $p = .031$. In addition, men reported disclosing significantly more details about the event (*descriptive self-disclosure*; M = 5.05, SD = 1.62) than did women (M = 4.49, SD = 1.49), $t(157) = -2.23$, $p = .027$. Second, there were no gender by condition interactions on any of the manipulation checks or dependent variables (all p's > .230). Thus, the effects of the transparency manipulation did not differ for male and female participants. Because gender did not moderate the effects of the manipulation, and I had no hypotheses about gender, I collapsed across gender in all primary analyses.

Primary analyses. All t-tests on the following variables are reported in Table 2.

Manipulation checks. I tested the effectiveness of the manipulation in two ways. First, at the end of the study, I verified that participants were following instructions by asking them to rate the degree to which they were focused on their partner's evaluation of them. I expected that participants in the transparency condition, relative to the control condition, would confirm that they were more focused on their partner's evaluation of themselves. Second, after each writing task, I assessed perceived transparency using a validated measure of transparency about positive and negative emotions (described above).

Perspective-taking instructions. To confirm that participants followed instructions when they were in the transparency condition, I asked participants to rate the degree to which they were focused on their partner's evaluation of them. Participants in the transparency condition (M = 4.38, SD = 1.57) were significantly more focused on their partner's evaluation of them than they were in the control condition, M = 3.63, SD = 1.81, $t(160) = -2.83$, $p = .005$. Thus, it appears participants were following instructions – but did they feel more transparent in the transparency condition?

Perceived transparency. First, I examined the number of emotions that participants thought would be transparent to their partner after writing a message about a personal stressor. Across conditions, participants thought that 7.93 of ten possible emotions were transparent (SD = 2.50). They also believed that roughly 3.57 positive emotions (out of six possible positive emotions) were transparent (SD = 1.98) and 3.16 negative emotions (out of four possible negative emotions) were transparent (SD = 1.37).

Contrary to predictions, participants in the control condition thought marginally *more* of their emotions were transparent to their partner (M = 7.69, SD = 2.43) compared to those in the transparency condition (M = 6.99, SD = 2.52), $t(160) = 1.81$, $p = .073$. When breaking

this checklist down by valence of emotions, participants in the control condition, compared to the transparency condition, thought significantly more positive emotions were transparent ($M_{control}$ = 3.95, SD = 1.90, $M_{transparency}$ = 3.20, SD = 2.01), $t(160) = 2.45$, $p = .015$. There were no differences in the number of negative emotions they felt were transparent ($M_{control}$ = 3.16, SD = 1.39, $M_{transparency}$ = 3.16, SD = 1.36 versus), $t(160) < .001$, $p = 1.00$]. In summary, the transparency manipulation seems to have *lowered*, rather than increased, participants' psychological sense of transparency (primarily for positive emotions).

Summary. It appears that although participants were following instructions, the perspective-taking manipulation did not successfully create more nor less perceived transparency. Although participants in the transparency condition reported being significantly more focused on their partner's evaluation of them, it was the participants in the *control* condition who felt their positive (but not their negative) emotions were more transparent after writing about a stressor. So, taken together, the manipulation did not create any more or less felt transparency. Although the manipulation checks suggested that my manipulation was not successful, I proceeded to test my hypotheses to determine if the manipulation had any effects on the dependent variables.[1]

Dependent variables.

Self-reported expressivity. I began by examining differences in participants' self-reported expressiveness of their written notes to their partner. I expected to find that participants in the transparency condition would be *less* expressive. Although the mean differences were not significant, the trend was in the opposite direction of my prediction. Specifically, participants thought they were somewhat *more* expressive in the transparency

[1] It is reasonable to assume that the transparency manipulation may have impacted participants' psychological sense of transparency in ways that were not fully captured by the self-reported transparency manipulation check.

condition (M = 5.42, SD = 1.05) than in the control condition (M = 5.21, SD = .99), $t(160)$ = -1.35, p = .178.

To probe further, I ran separate t-tests on the two components of the expressivity scale – emotional disclosure and descriptive disclosure. Participants in the transparency condition thought they expressed marginally more thoughts and feelings about the stressor (evaluative self-disclosure) compared to those in the control condition ($M_{transparency}$ = 5.14, SD = 1.30, $M_{control}$ = 4.72, SD = 1.54), $t(160)$ = -1.88, p = .062. However, participants in the transparency condition did not differ in how much they thought they had expressed details about the event (descriptive disclosure) compared to those in the control condition [$M_{transparency}$ = 4.80, SD = 1.54 versus $M_{control}$ = 4.60, SD = 1.59), $t(160)$ = .80, p = .423].

Partner's ability to infer own thoughts and feelings. Contrary to my predictions, participants did not think their partners would more easily interpret their thoughts and feelings in the transparency condition (M = 5.84, SD = .93) compared to the control condition (M = 5.67, SD = 1.02), $t(160)$ = -1.12, p = .263.

Word count and time spent writing. There were significant group differences in the standardized message length composite variable (comprised of word count and time spent writing). However, the effects were in the opposite direction from what I predicted. Participants in the transparency condition wrote significantly *longer* notes and spent more time writing their notes (M = .21, SD = 1.13) than participants in the control condition (M = -.21, SD = .68), $t(160)$ = -2.90, p = .004.

Affective word use. I ran the LIWC analyses in two ways. I examined mean differences in the three word count variables after controlling for word count. These analyses enabled me to hold the length of the message constant across participants and examine the

relative frequency of affective language use, irrespective of the length of the message. Participants did not differ in their overall use of affective language after controlling for word count, although the trend was such that affective language use was higher in the transparency condition [$M_{transparency}$ = 8.44, SE = .64, $M_{control}$ = 7.74, SE = .54, t(160) = -1.21, p = .228]. This pattern was contrary to my predictions. Participants did not differ in their use of positively-valenced affective language [$M_{transparency}$ = 3.57, SE = .46, $M_{control}$ = 3.48, SE = .39, t(160) = -.23, p = .816]. Participants did not differ in their use of negatively-valenced affective language, but the trend suggested more negative affect language in the transparency condition [$M_{transparency}$ = 4.87, SE = .43, $M_{control}$ = 4.28, SE = .36, t(160) = -1.51, p = .134]. Again, this was the opposite of what I predicted. When I re-ran these analyses but did not control for word count, these differences all became significant and stayed in the same direction (greater word count in the transparency condition, all p's < .02).

Observer ratings of expressivity. Contrary to predictions, stress notes were rated as significantly *more* expressive in the transparency condition (M = 4.55, SD = 1.30) than the control condition (M = 3.85, SD = 1.11), t(158) = -3.63, p < .001.

Discussion

The results of Study 1 suggest that (1) the perspective taking manipulation did not effectively increase feelings of transparency (at least as measured by the manipulation check) transparency, and (2) when there were condition differences, they were in a direction opposite of my predictions. The manipulation made participants *more* expressive in the transparency condition on a number of expressivity variables – self-reported evaluative self-disclosure, observer ratings of expressivity, and message length. It is clear that the act of taking a partner's perspective *increased* expressivity, whereas I had predicted that

perspective-taking would create greater perceived transparency and subsequently *lower* expressivity.

The first obvious limitation here is that, although I had sufficient power to detect condition differences, the perspective taking manipulation did not successfully manipulate perceived transparency in this study, at least as assessed by the perceived transparency checklist. As a result, I was unable to test the hypothesis that feeling more transparent would lead to less expressivity.

One reason why the manipulation failed to create transparency may be that I used a writing task in this study, whereas prior studies have used face-to-face interactions. It is unclear whether I could move around perceived transparency of thoughts and feelings in a writing task. Vorauer and Sucharnya (2013) moved around perceived transparency of specific states (positive and negative feelings) after a social interaction, but they did not assess transparency of affective states following a writing task, as I did in the current study. Although I did not detect group differences in perceived transparency, I found that participants felt their thoughts and feelings were readable to their partner to some degree (i.e., the means were well above zero). But again, it is still unclear whether perceived transparency of thoughts and feelings can be moved around by the manipulation in the context of written disclosures in the same way it can be manipulated in live social interactions. If people are about to disclose information by sending a message (and not interacting in a face-to-face discussion), would they approach this disclosure context assuming their thoughts and feelings are obvious to the message recipient? Can I assume that feeling transparent to the recipient of a written message would have analogous interpersonal consequences as feeling one's thoughts and feelings are transparent in a face-to-face

interaction? It is possible that the effects of feeling transparent in a written disclosure do not generalize to feeling transparent in live social interactions.

Although the perspective taking manipulation failed to increase perceived transparency, it did have a significant effect on expressiveness. The perspective-taking manipulation reliably made people *more* expressive. Although this pattern was opposite of what I had predicted (if perspective-taking were creating more transparency), it provides valuable information about the effects of perspective taking on expressive behavior in close relationships. If the perspective taking manipulation did not create perceived transparency, what effect did it have on disclosers? Perhaps perspective-taking created a different kind of change in disclosers' cognitive ability or motivation to express their thoughts and feelings, which then enabled them to *more effectively*, instead of less effectively, express themselves. One potential explanation that fits this argument would be that perspective-taking increased *self-other overlap*, or the degree to which participants cognitively see the self and partner as increasingly similar or interchangeable. Historically, several studies show that taking a stranger's perspective increases self-other overlap (Batson et al., 1997; Galinsky, Ku, & Wang, 2005; Galinsky, Wang, & Ku, 2008), and taking a partner's perspective increases autonomic attunement between couples discussing a conflict (Nelson, Laurent, Bernstein, & Laurent, 2016). The current study did not use the exact perspective-taking manipulation used in these prior studies, because I asked participants to take their partner's perspective *of them* in an effort to make the self a focus of evaluation. But perhaps disclosers were able to view themselves from their partner's perspective in such a way that they were truly focused on their *partner's* view of the self, and not more focused on the self as the Vorauer and Sucharnya's (2013) manipulation was designed to do. In their study, the imagine-other

perspective-taking instructions ironically increased self-focus because it was thought to increase egocentric bias and make people assume their inner states are obvious. But in my study, it is possible that perspective-taking helped disclosers truly see how their partner's view them, which then prompted them *not* to assume their inner state was obvious. Instead, perhaps their greater focus on their partner enabled them to express themselves in a way they thought would help their partner better understand them, or perhaps partner focus motivated them to be more communicative and intimate with their partner. Consistent with this idea, preliminary evidence suggests that participants in the transparency condition expressed a greater degree of *partner focus* in the notes, as rated by objective coders. The partner focus dimension captured any mention of the partner (offering gratitude, affection, seeking proximity, seeking advice), and participants mentioned their partner marginally more in the transparency condition ($M = 3.42$, $SD = 2.02$) than the control condition ($M = 2.89$, $SD = 1.70$), $t(158) = -1.79$, $p = .075$. Taking a partner's perspective might have cognitively enabled or motivated participants to express themselves in a way that they thought would better facilitate their partner's understanding.

Study 2

Study 1 provided an initial test of the fundamental theoretical assumption made by my model – specifically, that perceived transparency shapes expressive behavior. Although I encountered difficulties with the manipulation and was unable to test my hypothesis, I learned that the perspective-taking manipulation created more expressivity in written messages. In Study 2, I examined whether perceived transparency (using a slightly modified perspective taking manipulation) would have the predicted impact on expressive behavior in live social interaction. I ultimately retained a similar manipulation in Study 2 for a number

of reasons. First, the manipulation had been validated and shown to be effective in prior research involving social interaction (Vorauer & Sucharnya, 2013). Second, in order to compare findings in Studies 1 and 2, I did not want to introduce a new manipulation, find different effects, and then be unable to tease apart whether the different effects were due to the use of a different manipulation. Thus, I moved on to Study 2, my second experimental laboratory study, in which I tried again to test the primary research hypothesis (that perceived transparency would reduce expressiveness), but this time in the context of live social interaction. In addition, in Study 2, I also investigated the downstream consequences of perceived transparency (and expressiveness) by testing the full causal model in romantic couples.

To test my hypotheses, I borrowed a stress induction paradigm designed to elicit the seeking and provision of social support in an unstructured social interaction between romantic partners (see Forest, Kille, Wood, & Holmes, 2014). In this paradigm, one member of each couple (the *support-seeker*) is asked to complete a series of frustrating tasks, after which they are reunited with their romantic partner (the *support-provider*) to complete a mundane (sock sorting) task. This mundane task provides the social context within which to examine whether a transparency manipulation diminishes support-seekers' expressiveness, and whether expressiveness, in turn, effects support-providers' perceptions (empathic accuracy) and support behavior. Specifically, this paradigm was used to examine (1) support-seekers' perceived transparency and expressive behavior, (2) support-providers' empathic accuracy, and (3) support-providers' responsiveness.

Hypotheses

I theorized that support-seekers' transparency would diminish their expressiveness and their partners' (the support-providers') ability to be responsive. Specifically, I predicted that when support-providers were led to feel more transparent, they would exhibit less expressiveness. Lower expressiveness would, in turn, predict diminished empathic accuracy among support-providers. This dampened empathic accuracy should then be associated with impairments in support-providers' responsive behavior (and support-seekers' decreased perceptions of support). Critically, I expected that the relationship between transparency and empathic accuracy and responsiveness would be mediated by targets' expressive behavior, such that support-seekers who felt more transparent would be less verbally expressive. The conceptual model is presented below.

Method

Participants. Participants were 66 couples (68 females, 64 males) recruited from the University of California, Santa Barbara and the surrounding community. Couples (59 heterosexual, 7 same-sex) were required to be in a committed, romantic relationship for at least three consecutive months (average relationship length = 10.95 months, *SD* = 11.53, 17% cohabiting). One additional couple was recruited for the study but did not release their data after the debriefing. Participants were 19.61 years old (*SD* = 2.29). They were 33% Asian/Pacific Islander, 28% White, 16% Hispanic or Latino, 4% Black or African American, 5% "Other," and 14% declined to state an ethnicity. Couples participated for partial course credit in an introductory psychology course or $20 in cash. Power analyses indicate that in this sample ($n_{transparency}$ = 35, $n_{control}$ = 31), I had .51 power to detect a medium effect (*d* = .50).

Procedure. Participants were recruited via flyers posted around campus and an online subject pool to participate in a two-part study with their romantic partner on personality and perception. Before the laboratory session, members of the couple were randomly assigned to be either the *support-seeker* or the *support-provider*. They received an email containing a link to one of two background questionnaires (one for support-seekers, one for support-providers). I measured ten personality and relationship variables (see Appendix F for a list of measures) to explore their interaction with condition on the support-seekers' perceptions of transparency and expressiveness. Here, I report only the demographic data.

Couples arrived to the lab about one week later to participate in a study ostensibly about personality processes in perception and behavior. During the informed consent process, two experimenters explained that the goal of the study is to examine how personality plays a role in peoples' thoughts and feelings when working alone versus in a pair. Participants were informed that they might be video-recorded at some point during the study.

Couples were then separated into two different rooms and were seated at a computer. They each completed a brief, identical questionnaire assessing their baseline emotional state.

Support-seekers' stress induction. After completing the emotions checklist, support-seekers completed a series of tasks designed to induce frustration and elicit support-seeking behavior (adapted from Forest et al., 2014). The goal of this stress induction was to create a situation in which support-seekers would reveal their distress or discomfort to their partners, so that I could measure their expressivity and support-seeking behavior.

The experimenter introduced the first task as a "tactile perception activity." In this first task, the experimenter provided support-seekers with a list of 10 lines of text. Each line contained random, alpha-numeric text printed in a small, gray font, making the text fairly

difficult to read. Support-seekers were told that they would have four minutes to enter each line of data into an online form, as accurately and as quickly as possible. The online form was programmed to periodically display error messages informing participants that they had made a data entry error and needed to re-enter that line of text. Experimenters sat nearby with a timer and suspended the data entry activity after the four minutes had expired.

After the four minutes, experimenters introduced the second task as a measure of cognition and perception. Support-seekers were given a pair of headphones and were asked to listen to five 20-second sound clips presented in a random order (loud car horns, traffic, nails on a chalkboard, a fly buzzing, and a jackhammer). To bolster the cover story, they were given a brief questionnaire and were asked to list the five sounds they had heard and rate their enjoyment of and discomfort with the activity.

The third and final task was introduced as a "quantitative perception task" in which participants were asked to complete difficult GRE-style math questions in a three-minute period while the experimenter waited nearby. To make the questions more frustrating and difficult to solve, support-seekers were not allowed to use scratch paper to complete the math questions. Some participants requested scratch paper, but their request was denied and they were asked to continue without it.

After completing the tasks (which took about ten minutes), support-seekers rated their emotional state using an emotions checklist. These ratings allowed me to compare their emotional state against their baseline emotional state, to ensure that the frustrating tasks induced a negative mood.

Support-providers' neutral tasks. Meanwhile, support-providers worked on one of two activities designed to be neutral or fairly pleasant. They could choose whether they

wanted to play a game ("Colorku," an adapted version of Sudoku that involves colored marbles instead of numbers), or they could color a coloring book using an assortment of markers. Support-providers were asked to continue working on the activity of their choosing until the experimenter told them to stop. After about ten minutes (i.e., the time it took for support-seekers to complete their frustrating activities across the hall), support-providers rated their emotional state using the same emotions checklist they had completed earlier. To bolster the cover story, support-providers also completed a brief questionnaire assessing their ratings of the activity they had chosen (e.g., "How much did you enjoy/dislike the activity you just completed?").

Support-seekers' transparency manipulation. After the support-seekers completed the frustrating tasks and emotions checklist across the hall, half of them were randomly assigned to receive the same transparency manipulation (perspective-taking instructions) as reported in Study 1. Just before reuniting support-seekers with their partner, they were told:

> *For the next part of the study, we're going to have you wait with your partner in the other room while we set-up for your next activity in here. When you're with your partner in the other room, we would like you to take your partner's perspective – to see yourself through your partner's eyes. Do everything you can to imagine what your partner is thinking and feeling about you while the two of you are together.*

Sock-folding task. After the manipulation, partners were then reunited in a room with couches and hidden audiovisual equipment. They were told that the purpose of the next task is to give the couple a neutral activity to complete while the researchers set up equipment in the next room. Borrowing Forest et al.'s (2014) paradigm, participants were given a basket of ten clean, unmatched socks and were asked to match and fold the socks. In reality, the

purpose of this task was to allow participants to freely discuss their respective lab tasks they had just completed and to provide a context for the couple members to engage in emotional disclosure and responsive behavior. After administering the instructions, experimenters left the couple alone and began recording their interaction for five minutes.

Support-seekers' post-interaction thoughts, feelings, and perceived transparency. After the five-minute period, partners were again separated into two different rooms. Support-seekers were given a single sheet of paper and were asked to write all the thoughts and feelings they could remember experiencing during the interaction they just had with their partner. After this free response, they were asked to complete a questionnaire assessing their emotions, perceived transparency, self-reported expressiveness, and perceived partner responsiveness during the interaction (described in more detail, below).

Support-providers' post-interaction thoughts, feelings, and inferences. At the same time, support-providers were also given a single sheet of paper in the other room. They were asked to write down what they thought their *partner* was thinking and feeling during their interaction. Support-providers also completed a questionnaire assessing their current emotions and ratings of their own responsive behavior toward their partner (described below). They were also asked to infer their *partner's* emotions during the interaction, using the same emotions checklist, so that I could later construct a measure of empathic accuracy by comparing support-seekers' actual emotion ratings against support-providers' inferences of each emotion.

Video review procedure. After the questionnaires, I used a validated video review paradigm (Ickes, Robertson, Tooke, & Teng, 1986; Verhofstadt et al., 2008) as a second way to assess support-providers' empathic accuracy. Before the video review, both partners were

partially debriefed and told that they were being video-recorded during the sock-folding task. Experimenters asked both partners for their consent to show them the recording and waited for participants to verbally consent to view their recording. All participants agreed to view the recording.

Both partners participated in the video review at the same time, in different rooms, with an experimenter present. Experimenters paused the tape every 30 seconds. At each time stop, support-seekers were asked to list the specific thoughts and feelings they experienced at that specific moment in the interaction. Support-providers were asked to *infer* their partner's feelings at each time stop. Over the 5-minute interaction, there were 10 time-stops. For future analyses, trained coders will compare the support-providers' inferences alongside the support-seekers' actual thoughts and feelings. The degree of overlap between thoughts and inferences will reflect my second measure of empathic accuracy. Preparation of these data is currently underway.

Final questionnaire. In the final questionnaire, I ran some checks to ensure that support-seekers were following instructions. I asked them to rate the degree to which they were focused on their partner's evaluation of them and to indicate which instructions, if any, they received before the interaction with their partner.

Measures: Support-seekers.

Pre-interaction self-report measures.

Baseline emotions. To assess and potentially control for baseline mood upon entering the lab, participants completed an emotions checklist using a 5-point scale (1 = *Not at all* to 5 = *Extremely*). A factor analysis of these emotions yielded two distinct factors reflecting positively- and negatively-valenced emotions (explaining 30.84% and 12.80% of the

variance, respectively). I computed two separate indices of positive and negative mood by averaging five positively-valenced emotions (happy, content, confident, interested, enthusiastic; α = .86) and five negatively-valenced emotions (frustrated, annoyed, distressed, upset, tense; α = .80).

Post-task emotions. After the frustrating tasks, participants completed the same emotions checklist described above, where 1 = *Not at all* to 7 = *Extremely*. The purpose of this second assessment of mood was to ensure that the frustrating tasks created significantly more negative mood (i.e., personal distress or frustration) compared to their pre-task mood. Once again, a factor analysis yielded two factors reflecting positive (38.76% of the variance) and negative mood (13.89% of the variance). The positive mood scale contained the same five feelings averaged together: happy, content, confident, interested, and enthusiastic (α = .89). The negative mood contained seven feelings averaged together: frustrated, annoyed, distressed, upset, tense, stressed, and nervous (α = .89).

Post-interaction self-report measures.

Post-interaction emotions. After the interaction, participants completed another emotions checklist using the same 7-point scale (1 = *Not at all* to 7 = *Extremely*). Once again, a factor analysis yielded a positive emotion factor (38.40% of the variance) and a negative emotion factor (13.27% of the variance). I averaged five positive emotions together, including happy, content, at ease, enthusiastic, and interested (α = .87). I also averaged seven negative emotions together, including frustrated, stressed, annoyed, nervous, tense, upset, and distressed (α = .90).

Perceived transparency. As in Study 1, perceived transparency was assessed using an adapted version of Vorauer and Cameron's (2002) measure. Participants were given a list of

emotions and were asked to consider, just in their own mind, how much they felt each emotion during the interaction on a scale of 1 = *Not at all* to 10 = *Extremely*. Then, they rated whether their partner could accurately infer the extent to which they were feeling each of the emotions on the list. Specifically, they were asked "Would your partner give you the same rating you gave yourself?" They were then instructed to circle a response for each emotion (*Yes*/*No*/*I don't know*). As in Study 1, perceived transparency was operationalized as the number of times participants indicated *Yes* on this checklist, which reflects the average number of emotions that participants thought were transparent to their partner on a list of 18 emotions. I examined overall transparency across all 18 emotion words (M = 11.24, SD = 4.31), as well as transparency of eight positive feelings (M = 5.30, SD = 1.97) and ten negative feelings (M = 5.94, SD = 3.50) separately.

Self-reported expressiveness. I used five items to assess support-seekers' perceptions of how readable and expressive they were to their partner. Participants rated their endorsement of statements such as "I was emotionally expressive," "My feelings were obvious," and "My feelings were clearly visible to my partner" using a 7-point scale (1 = *Strongly disagree* to 7 = *Strongly agree*; α = .92). Although some of these items, conceptually, appear to reflect perceived transparency and readability, I encountered difficulty empirically distinguishing perceived transparency assessed *after* the interaction from perceptions of expressiveness during the interaction. Thus, I conceptualize these items as perceptions of one's own expressivity.

On two separate items, I also explored whether the manipulation would affect support-seekers' beliefs about the *content* of what they were expressing. I asked support-seekers to rate their *evaluative self-disclosure* by endorsing the item "I disclosed my thoughts

and feelings to my partner." I also measured *descriptive self-disclosure* using the item "I talked a lot about other activities I had to do earlier in the study," 1 = *Strongly disagree* to 7 = *Strongly agree*. These two dimensions were not related to one another ($r = .11$, $p = .373$), suggesting that discussing one's thoughts and feelings about the frustrating tasks was not conceptually the same as discussing details about the frustrating tasks.

Self-reported expressive suppression. In Study 2, I added a measure of expressive suppression to assess motivational underpinnings of expression. It is possible that readability impairs expressiveness because people feel more *motivated* to suppress their thoughts and feelings. I asked support-seekers to rate the degree to which they were suppressing their feelings during the interaction, using two items: "I was trying to suppress my emotions rather than show them" and "I was holding back from telling my partner my true thoughts and feelings." Ratings were made on a 7-point scale where 1 = *Strongly disagree* to 7 = *Strongly agree*. I averaged these two items together ($r = .43$, $p < .001$) to form a composite of expressive suppression, where higher scores reflect greater suppression.

Perceived partner responsiveness. Using Reis's (2006) *perceived partner responsiveness* scale, I averaged 11 items assessing support-seekers' perceptions of the extent to which their partners demonstrated caring, understanding, and validating behavior during their social interaction (1 = *Not at all* to 7 = *A great deal*; $\alpha = .94$). In the analyses reported below, I use this measure to explore the dyadic effect of support-provider empathic accuracy on the support-*seekers*' perceptions of support, so as to have a second perspective on the support-providers' responsiveness.

Objective measures of expressivity.

Word count. As in Study 1, the support-seekers' transcripts were transcribed and submitted to the LIWC software (Pennebaker, Booth, & Francis, 2007). This variable reflects the total number of words the support-seekers uttered in the interaction.

Affective word use. In another LIWC analysis, I also asked for the same three word counts as in Study 1. I ran a count of overall affective language use, positive affect words, and negative affect words that support-seekers used during their speaking turns (see Appendix C and D for the LIWC dictionaries). The LIWC analysis yields percentages of words in each category divided by the total number of words spoken, so I transformed these data into raw frequencies of words per category and ultimately controlled for word count in primary analyses.

Words about the frustrating tasks. In the final LIWC analysis, I created a custom dictionary containing words germane to the support-seekers' frustrating tasks. This dictionary contained 45 words that support-seekers might mention when discussing the lab tasks, including "math," "sounds," "buzzing," and "codes" (see Appendix E for the full list of words in this dictionary). As with the other LIWC analyses, I transformed these percentages of the total word count into raw frequencies, then controlled for word count.

Observer ratings of expressivity. The final measures of expressiveness were from objective observers. A team of three female, independent raters, blind to condition, viewed the transcripts to rate support-seekers' expressivity. They first counted the number of support-seekers who mentioned the lab tasks at all (*Yes*/*No*). They also rated support-seekers' expressivity along three continuous dimensions. They rated support-seekers' *evaluative self-disclosure*, or the degree to which support-seekers expressed their thoughts and feelings (appraisals) about the lab tasks ("To what extent did this person disclose their *feelings* about

the lab activities?" ICC = .84). Observers also rated *descriptive self-disclosure*, or the degree to which support-seekers described the details of their prior lab tasks ("To what extent did this person disclose *details* about the lab tasks?" ICC = .91) Finally, they rated the *overall clarity* with which they could understand the partner's thoughts and feelings ("To what extent was it *easy to understand* the writer's thoughts and feelings about the lab tasks?" ICC = .79). These three dimensions were rated on a 7-point scale, where 1 = *Not at all*, 7 = *Very much*. They were highly intercorrelated (α = .94), so I averaged the three variables together to create a composite of observer ratings of expressivity.

I also wanted to get a sense of the overall emotional tone of the support-seekers expressivity, to explore whether support-providers were able to use the support-seekers' overall positive or negative expressivity to infer the valence of the support-seekers' feelings. The same three observers rated support-seekers' negative emotional tone, which included complaining, expressions of feeling annoyed, hungry, or tired, or irritation and confusion about the study procedures (1 = *Not at all negative*, 7 = *Extremely negative*; ICC = .82) The positive emotional tone captured levity and positive comments such as expressions of affection, jokes, laughter, and singing (1 = *Not at all positive*, 7 = *Extremely positive*; ICC = .85). These ratings were negatively correlated with one another, r = -.41, p = .001.

Measures: Support-providers. I obtained a number of pre-interaction measures from support-providers for two overarching reasons. First, I wanted to be able to ensure that support-providers' baseline mood did not differ as a function of support-seeker condition, and second, I wanted to be able to control for baseline emotions in the event the support-providers' emotional state upon arriving to the lab shaped their ability or motivation to be responsive. I do not report these data in my primary analyses so I do not expand on the

measures here. The support-provider data of primary interest are the measures collected after the interaction with their partner.

***Post-interaction measures*.**

Post-interaction emotions. After the interaction, I measured support-providers' emotions using an emotions checklist (1 = *Not at all* to 7 = *Extremely*). A factor analysis yielded a positive emotion factor (12.98% of the variance) and a negative emotion factor (27.73% of the variance). I averaged five positive emotions together, including content, at ease, enthusiastic, happy, and confident ($\alpha = .81$). I also averaged four negative emotions together, including upset, frustrated, annoyed, and sad ($\alpha = .88$).

Inferences of partner's post-interaction emotions. I also measured support-providers' inferences of the degree to which they thought their partner felt a series of emotions, using the same emotions checklist (1 = *Not at all* to 7 = *Extremely*). As previously mentioned, I assessed these inferences so that I could construct empathic accuracy measures by comparing these inferences to the support-seekers' actual post-interaction emotion ratings (see below). I made two composite variables of support-providers' inferences by averaging the same emotions that went into the support-seekers' post-interaction positive emotions composite (content, at ease, enthusiastic, happy, and confident, $\alpha = .89$) and negative emotions composite (frustrated, stressed, annoyed, nervous, tense, upset, and distressed, $\alpha = .86$).

Partner's expressivity. I measured support-providers' perceptions of their partner's expressivity by asking them to endorse statements such as "my partner was emotionally expressive" and "my partner's feelings were very readable," where 1 = *Strongly disagree* to 7 = *Strongly agree*. I averaged these items together to make a composite of perceived partner expressivity ($\alpha = .88$).

I also asked support-providers to rate the content or quality of support-seekers' disclosure by asking them to endorse two items: "My partner shared his/her thoughts with me" (*evaluative self-disclosure*) and "My partner talked a lot about the activities he/she had to do earlier in the study" (*descriptive self-disclosure*). All items were measured using a scale of 1 = *Strongly disagree* to 7 = *Strongly agree*. Responses to these two items were only somewhat correlated ($r = .27$, $p = .027$), so I analyzed them separately.

Partner's expressive suppression. Support-providers also rated whether their partner was trying to suppress his or her feelings during the interaction. They endorsed statements such as "My partner was trying to suppress his or her emotions rather than show them" and "My partner was holding back from telling me his or her true thoughts and feelings." Ratings were made on a 7-point scale where 1 = *Strongly disagree* to 7 = *Strongly agree*. I averaged these two items together ($r = .45$, $p < .001$) to form a composite of perceived expressive suppression.

Empathic accuracy. My primary measure of empathic accuracy was adapted from Cote et al. (2011) and Gordon and Chen (2013). This measure involves taking the absolute value of the difference between the support-recipients' post-interaction mood and the support-seekers' *inferences* of their partner's post-interaction positive and negative mood. I computed three measures of support-providers' empathic accuracy: overall empathic accuracy (collapsing across emotion valence), empathic accuracy about positive emotions, and empathic accuracy about negative emotions.

To compute the overall empathic accuracy variable, I took the absolute value of the difference between the support-seekers' actual rating and the support-providers' inference on each individual emotion, reverse-coding all negative emotion ratings and inferences. I then

took the average of these absolute differences. Higher numbers reflect greater *inaccuracy*.

I used the same method to compute the two positive and negative emotion empathic accuracy dimensions. For positive emotions, I took the absolute value of the difference between the support-seekers' actual rating of positive emotions and the support-providers' inference on each individual positive emotion (interested, happy, confident, at ease, enthusiastic, proud, content). I then averaged these difference scores together ($\alpha = .67$) to create a measure of empathic accuracy of positive emotions. I used the same method for negative emotions (nervous, annoyed, upset, sad, frustrated, depressed, and stressed, $\alpha = .73$). Thus, higher values reflect more inaccuracy in support-providers' inferences. The absolute difference on overall empathic accuracy ranged from 2.20 (least accurate) to .40 (most accurate), $M = 1.023$, $SD = .41$. Absolute differences in empathic accuracy about positive emotions ranged from 2.80 (least accurate) to .00 (most accurate), $M = .98$, $SD = .67$, and absolute differences in empathic accuracy about negative emotions ranged from 2.43 (least accurate) to .00 (most accurate), $M = .55$, $SD = .56$.

To use this measure as an independent variable, I needed to partial out variance in the support-seekers' actual post-interaction feelings. Interpretation of difference scores on their own is problematic; if I were to request the correlation between the difference-scored variable and some outcome of interest, it would be impossible to tell whether one or both of the constituent parts (e.g., the support-seekers' actual mood versus the support-providers' inference) is exerting influence on the outcome variable (Griffin, Murray, & Gonzalez, 1999). In other words, the difference between support-seekers' actual mood and support-providers' inferences is confounded by support-seekers' actual mood. Using the residuals helps correct for this problem, because the residuals reflect remaining variance in support-

providers' inferences after holding constant the variance in support-seekers' mood. They reflect a "conditional" relationship: holding the support-recipients' actual mood constant, to what extent do support-providers' inferences (i.e., their empathic accuracy) predict responsiveness? To obtain these residuals, I regressed the difference score onto the support-seekers' actual ratings of their post-interaction feelings and saved the residuals in two separate analyses (one for each valence). These residuals reflect empathic accuracy scores that were not contaminated by differences in the support-seekers' ratings, which enabled me to use them as predictor variables in primary analyses. After I finish collecting data from the full sample of 100 couples, I will use the video review data as a second measure of empathic accuracy in future analyses.

Responsiveness toward partner. Support-providers rated their *own* responsive behavior (i.e., understanding, validating, and caring behavior) using an adapted version of Reis's (2006) perceived partner responsiveness scale. Items were modified to measure support-providers perception of their own responsive behavior (e.g., "I cared about my partner" and "I understood and accepted my partner," 1 = *Not at all* to 7 = *A great deal*, α = .91).

Results

Analytic strategy. In a series of t-tests, I first tested whether the manipulation had any effect on the support-seekers' perceived transparency and expressiveness and the support-providers' empathic accuracy and self-reported responsive behavior (see Tables 4 and 5 for a presentation of group means). To minimize experimentwise error, I conducted four hypothesis tests on my primary dependent variables. I tested for main effects of condition on (1) overall word count, (2) expression of negative affect words, (3) overall

expressivity as rated by objective observers, and (4) support-seekers' perceptions of partner responsiveness. Follow-up t-tests of supplementary variables of interest (e.g., support-seekers' self-reported expressivity, overall word count, overall affective language) also appear after the primary hypothesis tests and in Table 4.

After testing for condition differences in the primary support-seeker and support-provider variables, I planned to run the proposed theoretical model depicted in Figure 2. I predicted that the perspective-taking manipulation would increase support-seekers' perceptions of transparency and in turn would decrease objective measures (observer ratings, LIWC analyses) of their expressiveness and affective language use. In the latter half of the model, I predicted that this decreased expressiveness would predict decrements in the support-providers' empathic accuracy. This diminished empathic accuracy should, in turn, be associated with less responsive behavior from support-providers.

Preliminary analyses. Since the support-seeker was my primary unit of analysis, I first explored support-seeker gender differences and ensured that gender and condition were not interacting to predict any of the dependent variables. Condition was not confounded with support-seeker gender X^2 (1, N = 66) = .06, p = .801).

There was one gender difference. Male support-seekers reported significantly higher positive mood after the frustrating tasks (M_{Male} = 4.42, SD = 1.23, M_{Female} = 3.62, SD = 1.32), t(64) = -2.54, p = .014. To explore the interaction of gender and condition, I ran a series of 2 (*condition*: transparency/control) by 2 (*gender*: male/female) ANOVAs on all primary dependent variables. There was only one significant interaction of condition and gender on support-seekers' perception of their own expressivity, F(1, 62) = 6.49, p = .013. Tests of simple main effects revealed that men in the transparency condition (M = 4.84, SE = .28)

thought they were significantly less expressive than men in the control condition (M = 5.92, SE = .31), p = .013, whereas women did not differ by condition in their perceptions of their own expressiveness (p = .304). Thus, in analyses involving self-reported expressivity, I control for gender.

Manipulation check for frustrating tasks. Because I wanted to create a context in which support-seekers would be more likely to disclose their emotions to their partner, I wanted to be sure that the frustrating tasks created feelings of frustration for the support-seekers. Thus, I assessed pre-task and post-task mood to confirm that support-seekers felt significantly more frustrated after completing the tasks relative to their initial (baseline) mood. A paired samples t-test confirmed that participants felt significantly more frustrated after the lab tasks (M = 2.71, SD = 1.22) compared to their baseline negative mood (M = 1.50, SD = .52), $t(64) = -9.44$, $p < .001$.[2]

Manipulation checks for transparency. I tested the effectiveness of the transparency manipulation using two measures that were identical to the checks used in Study 1. The first measure was simply a check to ensure that participants in the transparency condition were following instructions. The second check, adapted from Vorauer and Cameron (2002), was a measure of the degree to which support-seekers felt that each of their feelings were transparent to their partner during the interaction.

Perspective-taking instructions. In one item that appeared in the support-seekers' final questionnaire, I asked them to rate the degree to which they were focused on their partner's evaluation of them (1 = *Not at all*, 7 = *Very much*). Participants in the transparency

[2] In exploratory analyses of pre-task baseline mood, there were some trends suggesting that participants in the transparency condition were in a slightly better mood than participants in the control condition upon arriving to the lab. These trends were marginal and did not change the results of mood after the frustrating tasks.

condition (M = 4.38, SD = 1.57) were significantly more focused on their partner's evaluation of them than they were in the control condition, M = 3.63, SD = 1.81, $t(160) = -2.83$, $p = .005$.

I also asked participants to think back to the instructions they received before the interaction with their partner and asked them to indicate the instructions they received from a list ("*I was asked to imagine what my partner was thinking or feeling about me*," "*I did not receive special instructions*," or "*I cannot remember*"). A chi-square test of independence confirmed that participants in the transparency condition were significantly more likely to report that they were asked to take their partner's perspective, X^2 (2, N = 63) = 35.47, $p < .001$.

Perceived transparency. The primary manipulation check was identical to that of Study 1 and has the same limitation in that it was assessed *after* the interaction. Overall, support-seekers thought that approximately 11 (M = 11.24, SD = 4.31) of 18 feelings were transparent to their partner. Collapsing across conditions, participants thought that approximately 5 (M = 5.30, SD = 1.97) of 8 possible *positive* feelings were transparent, and 6 (M = 5.94, SD = 3.50) of 10 possible *negative* feelings were transparent. Next, t-tests by condition did not reveal any significant differences on these measures of perceived transparency. However, unlike Study 1, trends *were* in the direction of my predictions. On the overall transparency measure, participants in the transparency condition thought slightly more feelings were transparent (M = 11.91, SD = 4.53) compared to the control condition (M = 10.48, SD = 4.00) $t(64) = -1.35$, $p = .181$. For perceived transparency about positive emotions, there were no differences by condition [$M_{transparency}$ = 5.43, SD = .2.05 versus $M_{control}$ = 5.16, SD = 1.90; $t(64) = -.57$, $p = .586$]. Likewise, there were no differences by

condition on negative emotions, but the means were in the predicted [$M_{transparency}$ = 6.49, *SD* = 3.65 versus $M_{control}$ = 5.32, *SD* = 3.28; $t(64) = -1.36$, $p = .180$].

Summary. Once again, participants were following instructions and confirmed that they took their partner's perspective during the interaction. Although the trends were not significant, overall perceived transparency appeared higher in the transparency condition. This pattern is consistent with the goal of the manipulation and suggests that the manipulation is moving participants in the right direction.

Primary analyses: Support-seekers.

Hypothesis 1: Overall word count. In the first round of objective expressivity analyses, I used LIWC to assess word count and frequencies of affective language (positively- and negatively-valenced) use. These analyses were conducted on $N = 57$ support-seekers of 66 total support-seekers. We were unable to obtain 6 transcriptions due to video-recording equipment failure, 2 conversations were in Mandarin, and poor audio quality of 1 conversation prevented it from being suitable for transcribing. The LIWC analyses reported here are conducted on $n_{control} = 25$ and $n_{transparency} = 32$.

There were no differences by condition on the number of words support-seekers uttered during the interaction [$M_{transparency}$ = 425.08, *SD* = 114.09 versus $M_{control}$ = 423.72, *SD* = 115.18; $t(55) = -.05$, $p = .964$].

Hypothesis 2: Negative affect words. However, there was a marginal effect of condition on negative affect words in the predicted direction. Participants in the transparency condition said fewer negative affect words ($M_{transparency}$ = 7.73, *SE* = 1.03) than participants in the control condition ($M_{control}$ = 10.79, *SE* = 1.16), $F(2, 54) = 3.90$, $p = .053$.

To confirm that this difference in perceived transparency of negative emotions was not just a function of feeling more negative in the transparency condition, I examined condition differences on post-interaction negative mood while controlling for pre-interaction negative mood (see Table 4). Support-seekers did not report greater negative mood in the transparency condition ($M = 1.51$, $SE = 0.14$) compared to the control condition ($M = 1.77$, $SE = 0.15$), $F(2,63) = 1.57$, $p = .215$. Thus, the difference in negative expressivity appears to be rooted in the expression of negative mood only, and not the actual experience of negative mood.

Hypothesis 3: Observer ratings of expressivity. A simple count of the number of support-seekers who mentioned the frustrating lab tasks revealed that 91% of the support-seekers mentioned the tasks to their partner. A chi-square test of independence indicated that people were not any more or less likely to mention the frustrating tasks in either condition, X^2 $(1, N = 55) = 1.44$, $p = .231$. On observers' ratings of overall expressivity, there were no significant differences by condition [$M_{transparency} = 2.94$, $SD = 1.41$ versus $M_{control} = 2.96$, $SD = 1.56$; $t(55) = .05$, $p = .958$]. Raters did not detect differences by condition in overall positive emotional tone [$M_{transparency} = 2.48$, $SD = 1.17$ versus $M_{control} = 2.19$, $SD = .98$; $t(55) = -1.02$, $p = .312$]. For negative emotional tone, one trend suggested that support-seekers in the transparency condition expressed somewhat *less* negativity, but the difference did not reach significance [$M_{transparency} = 2.53$, $SD = 1.33$ versus $M_{control} = 3.08$, $SD = 1.82$; $t(55) = 1.32$, $p = .194$].

***Hypothesis 4: Perceived partner responsiveness*.** There were no significant differences by condition in support-seekers' perceptions of partner responsiveness, $M_{transparency} = 5.89$, $SD = 1.09$ versus $M_{control} = 5.66$, $SD = .97$; $t(64) = -.90$, $p = .37$.

Supplementary analyses: Support-seekers.

Self-report variables: Mood and expressivity. I examined differences in support-seekers' self-reported expressivity (overall expressivity, evaluative self-disclosure, descriptive self-disclosure, and expressive suppression), objective measures of expressivity (word count, affective language use, and observer ratings), and their perceptions of responsiveness as a function of condition.

Self-reported expressivity. On three measures of expressivity, I did not find any differences in support-seekers' beliefs about their expressiveness during the interaction. One trend was consistent with the hypothesis that transparency should impair expressiveness: On the overall measure of readability and expressivity, participants in the transparency condition thought they were somewhat less expressive ($M_{transparency}$ = 5.14, *SD* = 1.38) than participants in the control condition (*M* = 5.46, *SD* = 1.06), but the difference was not significant, $t(64) = 1.03$, $p = .308$. There was no difference by condition in support-seekers' ratings of their evaluative disclosure [$M_{transparency}$ = 5.34, *SD* = 1.94 versus $M_{control}$ = 5.32, *SD* = 1.64; $t(64) = -.05$, $p = .964$], nor was there any difference in their descriptive self-disclosure [$M_{transparency}$ = 5.63, *SD* = 1.34 versus $M_{control}$ = 5.84, *SD* = 1.57; $t(64) = .58$, $p = .564$].

Self-reported expressive suppression. I expected that participants in the transparency condition would be more likely to suppress their thoughts and feelings during the interaction. Consistent with this prediction, participants in the transparency reported marginally more expressive suppression (*M*= 1.96, *SD* = 1.04) than participants in the control condition (*M* = 1.58, *SD* = .75), $t(64) = -1.67$, $p = .101$.

Other objective measures of expressivity: Word counts and observer ratings.

Overall affective word use. I first conducted an ANCOVA on the frequency of overall affective words, controlling for word count. I then examined frequencies of positive and negative affective words separately, controlling for word count. On overall affective language, there were no differences by condition, $M_{transparency}$ = 25.37, *SD* = 1.56 versus $M_{control}$ = 27.53, *SE* = 1.77; $F(2, 54) = .84$, $p = .363$.

Positive affective word use. There were no significant differences in positive affect words [$M_{transparency}$ = 17.55, *SE* = 1.12 versus $M_{control}$ = 16.67, *SE* =1.27; $F(2, 54) = .27$, $p = .605$].

Words about the frustrating tasks. In another ANCOVA, controlling for word count, I did not find any significant differences in support-seekers' use of task-related words [$M_{transparency}$ = 10.31, *SE* = 1.08 versus $M_{control}$ = 9.59, *SE* = 1.22; $F(2, 54) = .20$, $p = .661$].

Primary analyses: Support-provider. Analyses of the support-provider were conducted on measures that came after the interaction. I examined condition differences in support-providers' ratings of their partner's expressivity, their empathic accuracy, and their perceptions of their own responsiveness toward their partner. Again, to minimize experimentwise error, I conducted two hypothesis tests on primary support-provider dependent variables. I tested for main effects of condition on (1) empathic accuracy (Hypothesis 5) and (2) support-providers' perceptions of their responsiveness (Hypothesis 6). Supplementary analyses of condition differences on other self-report variables appear below these primary analyses.

Hypothesis 5: Empathic accuracy. To test for condition differences on my three measures of empathic accuracy, I ran ANCOVAS on the absolute difference scores between support-seekers' actual post-interaction feelings and support-providers' inferences. As noted

above, these analyses partial out variance due to support-seekers' actual feelings; without controlling for support-seekers' feelings, it is impossible to discern whether it is the actual difference between support-seekers' and support-providers predicting an outcome or whether it is simply the effect of support-seekers actual feelings that is driving the association (Griffin, Murray, & Gonzalez, 1999). In all analyses, higher scores reflect greater inaccuracy.

There was a significant main effect of condition on overall empathic accuracy, but in a direction opposite of my prediction. Support-providers in the transparency condition were more empathically accurate ($M_{transparency}$ = .92, SE = .06) than participants in the control condition ($M_{control}$ = 1.47, SE = .06), $F(2, 63) = 6.69$, p = .012.

Hypothesis 6: Responsiveness toward partner. There were no differences in support-providers' self-reported responsive behavior by condition [$M_{transparency}$ = 5.99, SD = .75 versus $M_{control}$ = 5.79, SD = .88; $t(64) = -1.00$, p = .319.].

Supplementary analyses: Support-providers.

Partner expressivity. Differences by support-providers' perceptions of their partner's expressivity were not significant, although the trend was in the opposite direction of my predictions. Support-providers thought their partners were somewhat *more* expressive in the transparency condition (M = 5.39, SD = 0.98) compared to the control condition (M = 5.04, SD = 1.14), $t(64) = -1.33$, p = .190.

Support-providers' ratings of their partner's *descriptive* self-disclosure did not differ by condition [$M_{transparency}$ = 5.54, SD = 1.54 versus $M_{control}$ = 5.68, SD = 1.42; $t(64) = .37$, p = .715]. However, ratings of their partner's *evaluative* self-disclosure were marginally different by condition [$M_{transparency}$ = 6.26, SD = .85 versus $M_{control}$ = 5.77, SD = 1.23; $t(64) = -1.87$, p = .066]. Consistent with the difference in support-providers' perceptions of overall

expressivity, they thought support-providers disclosed marginally more thoughts and feelings (but not descriptive information about the lab tasks) in the transparency condition.

Partner expressive suppression. At the same time, support-providers thought their partners were trying to suppress their thoughts and feelings somewhat more in the control condition ($M = 2.03$, $SD = .99$) compared to the transparency condition ($M = 1.73$, $SD = .94$), although this difference did not reach significance, $t(64) = 1.28$, $p = .207$. It is worth noting that this pattern is in the opposite direction of the support-seekers' assessment of their own expressive suppression.

Empathic accuracy about positive and negative feelings. There were no differences by condition on support-providers empathic accuracy about *positive* feelings [$M_{transparency} = .90$, $SE = .12$ versus $M_{control} = 1.06$, $SE = .12$; $F(2, 63) = .89$, $p = .349$]. With respect to empathic accuracy of negative feelings, the pattern was in the opposite direction of my predictions: support-providers were marginally *more* accurate at identifying the degree to their partner's negative feelings in the transparency condition ($M_{transparency} = .42$, $SE = .08$) compared to the control condition ($M_{control} = .61$, $SE = .08$), $F(2, 63) = 2.99$, $p = .089$.

Testing the conceptual model. In the next phase of my analyses, I was ready to turn to tests of the full conceptual model (presented in Figure 2). However, because there were no condition differences on the process variables in the model, it did not make sense to test the full model when I knew that the transparency condition was not moving around the primary dependent variables of interest. Instead, I explored the hypothesized relationships between support-seeker disclosure and support-provider empathic accuracy and responsiveness. Thus, instead of running the proposed serial mediation model, I conducted a series of regression analyses to examine each section of the conceptual model in piecemeal. I first report analyses

of the various support-seeker *objective* expressivity variables (word count, affective language use, observer ratings) predicting the three support-provider empathic accuracy variables (see Tables 6, 7, and 8). Then, I moved on to the latter half of the model. In separate analyses, I used the three empathic accuracy variables to predict the two measures of support-provider responsiveness (as rated by the support-provider and the support-seeker, separately, see Tables 9 and 10).

Did support-seeker expressivity predict support-provider empathic accuracy? To test the effect of support-seeker expressivity on support-provider empathic accuracy, I used five word count variables (word count, overall affective language, positive affect words, negative affect words, words about the frustrating tasks) and three observer ratings (overall expressivity, positive expressivity and negative expressivity) as predictors in separate regression analyses. I regressed each of the three *absolute difference scores* of empathic accuracy (overall empathic accuracy, empathic accuracy about positive emotions, and empathic accuracy about negative emotions) onto the eight objective expressivity measures, yielding 24 regression analyses. Analyses that used word counts as predictor variables controlled for overall word count in the transcript. Because the dependent variables were always difference scores, all analyses controlled for the support-seekers' actual post-interaction mood.

The results of these analyses are presented in Tables 6 and 7. Only two regression analyses yielded interesting findings worth highlighting here. Word count marginally predicted overall empathic accuracy, $b = -.001$, $SE_b < .001$, 95% CI [-.002, <.001], $\beta = -.23$, $sr^2 = .05$, $t = -1.90$, $p = .062$. Across conditions, support-seekers who used more words when speaking had partners who were marginally *more* accurate at inferring their feelings. This

pattern held up when predicting empathic accuracy about positive emotions, although the effect was weaker. Support-seekers who used more words had partners who were marginally *more* accurate at inferring their positively-valenced feelings, b = -.001, SE_b < .001, 95% CI [-.003, <.001], β = -.22, sr^2 = .05, t = -1.62, p = .112. No other effects of any of the other predictors on the empathic accuracy measures reached significance.

Did support-providers' empathic accuracy predict their responsiveness? To examine links between empathic accuracy and responsiveness, I used the residuals of the difference between support-providers' inference and support-seekers' actual post-interaction feelings, partialling out the support-seekers' post-interaction feelings. Using these variables as predictors, I ran six regression analyses. In three analyses, I predicted support-providers' own responsive behavior ratings separately from each of the three empathic accuracy variables. In another three analyses, I also predicted support-seekers' ratings of perceived responsiveness from each of the three empathic accuracy variables. Because support-seekers' relationship satisfaction was significantly correlated with both the support-providers' responsiveness ratings (r = .44, p < .001) and their own perceptions of responsiveness (r = .49, p < .001), I controlled for relationship satisfaction in these analyses.

The beta coefficients from these analyses are presented in Table 9 (support-provider responsiveness toward partner) and Table 10 (support-seekers' perceptions of responsiveness). To summarize here, none of the empathic accuracy variables predicted support-providers' ratings of their own responsiveness (all p's > .58) nor support-seekers' perceptions of responsiveness (all p's > .46).

Discussion

The goal of Study 2 was to test the hypothesis that feeling transparent would have both downstream *intrapersonal* consequences on expressivity as well as *interpersonal* consequences on partner responses to one's disclosures. Specifically, I predicted that when partners (*support-seekers*) felt more transparent, they would be cognitively less able, or potentially less motivated, to express their inner state to their partner. I proposed that this decrement in expressiveness would then undermine their partner's ability to accurately understand their thoughts and feelings and provide optimal support. I interpret these findings with caution as I wait for more participants and more power to detect effects, but it appears that I generally do not find strong support for my predictions in this study.

Assuming the manipulation check is a viable check of perceived transparency, I found some very preliminary evidence that participants felt more transparent when they took their partner's perspective. In particular, trends suggest that participants in the transparency condition felt their *negative* feelings were somewhat more transparent ($p = .18$). If this pattern persists and becomes significant in the full sample, it would replicate past research (Vorauer & Sucharnya, 2013) showing that taking a partner's perspective increases felt transparency, and in particular felt transparency of negative emotions, in social interactions.

When I examined mean differences by condition on the objective expressivity variables, I found some (weak but trending) evidence in support of my prediction. Participants in the transparency condition did not speak less overall, but they did express somewhat less negativity (i.e., they used significantly fewer negative affect words, controlling for word count, $p = .053$). Consistent with this finding, it is worth noting that participants in the transparency condition also reported *suppressing* their emotions somewhat more in the transparency condition (although this difference did not reach significance, $p =$

.223). Otherwise, there were no significant differences on the other self-report measures of expressivity, perceived responsiveness, or any other measures of objective expressivity.

One unanticipated finding from this study was that the transparency condition created less objective expressivity on one variable, but not uniformly less expressivity on the others. I did not detect any differences by condition in overall word count, positive affect word use, discussion of the frustrating lab tasks, nor observer ratings of expressivity. However, as noted above, participants used significantly fewer negative affect words ($p = .053$) when they were in the transparency condition. Upon further reflection, it makes sense that the difference in perceived transparency was significant for negative feelings but not the others. After all, my study was designed to induce frustration in support-seekers, with the hopes that they would then express this frustration. Thus, the expression of negative feeling is arguably the most relevant dimension of expressivity for testing my predictions. It is possible that there is no single measure of "expressivity" that will change as a function of taking a partner's perspective, and that the emotions expressed are entirely dependent on context or motivation. There are many ways to express one's inner state, be it using descriptive self-disclosure, evaluative self-disclosure, or other modes of communication (e.g., making direct versus indirect references to one's thoughts and feelings, expressing oneself using a happy or more negative tone). Since support-seekers were taking their partner's perspective, I wonder if they felt that expressions of negativity would turn their partner away from the discussion or disrupt their partner's motivation to understand them and be engaged in the interaction. This possibility would be consistent with past work in my lab showing that support-providers' empathic accuracy is associated with marginally less responsive behavior when people do not feel much empathic concern. Perhaps support-seekers knew that their partner would be less

motivated to support them (e.g., listen carefully, offer validation of their frustration about the lab tasks) if they expressed too much negativity.

The manipulation created some interesting differences among the support-providers, suggesting that on the whole, their perceptions of their partner's expressivity did not map onto support-seekers' actual or perceived expressivity. This discrepancy is consistent with prior research on transparency in interpersonal situations (e.g., Cameron & Robinson, 2010; Vorauer & Sucharnya, 2013), but the discrepancy was not in the direction I predicted. Support-providers whose partners were in the transparency condition thought their partner was somewhat *more* expressive ($p = .066$) and suppressed their emotions somewhat less ($p = .207$). While I did not advance hypotheses regarding the degree to which support-providers would *think* their partner was expressive on self-report measures, I was hoping to see that support-providers would be less empathically accurate when their partner was less expressive. Contrary to these predictions, support-providers were significantly more empathically accurate when their partner was in the transparency condition. It is interesting to see that the manipulation had any downstream interpersonal consequences on the support-provider's empathic accuracy, given that they did not receive a manipulation themselves. But if support-providers were *more* accurate at inferring the magnitude of their partner's feelings in the transparency condition (and thought their partner was more expressive), what information were they drawing on to make these inferences? Was their partner behaving in such a way that enabled support-providers to be more accurate? If so, which behaviors would be more helpful beyond verbal expressiveness, as measured in this study? Recall that my support-seekers were not any more expressive in terms of overall word count, and, if anything, they expressed less negativity. In future analyses or follow-up studies, it would be

worth learning more about the information that support-providers used to make their inferences.

One clear strength of this study is that I have the ability to examine other discrepancies between support-seekers' and support-providers' perception of the same social interaction. Research on transparency (and in particular, on the effect of perspective-taking on perceived transparency) suggests that these discrepancies are the route by which perceived transparency exerts negative effects on interpersonal relating. For example, Vorauer and Sucharnya (2013) found that imagine-other perspective-taking undermined relationship satisfaction via a divergence in partners' perspectives of the interaction. They found that transparency made the *partner*, not the actor who received the manipulation, report greater enjoyment of the interaction than the actor reported. Although I did not set out to replicate their particular process model, I do find support of the general idea that the transparency condition creates a difference in what support-seekers' expressed and what support-providers' felt and perceived. My support-seekers thought they were more transparent despite expressing fewer negative affect words in the transparency condition, and their partners felt more positive after the interaction and were better able to infer their partner's feelings. And, with respect to perceptions of responsiveness, the correlation between support-seekers' perceived responsiveness and support-providers' self-reported responsiveness was only moderate in both conditions (r's = .35, $p < .001$). I suspect that the support-seekers' expressiveness and the support-providers' responsiveness would be best studied by modeling the convergence of three perspectives (support-seekers, support-providers, and objective observers), to gain a more reliable and valid assessment of the support-providers' responsive

behavior. Thus, in future work, I will ask observers to rate the degree and quality of support-providers' responsive behavior.

To test the full conceptual model, I collapsed across condition and conducted a series of regression analyses to test each proposed link (support-seekers' expressivity predicting support-providers' empathic accuracy, and support-providers' empathic accuracy predicting both partner's perceptions of the support-providers' responsiveness). In these analyses, I found that support-seekers' word count did matter in shaping support-providers' empathic accuracy: when support-seekers spoke more words overall, their partner was marginally more accurate at inferring the magnitude of the support-seekers' thoughts and feelings (i.e., the difference between support-providers' inferences and support-seekers' actual mood was smaller). This pattern is promising because it supports prior research and theorizing (e.g., Ickes et al., 1990) that the support-seekers' expressivity (and not merely their beliefs about their own expressivity) should enable support-providers to more accurately understand them. However, the various measures of support-providers' empathic accuracy did not predict their self-reported responsiveness nor the support-seekers' reports of their responsiveness.

It is worth considering why the findings of Study 2 are so distinct from those of Study 1. It is unclear to me which of the two studies offers the "correct" story. Recall that, in Study 1, the transparency condition created significantly more expressivity on a number of self-report and objective expressivity variables, which was opposite of my prediction. In Study 2, I find some trends that look more consistent with my predictions. Although I did not see reliable differences in most key measures of objective expressivity (word count, observer ratings of expressivity), I did see that perspective-taking created fewer expressions of negative affect. So, why do the findings look so much different from Study 1 to Study 2? As

previously mentioned, I suspect that the process of taking a partner's perspective (and feeling transparent) has different implications for self-disclosure during social interactions rather than self-disclosure in a written message. Perhaps participants in Study 1 were more motivated to disclose their thoughts and feelings in a way that enabled their partner to better understand them, via self-disclosure in an email, because the very nature of the email disclosure limits support-seekers' ability to fully express themselves. It is also worth noting that the writing task built in an opportunity for participants to edit their disclosures and be more mindful of what they were expressing and how they were doing so. Further, I explicitly asked participants in Study 1 to write about a personal stressor, which may have removed some variability in whether or not they would have chosen to disclose the stressor to begin with. In contrast, in Study 2, I did not require support-seekers to disclose any particular topic; I reunited them with their partner and observed their discussion as it progressed naturally. In the context of a live social interaction, I suspect I had a better chance of detecting the proposed relationships between transparency, expression, and support-provider responses. It is in this context that people are probably more likely to feel transparent to begin with, and the consequences on expression should be both easier to detect and all the more likely when another person is actually participating in the discussion. I am hopeful that the trends in this study will become significant when I analyze the full sample.

Moving forward, I am considering a number of future analyses that may shed light on why I failed to find support for my conceptual model. For example, I need to take a deeper look at the reasons why support-providers' empathic accuracy was unrelated to their responsive behavior. It is possible that I will replicate my own research showing that the link between empathic accuracy and responsiveness is fully conditional on the degree to which

support-providers also feel empathic concern for their partner (Winczewski, Bowen, & Collins, 2016). Fortunately, I will have a number of ways to examine empathic accuracy in the full sample; I could examine within-couple links between actual feelings and inferences using multi-level modeling (e.g., Zaki et al., 2008) or I could use the traditional operationalization of empathic accuracy by using data I obtained from the video review procedure (Ickes, Robertson, Tooke, & Teng, 1986). That is, I could take the support-seekers' own thoughts and feelings they reported while watching the video-recording of their interaction and compare them against the support-providers inferences of each of those thoughts and feelings. This conceptualization of empathic accuracy would allow me to broaden my analysis of empathic accuracy beyond the degree of discrepancy between the magnitude support-seekers' actual feelings and support-providers' inferences, as I operationalized empathic accuracy in this study. Perhaps transparency makes people think that their thoughts (separate from the magnitude of their feelings) are also easily readable, which could itself create a downward spiral of miscommunication and less perceived responsiveness. Of course, the measure of empathic accuracy that I am obtaining from the video review procedure is not free of its own methodological limitations – but I wonder if I am missing an important part of the story if I am not yet able to examine accuracy about support-seekers' more substantive thoughts and feelings as they occurred during the interaction.

General Discussion

The overarching goal of my dissertation was to examine a cognitive bias that may disrupt support-seeking behavior. I focused on *perceived transparency*, or the belief that one's thoughts and feelings are obvious to others. The majority of studies on perceived

transparency were conducted in the context of feeling transparent to strangers, and they consistently show that feeling transparent has negative consequences. For example, people experience negative adverse interpersonal outcomes when they feel transparent to outgroup members (Vorauer, Martens, & Sasaki, 2009), people in an audience (Savitsky & Gilovich, 2003), or a new romantic interest (Vorauer et al., 2003). My study was one of the few to extend these processes to the close relationships domain, wherein I could examine intrapersonal and interpersonal effects of feeling transparent. In Study 1, I attempted to manipulate perceived transparency and gave participants an opportunity to disclose a stressor to their partner via email. I tested the hypothesis that feeling transparent leads to negative outcomes because it undermines expressiveness, or the quality with which people (in this case, *support-seekers*) reveal their true thoughts and feelings. In Study 2, I examined the downstream effects of transparency and expressiveness in an experimental study of romantic couples. I hypothesized that support-seekers' felt transparency and diminished expressivity would have interpersonal consequences, such that partners (*support-providers*) would be less able to accurately infer their partner's thoughts and feelings and therefore less able to provide optimal support in response to the support-seekers' disclosure. Across these two studies, I did not find evidence that the manipulation created more perceived transparency (although there was a promising trend in Study 2). As a result, I feel that I was unable to adequately test my hypotheses.

It is important to consider why the manipulation failed to create perceived transparency. The manipulation was based off of a recent study (Vorauer & Sucharnya, 2013), which found that the process of imagining a partner's perspective ironically created *more* self-focus and a greater degree of egocentric bias in romantic couples working on a

problem-solving activity. Theoretically, imagine-other perspective-taking is thought to make people more fixed on the listener's evaluation of them, such that people exaggerate the degree to which others have accurate insight into their own internal state. By focusing on another person's perspective, they instead become more focused on the other person's perspective of the *self*, leading to a host of negative interpersonal outcomes such as outgroup derogation, decrements in state relationship satisfaction, and anxiety and embarrassment.

After conducting two studies using this manipulation, I do not believe the manipulation had the intended effect in creating more perceived transparency. In Study 1, the manipulation made people marginally *less* transparent and at the same time *more* expressive on a number of self-reported and objective expressivity measures. In Study 2, there was some movement in the predicted direction; namely, trends suggest that support-seekers who took their partner's perspective felt somewhat more transparent and they expressed less negativity. Unfortunately, the effects were weak and most were not significant. I admit I had a lot of difficulty finding a reliable manipulation of perceived transparency. In pilot testing, I tried four different manipulations. The only one that yielded any effects was the Vorauer and Sucharnya (2013) perspective-taking manipulation. However, I knew that the manipulation was somewhat risky, because it did not uniformly create perceived transparency across contexts tested in the pilot study; it only created marginally more perceived transparency after participants wrote about a recent treasured memory, but not after writing about a personal stressor (which was the focus of my dissertation studies). At the same time, I felt that this manipulation was the best option given the results of several pilot studies, given that it had been successful in prior research, and given my time constraints. In future studies, I plan to explore additional methods of creating transparency in the laboratory.

Another methodological limitation of the manipulation is that the manipulation check, or the count of the number of emotions that were transparent to the partner, was assessed *after* the writing task (Study 1) and after their interaction (Study 2). It is possible that people simply felt more transparent because they were reflecting back on what they had actually expressed in their messages or their interaction. Consistent with this idea, participants' perceived transparency was correlated with their actual mood ratings following the writing task in Study 1 and after the social interaction in Study 2. If people were feeling more transparent *after* expressing emotions to their partner, regardless of condition, I have no way of knowing if the manipulation itself actually created more perceived transparency. It is entirely possible that participants based their ratings of perceived transparency on their own expressivity, using their own behavior (i.e., their written disclosure or their expressivity in the interaction with their partner) as evidence that they were transparent. In this way, it would not be unreasonable to argue that the transparency manipulation check is simply another measure of the support-seeker's perception of his or her own expressivity – people in either condition might feel more transparent if they were actually more expressive. This particular methodological limitation did not even occur to me until I had started running Study 2, when I was supervising an undergraduate who was testing other hypotheses in these data. The original study that developed this paradigm also suffered from this same issue, in that they measured perceived transparency *after* a social interaction took place. Vorauer and Sucharnya (2013) found that imagine-other instructions increased transparency, which could be a clue that participants in the imagine-other condition were more expressive and thus felt more transparent. A better manipulation check would be one that comes immediately after the manipulation but before the writing or the interaction. Of course, on the other hand, it

might seem odd to participants if I were to measure these perceptions immediately after delivering special perspective-taking instructions; participants may become more explicitly aware that the perspective-taking instructions were designed to play some critical role in testing some hypothesis. It would be especially difficult to measure perceived transparency after delivering the perspective-taking instructions in Study 2, because experimenters delivered the perspective-taking instructions immediately before the interaction. It would be strange to deliver these three sentences and then ask participants to rate the extent to which they felt readable. Thus, in future research, it will be important to develop alternative methods for detecting disclosers psychological sense of transparency prior to given them a disclosure opportunity.

Although I have misgivings about the manipulation used in the current studies, it is difficult to know how best to effectively manipulate transparency in future studies. I tried a number of strategies in the pilot studies (see Appendix A). Specifically, in addition to the perspective-taking manipulation, (1) I gave people false feedback that they were transparent, (2) I wrote a questionnaire to lead people to feel they are transparent, and (3) I wrote a mock New York Times article describing a common cognitive bias (the "illusion of transparency") that makes people underestimate how much their thoughts and feelings are obvious to others. None of these manipulations created higher levels of perceived transparency. I had also considered manipulating transparency via increasing *self-awareness*, as in the classic objective self-awareness studies (e.g., Wicklund & Duval, 1971), where researchers covertly manipulated self-awareness by placing a mirror or a video camera in front of participants while they completed questionnaires. I did not go this route because I am not sure that self-awareness per se would be conceptually the same as increasing the illusion of transparency,

even if self-awareness and transparency are similar because they both deal with self-focus. Further, Stephenson and Wicklund (1984) found that self-focus in one person acts as a contagion in interpersonal situations and creates more self-focus in another person. If these effects were to generalize to my couples, the implication would be that self-focused support-seekers, in the absence of trying to take their partner's perspective, might impair the support-providers' ability to attend to them and be responsive. That said, self-awareness might serve as an alternative, or even more rudimentary, cognitive bias through which peoples' attempts to express themselves are disrupted by being less able to focus outward and effectively express one's needs. Feeling transparent, alternatively, occurs when peoples' attempts to take another's perspective makes them instead think about how they *themselves* appear to the other person. In these studies, I was less interested in self-focus per se and more on the implication of thinking one's thoughts are obvious when they are not.

If I assume the manipulation created transparency and I simply did not adequately measure it with my manipulation checks, I would conclude that my model and hypothesis were incorrect and that transparency is doing something else altogether. Alternatively, there might be other explanatory processes in play, apart from transparency, that are exerting effects on expressiveness. In a review chapter, Vorauer (2012) argues that two key variables should modulate whether imagine-other perspective-taking creates positive versus negative outcomes. First, perspective-taking is likely to promote positive outcomes (prosocial behavior, smoother interactions) when the potential for evaluation by the other person is relatively low. But perspective-taking is said to promote negative interaction outcomes when the potential for evaluation by the target is high and thus leads people to reflect their attention back onto the self. It is possible that taking a close other's perspective does not first create

transparency but instead has effects on outcomes because it more directly motivates people to be more expressive. In the context of close relationships, romantic partners have considerable prior knowledge about the self, making the potential for evaluation increasingly high as relationships become more intimate (Vorauer & Cameron, 2002; Vorauer & Sucharnya, 2013). But in my studies, exploratory analyses of self-other overlap show quite different effects on transparency and expressivity. In Study 1, for example, I found evidence in the opposite pattern of my prediction, namely that the transparency condition increased expressivity in an email disclosure rather than decreasing it. I suspected that this increase may be due to perspective-taking increasing the degree of cognitive self-other overlap between support-seekers and their partners, so I added a measure of self-other overlap after the social interaction in Study 2. In exploratory analyses, I learned that perspective-taking did not create more self-other merging (i.e., there was no main effect of condition on self-other overlap). But correlational analyses suggest that, in the transparency condition only, there was a significant, positive link between self-other merging and expressivity (both self-reported expressivity and objective expressivity), controlling for self-other overlap assessed in the background questionnaire. In other words, participants who were in the transparency condition and who also felt more merged with their partner after the interaction also felt significantly more transparent and were more expressive. Thus, I wonder if the perspective-taking instructions could still be creating a *cognitive* bias that may disrupt expressivity, but that self-other merging undoes this effect and enables (or motivates) support-seekers to express themselves in a way that would help their partner understand them. I am interested in disentangling the conditions in which perspective-taking prompts *more* versus *less* expressiveness, especially given the critical role of expressivity in support-seeking behavior.

Support-seeking is undoubtedly a context in which the potential for evaluation is high, but participants may be all the more motivated to convey themselves in a way their partner would best understand them if they are in close, satisfying relationships and feel safe revealing their vulnerabilities.

Returning to the overarching goal of my studies, I hope my data will reveal critical processes through which support-seekers ask for support. Few studies examine actual support-seeking behavior in social interactions, and I hope to learn something valuable about the ways that support-seekers shape the quality of support they receive. As mentioned above, my future analyses could hone in on other ways that support-seekers were expressing themselves. For example, I want to explore why the perspective-taking manipulation helped support-providers become *more* empathically accurate in Study 2. This finding is especially interesting to me given that support-seekers were not any more verbally expressive and were not rated as more expressive. If anything, they used fewer negative affect words in the transparency condition. If not the support-seekers' verbal expression, what information were support-providers using to make these relatively accurate inferences about their partner? If support-seekers' *verbal* expressivity did not predict their partner's empathic accuracy, I suspect their *nonverbal* behavior must be playing a greater role in expression than I previously anticipated. Some preliminary evidence from one key study on the role of target expressivity in perceivers' empathic accuracy supports this assertion. Zaki, Bolger, and Ochsner (2009) tested whether different forms of affective cues, either visual (behavioral) cues or verbal cues to a target's feelings about positive and negative events, helped perceivers accurately infer the target's feelings. The researchers varied whether perceivers were able to view the video recording (thereby giving them access to the target's visual

affective cues) or whether they were able to listen to the audio recording (giving them access to verbal cues only). When perceivers were trying to understand *positive* feelings, targets' trait expressivity marginally predicted perceiver accuracy in the sound-only condition. When perceivers were trying to understand *negative* feelings, target expressivity predicted more perceiver empathic accuracy in the visual-only condition. This study suggests that support-seekers are more expressive via some channels (e.g., visual versus auditory) depending on what they are disclosing, or it could be that support-providers draw on different sources of information to infer positive and negative feelings. If targets' visual affective cues enable perceivers to better understand them, then it is possible that support-seekers were behaving in ways that helped support-providers infer the magnitude of their feelings. This possibility presents another reason to code the videotapes for nonverbal support-seeking behavior, in addition to coding for the support-providers' responsive behavior.

In closing, research on support-seeking behavior and the role of the discloser is under-studied in the social support and close relationships literature. People have a need to feel understood by close others, but the complexities of cognition and motivation in support-seeking interactions may cause people to overlook the ways in which they express thoughts and feelings. I attempted to highlight the effect of one such complexity, the illusion of transparency, in disclosing one's thoughts and feelings. In future studies, I hope to examine other circumstances or processes that may prevent people from eliciting the support they need.

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Table 1

Study 1 Bivariate Correlations and Descriptive Statistics for Primary Dependent Variables.

	1	2	3	4	5	6	7	8	Mean	*SD*
1. Condition (0=Control, 1=Transparency)	-								0.50	0.50
2. Gender (0=male, 1=female)	.06	-							0.62	0.49
3. Overall perceived transparency	-.14	-.06	-						7.34	2.50
Self-reported expressivity										
4. Self-reported expressivity	.10	.09	.07	-					5.43	0.93
5. Partner ability to infer emotions	.09	.07	.16*	.72**	-				5.75	0.97
Objective expressivity										
6. Message length (standardized)	.22*	.03	.05	.40**	.20*	-			0.00	1.00
7. Overall affective language use	.06	.06	.22*	-.13†	-.08	-.08	-		7.36	3.62
8. Observer ratings of expressivity	.28**	-.06	-.03	.49**	.25**	.78**	-.21*	-	4.20	1.26

Table 2

Study 1 Dependent Measures (Means and SDs) by Condition.

	M_{trans} (*SD*)	$M_{control}$ (*SD*)	*t*(160)	*p*
Manipulation checks				
Focus on partner's evaluation	4.38 (1.57)	3.63 (1.81)	-2.83	.005
Perceived transparency	6.99 (2.52)	7.69 (2.43)	1.81	.073
Perceived transp. (pos. emotions)	3.20 (2.01)	3.95 (1.90)	2.45	.015
Perceived transp. (neg. emotions)	3.16 (1.36)	3.16 (1.39)	< .001	1.00
Post-writing positive emotions	2.58 (0.86)	2.89 (0.88)	2.19	.030
Post-writing negative emotions	2.53 (1.07)	2.14 (1.08)	-2.20	.029
Self-reports of expressivity				
Self-reported expressivity	5.53 (0.10)	5.34 (0.10)	*F*=1.63	.203
Evaluative self-disclosure	5.14 (0.16)	4.71 (0.16)	*F*=3.65	.058
Descriptive self-disclosure	4.79 (0.18)	4.62 (0.18)	*F*=0.46	.400
Partner ability to infer emotions	5.84 (0.11)	5.66 (0.11)	*F*=1.44	.232
Objective expressivity				
Message length	0.21 (1.13)	-0.21 (0.68)	-2.90	.004
Overall affective language use (LIWC)	8.56 (0.44)	7.83 (0.44)	*F*=1.42	.236
Positive affect words (LIWC)	4.32 (0.31)	4.18 (0.31)	*F*=0.10	.757
Negative affect words (LIWC)	4.24 (0.26)	3.64 (0.26)	*F*=2.56	.111
Observer ratings of expressivity	4.55 (1.30)	3.85 (1.11)	-3.63	< .001

Note. Self-reported expressivity reflects estimated marginal means obtained from ANCOVAS, controlling for chronic expressivity. Objective expressivity word counts (LIWC) reflect estimated mean frequencies controlling for word count. *F* tests of these mean differences appear in the *t* column, with standard errors in parentheses.

Table 3

Study 2 Bivariate Correlations and Descriptive Statistics for Primary Study Variables (Support-Seekers).

	1	2	3	4	5	6	7	8	9	Mean	*SD*
1. Condition (0=C, 1=T)	-									0.53	0.50
2. Gender (0=M 1=F)	.03	-								0.50	0.49
3. Perceived transparency	.17	.13	-							11.24	4.31
Self-report variables											
4. Self-reported expressivity	-.13	.02	.30*	-						5.29	1.24
5. Expressive suppression	.20	-.06	-.24*	-.49**	-					1.78	0.93
6. Perceived responsiveness	.11	.05	.48**	.46**	-.42*	-				5.78	1.03
Objective expressivity											
7. Word count	.01	.05	.23†	.28*	-.18	.22†	-			424.49	113.54
8. Overall affective words	-.09	-.10	.07	.31*	-.05	.08	.68**	-		26.32	11.92
Observer ratings											
9. Expressivity	-.01	.18	.07	.22†	-.27*	.10	.51**	.55*	-	2.95	1.46

Table 4

Study 2 Support-Seeker Dependent Measures (Means and SDs) by Condition.

	M_{trans} (*SD*)	$M_{control}$ (*SD*)	*t* or *F*	*df*	*p*
Manipulation checks					
Perceived transparency	11.91 (4.53)	10.48 (4.00)	*t*=-1.35	64	.181
Perceived transp. pos. feelings	5.43 (2.05)	5.16 (1.90)	*t*=-0.57	64	.586
Perceived transp. neg. feelings	6.49 (3.65)	5.32 (3.28)	*t*=-1.36	64	.180
Focus on partner's evaluation	3.55 (1.79)	2.73 (1.76)	*t*=-1.82	61	.075
Self-report measures					
Post-interaction positive mood	5.57 (0.16)	5.55 (0.17)	*F*<0.01	2, 63	.962
Post-interaction negative mood	1.51 (0.14)	1.77 (0.15)	*F*=1.57	2, 63	.215
Self-reported expressivity	5.17 (0.22)	5.32 (0.24)	*F*=0.18	2, 53	.671
Evaluative self-disclosure	5.35 (0.34)	5.32 (0.37)	*F*<0.01	2, 54	.949
Descriptive self-disclosure	5.61 (0.28)	5.73 (0.31)	*F*=0.09	2, 54	.769
Expressive suppression	1.96 (1.16)	1.66 (0.18)	*F*=1.52	2, 54	.223
Perceived partner resp.	5.89 (1.09)	5.66 (0.97)	*t*=-0.90	64	.370
Objective expressivity (LIWC)					
Word count	425.08 (114.09)	423.72 (115.18)	*t*=-0.05	55	.964
Overall affective language use	25.37 (1.56)	27.53 (1.77)	*F*=0.84	2, 54	.363
Positive affective words	17.55 (1.12)	16.67 (1.27)	*F*=0.27	2, 54	.605
Negative affective words	7.73 (1.03)	10.79 (1.16)	*F*=3.90	2, 54	.053
Frustrating task words	10.31 (1.08)	9.59 (1.22)	*F*=0.20	2, 54	.661
Observer ratings of expressivity					
Expressivity	2.94 (1.41)	2.96 (1.56)	*t*=0.05	55	.958
Positive emotional tone	2.48 (1.17)	2.19 (0.98)	*t*=-1.02	55	.312
Negative emotional tone	2.53 (1.33)	3.08 (1.82)	*t*=1.32	55	.194

Note. Post-interaction mood reflects estimated marginal means obtained from ANCOVAS, controlling for pre-interaction mood. Self-reported expressivity reflects estimated marginal means obtained from ANCOVAS, controlling for chronic expressivity. Objective expressivity variables (mean word counts) reflect estimated mean frequencies from ANCOVAS, controlling for word count. *F* tests of these mean differences appear in the *t* column, with standard errors in parentheses.

Table 5

Study 2 Support-Provider Dependent Measures (Means and SDs) by Condition.

	M_{transp} (*SD*)	$M_{control}$ (*SD*)	*t* or *F*	*df*	*p*
Post-interaction positive mood	5.35 (0.16)	5.18 (0.17)	*F*=0.56	2, 63	.455
Post-interaction negative mood	1.21 (0.13)	1.47 (0.14)	*F*=1.82	2, 63	.182
Partner expressivity	5.39 (0.98)	5.04 (1.14)	*t*=-1.33	64	.190
Partner expressive suppression	1.73 (0.94)	2.03 (0.99)	*t*=1.28	64	.207
Partner evaluative disclosure	6.26 (0.85)	5.77 (1.23)	*t*=-1.87	64	.066
Partner descriptive disclosure	5.54 (1.54)	5.68 (1.42)	*t*=0.37	64	.715
Empathic accuracy (overall)	0.92 (0.06)	1.47 (0.06)	*F*=6.69	2, 63	.012
Empathic accuracy (pos. emo.)	1.25 (0.11)	1.37 (0.11)	*F*=0.63	2, 63	.430
Empathic accuracy (neg. emo.)	0.38 (0.07)	0.73 (0.07)	*F*=13.29	2, 63	<.001
Responsiveness toward partner	5.99 (0.75)	5.79 (0.88)	*t*=-1.00	63	.319

Note. Post-interaction mood reflects estimated marginal means obtained from ANCOVAS, controlling for pre-interaction mood. Means of empathic accuracy reflect estimated marginal means of the absolute difference between support-seeker actual emotions and support-provider inferences, after partialling out the support-seekers' actual post-interaction emotions. Standard errors are in parentheses. *F* tests for these ANCOVAS appear in the *t* column.

Table 6

Study 2 Support-Seekers' Expressivity Predicting Support-Providers' Overall Empathic Accuracy.

	b	*SE*	*β*	sr^2	*t*	*p*
Objective expressivity (LIWC)						
Word count	-.001	<.001	-.23	.05	-1.90	.062
Overall affective language use*	.004	.006	.10	.005	0.62	.539
Positive affective words*	.003	.008	.06	.003	0.38	.703
Negative affective words*	.004	.009	.07	.004	0.50	.622
Frustrating task words*	-.004	.01	-.08	.004	0.53	.598
Observer ratings of expressivity						
Expressivity	0.02	.03	-.06	.003	-0.47	.639
Positive emotional tone	-.03	.05	-.09	.007	-0.70	.489
Negative emotional tone	-.005	.03	-.02	<.001	-0.14	.886

Note. Each row represents a separate regression analysis. Empathic accuracy represents the absolute value of the difference between support-seeker actual emotions and support-provider inferences – lower scores reflect *greater* accuracy. All analyses control for support-seekers' post-interaction mood. *Analyses of these word counts control for overall word count.

Table 7

Study 2 Support-Seekers' Expressivity Predicting Support-Providers' Empathic Accuracy of Positive Emotions.

	b	*SE*	*β*	sr^2	*t*	*p*
Objective expressivity (LIWC)						
Word count	-.001	.001	-.22	.05	-1.61	.112
Overall affective language use*	-.006	.01	-.11	.001	-0.60	.550
Positive affective words*	-.01	.01	-.17	.02	-1.08	.284
Negative affective words*	-.004	.02	.05	.001	0.27	.791
Frustrating task words*	.001	.02	-.01	<.001	-0.07	.946
Observer ratings of expressivity						
Expressivity	.004	.06	.01	<.001	0.06	.950
Positive emotional tone	-.05	.09	-.09	.01	-0.63	.539
Negative emotional tone	.02	.06	.06	.003	0.39	.698

Note. Each row represents a separate regression analysis. Empathic accuracy represents the absolute value of the difference between support-seeker actual positive emotions and support-provider inferences – lower scores reflect *greater* accuracy. All analyses control for support-seekers' post-interaction mood. *Analyses of these word counts control for overall word count.

Table 8

Study 2 Support-Seekers' Expressivity Predicting Support-Providers' Empathic Accuracy of Negative Emotions.

	b	*SE*	*β*	sr^2	*t*	*p*
Objective expressivity (LIWC)						
Word count	<.001	.001	-.04	.001	-0.33	.740
Overall affective language use*	.001	.007	.03	<.001	0.17	.866
Positive affective words*	.004	.01	.05	.002	0.35	.726
Negative affective words*	<.001	.01	-.002	<.001	-0.02	.988
Frustrating task words*	-.01	.01	-.16	.02	-1.20	.235
Observer ratings of expressivity						
Expressivity	-.003	.04	-.01	<.001	-0.07	.949
Positive emotional tone	-.02	.06	-.04	.002	-0.35	.728
Negative emotional tone	.02	.04	.04	.002	0.36	.718

Note. Each row represents a separate regression analysis. Empathic accuracy represents the absolute value of the difference between support-seeker actual negative emotions and support-provider inferences – lower scores reflect *greater* accuracy. All analyses control for support-seekers' post-interaction mood. *Analyses of these word counts control for overall word count.

Table 9

Study 2 Support-Providers' Empathic Accuracy Predicting Support-Providers' Responsiveness.

Predictor variable	*b*	*SE*	*β*	sr^2	*t*	*p*
Overall empathic accuracy	.004	.27	.002	<.001	0.02	.988
Empathic accuracy (positive emotions)	-.08	.15	-.07	.004	-0.56	.581
Empathic accuracy (negative emotions)	-.007	.21	-.004	<.001	-0.03	.971

Note. Each row represents a separate regression analysis. All analyses controlled for support-seekers' enduring relationship satisfaction.

Table 10

Study 2 Support-Providers' Empathic Accuracy Predicting Support-Seekers' Perceived Responsiveness.

Predictor variable	*b*	*SE*	*β*	sr^2	*t*	*p*
Overall empathic accuracy	.22	.29	.09	.003	0.74	.461
Empathic accuracy (positive emotions)	.04	.16	.03	<.001	0.22	.827
Empathic accuracy (negative emotions)	<.001	.24	<.001	<.001	<0.01	.998

Note. Each row represents a separate regression analysis. All analyses controlled for support-seekers' enduring relationship satisfaction.

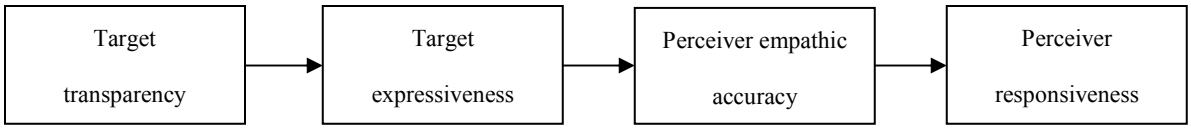

Figure 1. Theoretical model of the dyadic effect of target transparency on perceiver responsiveness.

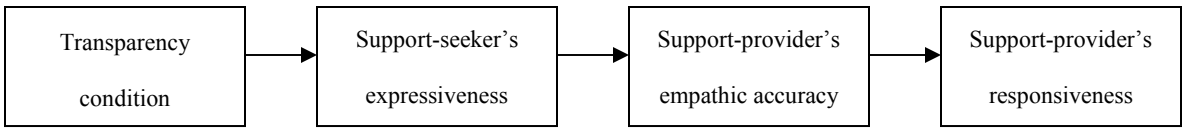

Figure 2. Conceptual model tested in Study 2.

Appendix A

Summary of pilot studies

Pilot 1: False feedback

In the first pilot, I wrote two bogus questionnaires in which participants (N = 115 MTurk workers) completed one 5-item version of a "personality inventory," ostensibly designed to measure how people experience emotions. In the "readable" condition, the items on the questionnaire assessed the degree to which people feel they *sometimes* display their emotions and *sometimes* feel their thoughts are readily visible (1 = *mostly disagree* to 5 = *mostly agree*). This language was designed to encourage participants to more strongly endorse each statement, thereby creating the belief that they are more readable. Participants in this condition then received false feedback that they are the kind of person whose "readability score," or the degree to which their thoughts and feelings are highly visible to others, is *above average* (at the 72nd percentile). Participants in the "difficult to read" condition endorsed items assessing whether people *sometimes do not know* what they are thinking, again to encourage people to say "true" and subsequently feel more difficult to read. There was also a no-feedback control group that completed a similar personality inventory but did not receive information about their readability score. This manipulation did not move around perceptions of transparency.

Pilot 2: True/false questionnaire

In this second MTurk study (N = 92), I programmed two true/false questionnaires. The transparency condition endorsed ten items that were worded in such a way that they would be more likely to rate the statements as "false" and thus feel that their thoughts and feelings are more readable. For example, they rated whether it was true or false that "people

can never see what I'm feeling" or "I never let my feelings show." By leading people to answer "false" more often, I was hoping that the process of denying these statements would lead people to believe they are readable. Participants in the control condition completed a 10-item true/false questionnaire assessing their preferences for neutral stimuli such as coffee versus tea or listening to classic versus dance music. This manipulation did not move around perceptions of transparency.

Pilot 3: Perspective-taking manipulation

This third pilot study was conducted in the lab and is almost identical to the procedure in Study 1. I invited UCSB students ($N = 58$) to participate in a study about communication using various media, and I either asked them to imagine their partner's perspective or did not add additional instructions before asking them to write a letter to a *close other* about a current personal stressor. They were allowed to write to anyone they consider "close," whereas Study 1 was conducted on participants who wrote to their romantic partner (although I do not feel strongly that the recipient of the message matters, especially since we gave participants the opportunity to *nominate* a close other of their choosing). The perspective-taking instructions marginally increased perceived transparency after writing about a treasured memory ($p = .09$), but not after writing about a stressor. Because this manipulation was the only one to move around *any* measure of perceived transparency across the pilot studies, because it was also conducted in the lab in a manner most closely planned for Study 1, and because it had been validated in the only other lab study of transparency in live interactions among romantic couples (Vorauer & Sucharnya, 2013), I settled for this manipulation.

Pilot 4: Reading an article about transparency

In the fourth and final pilot study ($N = 70$ MTurk workers), I wrote and created images of two false New York Times Science articles. Participants in the transparency condition read an article called "Other people can read your mind better than you think," and it cited a study by the *National Institutes of Mental Health* suggesting that most people succumb to the *transparency bias* and believe their thoughts and feelings are more obvious to others than they actually are. Participants in the control condition read another faux article about another faux cognitive bias, *depletion bias*, where people overlook how being tired affects their working memory capacity. This manipulation did not move around perceived transparency.

Appendix B

Study 1 Perceived Transparency Manipulation Check

This section contains questions about your partner's insight into your thoughts and feelings.

For each emotion listed below, first consider (just in your own mind) how you would rate yourself on each emotion, where 1 = *not at all* to 10 = *extremely*.

Then, please indicate whether your partner has an accurate understanding of how well each of these emotions describes your emotional state right now.

Would your partner give you the same rating you gave yourself? Please click either "*Yes*," "*No*," or "*I don't know*" beside each emotion.

	No	*Yes*	*I don't know*
Interested	☐	☐	☐
Distressed	☐	☐	☐
Excited	☐	☐	☐
Upset	☐	☐	☐
Confident	☐	☐	☐
Happy	☐	☐	☐
Content	☐	☐	☐
Uneasy	☐	☐	☐
Calm	☐	☐	☐
Frustrated	☐	☐	☐

Appendix C

LIWC Positive Affect Words Dictionary

bright*	definite	flirt*	grati*
brillian*	definitely	fond	great
calm*	delectabl*	fondly	grin
care	delicate*	fondness	grinn*
cared	delicious*	forgave	grins
carefree	deligh*	forgiv*	ha
careful*	determina*	free	haha*
cares	determined	free*	handsom*
caring	devot*	freeb*	happi*
casual	digni*	freed*	happy
casually	divin*	freeing	harmless*
certain*	dynam*	freely	harmon*
challeng*	eager*	freeness	heartfelt
champ*	ease*	flexib*	heartwarm*
charit*	easie*	frees*	heaven*
charm*	easily	friend*	hero*
cheer*	easiness	fun	hilarious
cherish*	easing	funn*	hoho*
chuckl*	easy*	genero*	honest*
clever*	ecsta*	gentle	honor*
comed*	efficien*	gentler	honour*
comfort*	elegan*	gentlest	hope
commitment*	encourag*	gently	hoped
compassion*	energ*	giggl*	hopeful
compliment*	engag*	giver*	hopefully
confidence	enjoy*	giving	hopefulness
confident	entertain*	glad	hopes
confidently	enthus*	gladly	hoping
considerate	excel*	glamor*	hug
contented*	excit*	glamour*	hugg*
contentment	fab	glori*	hugs
convinc*	fabulous*	glory	humor*
cool	faith*	good	humour*
courag*	fantastic*	goodness	hurra*
create*	favor*	gorgeous*	ideal*
creati*	favour*	grace	importan*
credit*	fearless*	graced	impress*
cute*	festiv*	graceful*	improve*
cutie*	fiesta*	graces	improving
daring	fine	graci*	incentive*
darlin*	flatter*	grand	innocen*
dear*	flawless*	grande*	intell*
inspir*	nice*	gratef*	interest*

invigor*
joke*
joking
joll*
joy*
keen*
kidding
kind
kindly
kindn*
kiss*
laidback
laugh*
libert*
like
likeab*
liked
likes
liking
livel*
LMAO
LOL
love
loved
lovely
lover*
loves
loving*
loyal*
luck
lucked
lucki*
lucks
lucky
madly
magnific*
merit*
merr*
neat*
nurtur*
ok
okay
okays
oks
openminded
openness
opportun*
optimal*
optimi*
original
outgoing
painl*
palatabl*
paradise
partie*
party*
passion*
peace*
perfect*
play
played
playful*
playing
plays
pleasant*
please*
pleasing
pleasur*
popular*
positiv*
prais*
precious*
prettie*
pretty
pride
privileg*
prize*
profit*
promis*
proud*
radian*
readiness
ready
reassur*
relax*
relief
reliev*
resolv*
respect
revigor*
reward*
rich*
ROFL
romanc*
romantic*
safe*
satisf*
save
scrumptious*
secur*
sentimental*
share
shared
shares
sharing
silli*
silly
sincer*
smart*
smil*
sociab*
soulmate*
special
splend*
strength*
strong*
succeed*
success*
sunnier
sunniest
sunny
sunshin*
super
superior*
support
supported
supporting
supportive*
supports
suprem*
sure*
surpris*
sweet
sweetheart*
sweetie*
sweetly
sweetness*
sweets
talent*
tehe
tender*
terrific*
thank
thanked
thankf*
thanks
thoughtful*
thrill*
toleran*
tranquil*
treasur*
treat
triumph*
true
trueness
truer
truest
truly
trust*
truth*
useful*
valuabl*
value
valued
values
valuing
vigor*
vigour*
virtue*
virtuo*
vital*

Appendix D

LIWC Negative Affect Words Dictionary

abandon*	boring	destruct*	evil*	gross*	jerked
abuse*	bother*	devastat*	excruciat*	grouch*	jerks
abusi*	broke	devil*	exhaust*	grr*	kill*
ache*	brutal*	difficult*	fail*	guilt*	lame*
aching	burden*	disadvantage	fake	harass*	lazie*
advers*	careless*	disagree*	fatal*	harm	lazy
afraid	cheat*	disappoint*	fatigu*	harmed	liabilit*
aggravat*	complain*	disaster*	fault*	harmful*	liar*
aggress*	confront*	discomfort*	fear	harming	lied
agitat*	confus*	discourag*	feared	harms	lies
agoniz*	contempt*	disgust*	fearful*	hate	lone*
agony	contradic*	dishearten*	fearing	hated	longing*
alarm*	crap	disillusion*	fears	hateful*	lose
alone	crappy	dislike	feroc*	hater*	loser*
anger*	craz*	disliked	feud*	hates	loses
angr*	cried	dislikes	fiery	hating	losing
anguish*	cries	disliking	fight*	hatred	loss*
annoy*	critical	dismay*	fired	heartbreak*	lost
antagoni*	critici*	dissatisf*	flunk*	heartbroke*	lous*
anxi*	crude*	distract*	foe*	heartless*	low*
apath*	cruel*	distraught	fool*	hell	luckless*
appall*	crushed	distress*	forbid*	hellish	ludicrous*
apprehens*	cry	distrust*	fought	helpless*	lying
argh*	crying	disturb*	frantic*	hesita*	mad
argu*	cunt*	domina*	freak*	homesick*	maddening
arrogan*	cut	doom*	fright*	hopeless*	madder
asham*	cynic*	dork*	frustrat*	horr*	maddest
assault*	damag*	doubt*	fuck	hostil*	maniac*
asshole*	damn*	dread*	fucked*	humiliat*	masochis*
attack*	danger*	dull*	fucker*	hurt*	melanchol*
aversi*	daze*	dumb*	fuckin*	idiot	mess
avoid*	decay*	dump*	fucks	ignor*	messy
awful	defeat*	dwell*	fume*	immoral*	miser*
awkward*	defect*	egotis*	fuming	impatien*	miss
bad	defenc*	embarrass*	furious*	impersonal	missed
bashful*	defens*	emotional	fury	impolite*	misses
bastard*	degrad*	empt*	geek*	inadequa*	missing
battl*	depress*	enemie*	gloom*	indecis*	mistak*
beaten	depriv*	enemy*	goddam*	ineffect*	mock
bitch*	despair*	enrag*	greed*	inferior*	mocked
bitter*	desperat*	envie*	grief	inhib*	mocker*
blam*	despis*	envious	griev*	insecur*	mocking
bore*	destroy*	envy*	grim*	insincer*	mocks

molest*
mooch*
moodi*
moody
moron*
mourn*
murder*
nag*
nast*
needy
neglect*
nerd*
nervous*
neurotic*
numb*
obnoxious*
obsess*
offence*
offend*
offens*
outrag*
overwhelm*
pain
pained
painf*
paining
pains
panic*
paranoi*
pathetic*
peculiar*
perver*
pessimis*
petrif*
pettie*
petty*
phobi*
piss*
piti*
pity*
poison*
prejudic*
pressur*
prick*
problem*
protest
protested
protesting
puk*
punish*
rage*
raging
rancid*
rape*
raping
rapist*
rebel*
reek*
regret*
reject*
reluctan*
remorse*
repress*
resent*
resign*
restless*
revenge*
ridicul*
rigid*
risk*
rotten
rude*
ruin*
sad
sadde*
sadly
sadness
sarcas*
savage*
scare*
stress*
struggl*
stubborn*
stunk
stunned
stuns
serious
seriously
seriousness
severe*
shake*
shaki*
shaky
shame*
shit*
shock*
shook
shy*
sicken*
sin
sinister
sins
skeptic*
slut*
smother*
smug*
snob*
sob
sobbed
sobbing
sobs
solemn*
sorrow*
sorry
spite*
stammer*
stank
startl*
steal*
stench*
stink*
strain*
strange
trembl*
trick*
trite
trivi*
troubl*
turmoil
stupid*
stutter*
submissive*
suck
sucked
sucker*
sucks
sucky
suffer
suffered
sufferer*
suffering
suffers
suspicio*
tantrum*
tears
teas*
temper
tempers
tense*
tension*
terribl*
terrified
terrifies
terrify
terrifying
terror*
thief
thieve*
threat*
ticked
timid*
tortur*
tough*
traged*
tragic*
trauma*
ugh
ugl*
unattractive
uncertain*
uncomfortabl*
uncontrol*
uneas*
unfortunate*
unfriendly
ungrateful*
unhapp*
unimportant
unimpress*
unkind
unlov*
unpleasant
unprotected
unsavo*
unsuccessful*
unsure*
unwelcom*
upset*
uptight*
useless*
vain
vanity
vicious*
victim*
vile
villain*
violat*
violent*
vulnerab*
vulture*
war
warfare*
warred
warring
wars
weak*
weapon*
weep*
weird*
wept
whine*
whining
whore*
wicked*
wimp*
witch
woe*
worr*
worse*
worst
worthless*
wrong*
yearn*

Appendix E

Custom LIWC Dictionary for Frustrating Tasks (Study 2)

area
baby
buzzing
chalkboard
coding
codes
code
cognitive
cognition
crying
data
feet
field
fly
hammer
headphone
headphones
horns
jackhammer
line
lines
listen
listening
listened
math
memorize
minute
minutes
nail
nails
noise
noises
questions
remember
sock
socks
traffic
tactile
task
tasks
time
timed
type
typing
questions
remember
sock
socks
traffic
tactile
task
tasks
time
timed
typed

Appendix F

Personality and Relationship Variables Tested in the Exploratory Analyses

Avoidant and anxious attachment orientation

I assessed attachment avoidance ($\alpha_{Study\ 1} = .84$; $\alpha_{Study\ 2} = .81$) and anxiety ($\alpha_{Study\ 1} = .77$; $\alpha_{Study\ 2} = .80$) using the Experiences in Close Relationships scale (Brennan, Clark, & Shaver, 1988).

Chronic self-focus

To gauge the extent to which participants are usually self-focused, I measured chronic self-focus using items from the self-monitoring scale (Snyder, 1974) and private and public self-consciousness scales (Fenigstein, 1984) ($\alpha_{Study\ 1} = .84$; $\alpha_{Study\ 2} = .83$).

Mind-reading expected

The mind-reading expected subscale from the Relationship Beliefs Inventory (Eidelson & Epstein, 1982) is a measure of the degree to which relationship partners believe their romantic partner should be able to accurately identify one's own needs. I used this measure to explore whether people who feel transparent were also more likely to assume their partner typically knows (or should know) their inner thoughts and feelings ($\alpha_{Study\ 1} = .91$; $\alpha_{Study\ 2} = .88$).

Perceived partner responsiveness

I adapted Reis's (2003) perceived responsiveness scale to assess chronic perceptions of responsiveness from one's romantic partner ($\alpha_{Study\ 1} = .92$; $\alpha_{Study\ 2} = .90$).

Relationship interdependent self-construal

I measured relationship interdependent self-construal using Cross, Bacon, and Morris's (2000) relationship interdependent self-construal scale ($\alpha_{Study\ 1} = .81$).

Relationship satisfaction

To explore whether felt transparency or expressiveness is a function of satisfaction with their significant other, I used Hendrick, Dicke, and Hendrick's (1998) Relationship Assessment Scale ($\alpha_{Study\ 1} = .91$; $\alpha_{Study\ 2} = .95$).

Self-esteem

I assessed self-esteem using Rosenberg's (1965) 10-item scale ($\alpha_{Study\ 1} = .91$; $\alpha_{Study\ 2} = .92$).

Self-other overlap

I measured self-other overlap using Aron, Aron, Tudor, and Nelson's (1991) single-item Inclusion of Other in the Self scale.

Support-seeking behavior

I measured individual differences in self-reported support-seeking tendencies using a subscale of Dunkel-Schetter, Feinstein, and Call's (1986) Social Support Inventory. This support-seeking subscale assesses the degree to which people believe they ask for (versus conceal) their emotional and tangible support needs ($\alpha_{Study\ 1} = .82$; $\alpha_{Study\ 2} = .86$).

Trait expressivity

I measured trait expressivity using the 16-item Berkeley Expressivity Questionnaire (Gross & John, 1997). This scale assesses impulse strength (i.e., active suppression of emotional expression), expressivity of negative emotions, and expressivity of positive emotions ($\alpha_{Study\ 1} = .85$).

Trait expressivity to partner

To assess whether these chronic perceptions of felt transparency also extend to their relationship with their partner, I also adapted the trait expressivity scales to gauge felt

transparency to the romantic partner in particular ($\alpha_{Study\ 1} = .88$; $\alpha_{Study\ 2} = .82$).