The Role of Affect in Knowledge Transfer

Daniel Z. Levin and Terri R. Kurtzberg
Rutgers University

Katherine W. Phillips
Northwestern University

Robert B. Lount, Jr.
The Ohio State University

In two experimental studies of two-party information sharing, we demonstrate that affective state plays a role in the knowledge-transfer process. Study 1 (N = 108 MBA students) found that affective state has a larger impact on those in need of knowledge (“receivers”) than on those in possession of knowledge (“senders”), with elated/happy receivers more likely than angry/frustrated receivers to absorb and act on new information. Study 2 (N = 180 undergraduates) replicated this finding and also demonstrated that having receivers and senders in the same high-arousal affective state as each other (affective congruence) enhances knowledge transfer, regardless of whether the affective state is positive (elated/happy) or negative (angry/frustrated). These findings help fill an important gap in the literature regarding the influence of affect on knowledge transfer in groups.

Keywords: information sharing, affect, emotion, hidden-profile task

Organizations benefit in numerous ways—strategically, economically, financially—when they make full use of their employees’ combined expertise and knowledge (Argote, 1999; Grant, 1996; Wernerfelt, 1984). Yet researchers of both knowledge transfer in organizations (e.g., Kogut & Zander, 1992) and of information sharing in small groups (e.g., Wittenbaum & Stasser, 1996) have long recognized the problems inherent in trying to get people to share and learn from all of the information available to them. We address this issue by examining the role of affect—specifically, of high-arousal positive and negative affective states—on the knowledge-transfer process. Understanding how such affective states shape knowledge exchange is an overlooked but critical area for research. Thus, as individuals navigate the rich information environment that has developed in a fast-paced global workplace, it is critical to better understand the nuances of how affective states influence not just individual cognitions and decisions but also the interpersonal interactions inherent in business contexts (cf., Forgas & George, 2001).

Theoretical Background

Recent research on the role of affect in cognitive processing, creativity, group functioning, negotiation behavior, and interpersonal trust suggests that affect plays a critical and often overlooked role in organizational life (Amabile, Barsade, Mueller, & Staw, 2005; Barsade, Ward, Turner, & Sonnenfeld, 2000; Dunn & Schweitzer, 2005; George & Zhou, 2002; Grawitch, Munz, & Kramer, 2003; Kopelman, Rosette, & Thompson, 2006; Lount, in press; van Kleef, De Dreu, & Manstead, 2004). Given af-
fect’s importance to groups and organizations, our goal in this paper is to better understand how affect influences not just individuals but also interpersonal interactions in an information-sharing and decision-making context.

We therefore offer two main contributions. First, we provide insights on how affect can exert influence in a two-party information exchange. Then, in an exploration of dyad-level affect, we examine the influence of affective congruence (i.e., homogeneity) versus incongruence (i.e., heterogeneity) between information-exchange partners. Thus, we offer a view into the mechanics of how information gets sent and received in affect-laden situations and, hence, how decisions get made.

The Impact of Affect on Cognition

Theorists have drawn a variety of distinctions among the concepts of affect, emotion, and mood—focusing on definitional differences in terms of intensity and duration. For our purposes here, we focus on high-arousal positive (elation/happiness) and negative (anger/frustration) affective states (Barsade, 2002; Bartel & Saavedra, 2000; Larsen & Diener, 1992; Watson, Clark, & Tellegen, 1988; Watson, Wiese, Vaidya, & Tellegen, 1999).1 In distinguishing the impact that affective states have on cognition, Frederickson’s (2001, 2003) “broaden and build” theory argues that different affective states predispose people to have certain thoughts or take certain actions; for example, anger creates an urge to fight. In this view, positive affective states like joy and elation lead people to explore new ideas, think broadly, get creative, and be playful (cf. Isen, 1984, 2000) in ways that ultimately build personal resources, such as skills, social connections, and so on (Fredrickson, 2001). High-arousal negative affective states serve a different, more narrow function, however; they constrict an individual’s attention (Fredrickson & Branigan, 2005) into taking decisive action (Fredrickson, 2001). For example, anger tends to make people more hostile and less collaborative (Allred, Mallozzi, Matsui, & Raia, 1997; Tiedens, 2001). In a sense, then, one could say that, while positive affective states broaden and build, negative ones “narrow and defend.” Though some contradictory evidence exists—such as findings suggesting that positive-affect may discourage risk-taking or promote the use of quick “rules of thumb” (see Bless et al., 1996; Isen, Nygren, & Ashby, 1988; Tiedens & Linton, 2001)—nevertheless, as we shall see, this perspective has some important implications for knowledge transfer, where knowledge must be both shared and received, which is, by definition, an interpersonal phenomenon.

At the interpersonal level, then, we are particularly interested in how affect influences cognition and information processing—especially discussions—in groups. As has been noted by others (e.g., Barsade et al., 2000; Kelly & Spoor, 2006, 2007), though, empirical research in this area is needed, especially with respect to affect as a distinctly group-level construct (Kelly & Barsade, 2001), yet little exists to date. One exception is a study by Forgas (1990), who showed that when participants made social judgments of various categories of people (e.g., are Italians likable and honest? are librarians?), happy groups made more favorable evaluations than did happy individuals—suggesting that group discussion may strengthen the influence of positive affect. More recent work suggests that happy groups may make better use of new knowledge than do sad groups (Bramesfeld, 2006) and that members of a happy group are more likely than those in a neutral group to build on one another’s ideas in a creative, if not necessarily productive, way (Rhee, 2006). Thus, interpersonal affect appears to be important, but for the most part, research has not examined its role—especially for high-arousal negative affective states like anger/frustration—in more objective group decisions, which are likely to occur in knowledge-transfer or information-sharing situations.

Affect and Knowledge Transfer

The domain of knowledge transfer and information sharing is different from that of generic groups or individuals, where people’s roles are often seen as interchangeable. That is, successful knowledge transfer entails differentiated roles: a knowledge sender who shares new in-

1 We note that fear/anxiety, which is not our focus, is also a high-arousal negative affective state but which differs from anger in a number of ways, such as uncertainty appraisals (Tiedens & Linton, 2001) and avoidance orientation (Carver & Scheier, 1998).
formation and a knowledge receiver who listens to and uses this new information. While there are more complex variations on this dynamic, the core act of knowledge transfer involves these two roles of sending and receiving. Thus, knowledge transfer involves different individual tasks (i.e., sharing and listening) that are nonetheless interdependent and require interpersonal communication. As a result, some of what we know about affect and individual (or group) cognition may or may not apply to the knowledge-transfer domain.

Indeed, the vast majority of the scholarly literature on organizational learning and knowledge transfer has focused not on affect but on cognitive hurdles, such as absorptive capacity (Cohen & Levinthal, 1990), shared mental models (Orasanu & Salas, 1993), capabilities (Grant, 1996), knowledge tacitness (Hansen, 1999; Zander & Kogut, 1995), transactive memory (Liang, Moreland, & Argote, 1995), exploration versus exploitation (March, 1991; Uzzi & Lancaster, 2003), learning by doing (Argote, Beckman, & Epple, 1990; Levin, 2000), network range (Reagans & McEvily, 2003), strategic similarity (Darr & Kurtzberg, 2000), and routines (Feldman, 2000; Nelson & Winter, 1982). Absent from this list are the more localized effects of affect on the knowledge-transfer process. Similarly, the research on information sharing and hidden profiles in small groups has not traditionally examined the role of affect. A key finding in this literature is that most people prefer to discuss and pay attention to commonly held information (i.e., already known by everyone) instead of uniquely held information (for reviews see Stasser, 1999; Wittenbaum & Park, 2001; Wittenbaum & Stasser, 1996). One reason for this “common knowledge” effect is that people are often uncomfortable sharing their unique information. This discomfort may even have a rational basis, as research has shown that discussing common information can enhance one’s evaluation by other group members, whereas discussing unique information, even if it is not controversial, can negatively influence how one is perceived by other group members (Wittenbaum, Hubbell, & Zuckerman, 1999). Positive feelings about the group, such as through knowing each other well, can mitigate this tendency (Gruenfeld, Mannix, Williams, & Neale, 1996; McLeod, Baron, Marti, & Yoon, 1997; Phillips & Loyd, 2006). Yet there has been little or no examination of the direct impact of high-arousal affective states. Thus, as in the organizational literature on knowledge transfer, the current state of group-level literature on information sharing warrants the examination of the role of affect in this process. Our paper is an effort to fill this gap in the literature.

Hypotheses

Drawing on the idea that sharing unique information comes from a sense of comfort and ease (Gruenfeld et al., 1996; McLeod et al., 1997; Phillips & Loyd, 2006), we propose that high-arousal positive-affect will facilitate this sharing and high-arousal negative-affect will hinder it. When people are happy and excited, they tend to be more sociable (Waugh & Fredrickson, 2006), but when they are angry or frustrated, they tend to be more hostile and aggressive (Tiedens, 2001). We argue that when knowledge senders are experiencing positive affect, this affective state can buffer them from the potential lack of social validation and greater conflict that might arise during discussion of unique information (Wittenbaum & Bowman, 2004; Wittenbaum et al., 1999) in that they will focus less on what others think of their actions.

We note, however, that Fredrickson’s (2001) broaden-and-build theory of positive affect—with its emphasis on exploring, obtaining, generating, playing, and broadening—does not specifically include sharing information as part of the broader thought-action repertoire, and so it is possible this theory may not apply to the kind of task facing knowledge senders. Indeed, Kelly and Spoor (2006) speculate that group members in a positive affective state may actually be reluctant to voice dissenting opinions, so they can avoid conflict and thereby maintain their pleasant affective state. Conversely, a negative affective state might spur knowledge senders to exert more effort (Martin, Ward, Achee, & Wyer, 1993; George & Zhou, 2002). Nevertheless, given the social nature of knowledge transfer (e.g., Levin & Cross, 2004; Szulanski, 1996), our expectation is that positive knowledge senders will be more persistent than negative senders in sharing unique information. We thus hypothesize:
Hypothesis 1: Knowledge senders in a high-arousal positive affective state will share useful and unique information more often than will knowledge senders in a high-arousal negative affective state.

For knowledge receivers, the role of affect should be less ambiguous. For while both happy and angry people do share a propensity both for using quick “rules of thumb” (Bodenhausen, Kramer, & Süßer, 1994; Bodenhausen, Sheppard & Kramer, 1994) and for feeling greater certainty (Lerner & Keltner, 2001; Tiedens & Linton, 2001), the broaden-and-build theory (Fredrickson, 2001, 2003) identifies some important differences between these two affective states that likely apply to knowledge receivers. Specifically, high-arousal positive affect, such as elation or happiness, can create the urge to explore and to perceive connections that are not obvious (Fredrickson, 2001, 2003). Such individuals not only broaden their thinking to include more ideas (Vosburg, 1998), more intended actions (Fredrickson & Branigan, 2005), and more building on the ideas of others (Rhee, 2006), but they are also more open to information (Estrada, Isen, & Young, 1997)—characteristics that should be extremely helpful to a knowledge receiver who lacks critical information. Conversely, high-arousal negative-affect might be characterized as a “narrow and defend” mechanism, one that narrows the scope of attention (Fredrickson & Branigan, 2005) and impels people to take decisive action (Fredrickson, 2001). As a result, we would argue, knowledge receivers in this condition may be less willing to reconsider their initial conclusions to incorporate new and unique information when it becomes available, especially if the new information contradicts what they already know. In other words, the tendency toward openness— that is, of being “a willing and receptive listener” (Jablin, 1979, p. 1204)—is more likely to occur among elated or happy knowledge receivers, whereas frustrated or angry receivers may be unreceptive and dismissive of new information, focusing instead more narrowly on what they already know. Thus, we propose:

Hypothesis 2: Knowledge receivers in a high-arousal positive affective state are more likely to take action based on useful and unique information than are knowledge receivers in a high-arousal negative affective state.

In Study 1 we focus on the impact of a sender’s and receiver’s affective state by examining affect-induced participants paired with neutral-affect partners. In Study 2 we then integrate literature on affective congruence and examine what happens when senders and receivers in similar versus dissimilar affective states interact.

Study 1 Methods

Participants

Our sample included 108 graduate-level (MBA) business students, assigned to 54 pairs, from two large U.S. universities: 30% were from a midwestern university (70%, an eastern one); 40% were female; and the average age was 29.3 (SD = 5.1). Most participants (87%) did not know their partner well or had never met. Familiarity with synchronous communication tools like instant messaging (IM) was bi-modal: 34% of participants had rarely or never used it before (7 on a 1–7 scale); 44% used it daily (1); and 22% were in-between.

Experimental Design

In each condition, one person in the pair was in a neutral affective state (given no special instructions related to affect) and the other person was in either a high-arousal positive or negative affective state. Thus, the design was a modified $2 \times 2$ between-participants design (positive-negative affect $\times$ sender-receiver). The four conditions (1–4) had a positive sender, a positive receiver, a negative sender, and a negative receiver, respectively, with the other party always in a neutral affective state. We created same-gender pairs, counterbalanced by gender across all four conditions. To minimize pretask interaction, we also created pairs with students from two different class sections (e.g., day and evening), counterbalanced by section across all four conditions. In some cases, this was not possible, but a follow-up analysis showed that our findings were unchanged when we controlled for different-gender or same-section pairs.
**Task**

To avoid the retrospective and self-report biases that can arise from asking people about naturally occurring affective states during a prior knowledge transfer experience, we used a corporate acquisition simulation developed by McLeod et al. (1997). This approach is in the tradition of research on “hidden profiles” (e.g., Phillips, Mannix, Neale, & Gruenfeld, 2004), where one person is given unique information beforehand that, unbeknownst to everyone, no one else possesses, and this unique information is needed for everyone to solve the problem or make the correct decision. In this case, participants were asked to recommend which of three companies—A, B, or C—should be acquired. The knowledge receiver’s information packet made company B look like the most attractive acquisition, but the additional information in the knowledge sender’s packet made it clear that company A would be a better choice (e.g., a consultant projected much lower growth for company B). We intentionally avoided information-sharing simulations that might be too “fun” for participants (e.g., a murder mystery), as we did not want the task itself to induce a positive affective state.

To isolate the impact of affect and carefully examine both sides of the knowledge-exchange process, it was important to use a communication medium that would allow us to control for the impact of other variables, while still allowing for the rich exchange of information. Therefore, the simulation took place as an “e-discussion” via IM—that is, synchronous, text-based electronic communication—during a 1-hr time slot when both parties had indicated they would be available. This approach allowed us to focus on the ways in which affective state changed the exchange of information at its purest level; that is, the choice of what information to send or to pay attention to. Although information exchange can and does go through many different kinds of channels, including face-to-face, telephone, and online, we examine in this paper the written elements in isolation, as our primary interest is in focusing on the sharing and receiving of factual information, which is the strength of text-only media (see Moore, Kurtzberg, Thompson, & Morris, 1999; Thompson & Nadler, 2002; van Kleef et al., 2004, for examples of other work on affect or affect-related concepts using computer-mediated communication).

**Procedure**

Each member of a pair received a printed information packet to read individually that discussed the pros and cons of acquiring three companies, A, B, or C. Participants were instructed to read the case materials 30 minutes before their assigned discussion time. After reading the materials but before beginning the simulation, participants ranked their preliminary preferences for acquiring company A, B, or C.

After ranking their preliminary preferences, but before beginning the discussion, participants were instructed to open a sealed envelope containing their special prediscussion instructions (related to the affect manipulation). Relying on a combination of methods, we instructed affect-induced participants to think about a time when they were in an extraordinarily good [or bad] mood, as characterized by a list of descriptors: feelings of elation, enthusiasm, and excitement [or frustration, irritation, and annoyance]. Prior research has shown that being asked to “relive” an emotional experience based on a description of the target state can effectively induce that affective state (e.g., Berkowitz & Troccoli, 1986; Finegan & Seligman, 1995; Tsai, Chentsova-Dutton, Freire-Bebeau, & Przymus, 2002). Participants were also asked to think about another person who typically characterizes those affective behaviors and finally to enact and maintain that affective state (Kopelman et al., 2006) throughout the discussion to follow. Prior research has also shown that performing the actions associated with a particular affective state (e.g., smiling and laughing for positive affect) can induce the affective state in question (see Adelmann & Zajonc, 1989, for a review). All participants were instructed not to reveal their special instructions to their partner and to begin the e-discussion immediately after reading the prediscussion instructions. The individual in the neutral affect condition was instructed that “your partner has been assigned the role of initiating the conversation with you. Please do not contact that person until after you have received the first message.”

Immediately after their e-discussion (a record of which became our transcripts for coding),
individual participants opened another sealed envelope to complete a survey indicating their final decision (company A, B, or C), level of confidence in this decision, current affect, perceptions of their partner, and some demographic information. Since they were no longer interacting with their partner at this point, participants were free to offer their decisions as their own and not based on any manipulation instructions. After returning all forms, surveys, and transcripts, participants were fully debriefed.

Using these procedures, we began with 170 MBA students initially, but excluded from our analysis eight pairs unable to complete the task due to technical or scheduling reasons, three with a missing transcript, and six where one or both participants did not return their materials. Of those remaining, we excluded 14 pairs where, in their pretask preferences, both people had the same initial preference (e.g., A-A, B-B). The proportion of pairs where someone made such a mistake (21%) was consistent with past research using this task (McLeod et al., 1997; Phillips & Loyd, 2006), as making the initial task manipulation too obvious or strong can make receivers unwilling to ever switch their answer.

**Transcript Coding**

Participants copied and pasted their e-discussion text into a document and submitted it electronically to the researchers. Two undergraduate research assistants blind to the hypotheses and the experimental conditions were trained to code these transcripts. The coders divided each transcript evenly into quartiles, to track changes in the discussion over time and to guard against potential bias (by ensuring that coders completed one section before they discovered what happened later in the discussion). Coders did not know the final outcome of the discussion until the end of the transcript. We used three transcripts not eligible to be used in the final data analysis for the purposes of training the coders. During the training the coders discussed examples of each coding category with a study author and helped revise the coding scheme during the process (Weingart, 1997). Once the coders and the author were satisfied with the level of agreement, each coder then independently coded six additional transcripts (i.e., the same six) to establish reliability.

For each quartile, coders recorded information in three areas. First, they recorded the number of times that specific case facts uniquely held by the knowledge sender were mentioned, as well as whether or not the receiver acknowledged this information in any way. The coding of information sharing was facilitated by giving each coder a list of every piece of information that was included in the case, labeled as either commonly or uniquely held. The coders studied this listing of information and also read, studied, and discussed the case prior to coding the transcripts. During the coding, coders indicated the number of times unique information had been shared in each quartile of the transcript. For the six reliability-coded transcripts, this generated 24 count codes in total (four quartiles multiplied by six transcripts) for each coder. In addition, coders used a yes/no binary code for whether the receiver acknowledged hearing any of the unique information shared. According to Shrout and Fleiss (1979), a one-way intraclass correlation is the most appropriate interrater reliability statistic for this type of data. There were few discrepancies in the number of unique pieces of information counted by the coders (single-measure intraclass correlation coefficient = .87) and no discrepancies for whether or not the information was acknowledged. Thus, we achieved an acceptable level of reliability for the information-sharing data.

Second, coders rated the degree to which each person in the pair had an open-minded tone. To assess open-mindedness, coders were asked to give a rating of how willing each individual was to listen to the other side’s arguments on a scale ranging from 1 to 7. Coders rated open-mindedness as a 1 for participants “who either ignored or disparaged nearly every piece of information offered.” This included actively denying the importance of a piece of information or repeatedly ignoring (not commenting at all or never repeating) pieces of information provided by the other party. At the other extreme, coders rated open-mindedness as a 7 if individuals were “receptive to nearly every piece of information offered and proceeded to consider how the information related to the decision at hand.” This included actively acknowledging the importance (not just the existence) of a piece of information and consistently integrating the information into the conversation, demonstrating its relationship to their
own or other information previously raised. Note that this construct is different from verbal acknowledgment, because we felt it was possible for someone to acknowledge information with a closed-minded attitude; for example, if someone stated, “Yeah, yeah, you said that before, but who cares! It still doesn’t change the fact that X, Y, and Z are going on,” then it would be included as a verbal acknowledgment but would indicate relatively low open-mindedness. Third, the coders recorded their impression of the emotional tone of each participant (1 = very negative to 5 = very positive). For both the ratings of open-mindedness and these emotional tone ratings, the intraclass correlation coefficient was .85 (Shrout & Fleiss, 1979; Weingart, 1997).

**Survey Variables**

For hypothesis 1 (H1), the dependent variable was how often information uniquely held by the sender was mentioned; for hypothesis 2 (H2), it was whether or not the receiver switched his or her acquisition choice from company B (before the discussion) to company A (after the discussion). Other variables collected from the posttask survey were (a) self-reports of high-arousal positive-affect (PA) and negative-affect (NA) using items adapted from the PANAS (Watson et al., 1988) and circumplex model (Bartel & Saavedra, 2000); (b) interpersonal liking, using a four-item scale (Wayne & Ferris, 1990); and (c) three dimensions of perceived trustworthiness—competence, benevolence, and integrity—based on four items each, with 10 of these items coming from Mayer and Davis (1999) and two from Johnson, Cullen, Sakano, and Takenouchi (1996).

We used factor analysis (principal axis factoring with direct oblimin rotation) to ensure discriminant validity for the posttask affect measures. A scree plot of eigenvalues indicated two factors for our 14 adjectives (“Indicate to what extent you feel this now that you have completed your e-discussion with the other person”): PA (enthusiastic, excited, interested, determined, elated, inspired, lively) and NA (frustrated, annoyed, upset, angry, distressed, irritable, hostile), with all expected factor loadings above .6 (M = .76) and no cross-loadings above .3. We conducted a separate factor analysis for posttask ratings of perceptions of one’s partner: four items each for liking (e.g., “I think this person would make a good friend”), trust in competence (e.g., “I feel very confident about this person’s skills”), trust in benevolence (e.g., “My needs and desires are very important to this person”), and trust in integrity (e.g., “Sound principles seem to guide this person’s behavior”). The integrity-based trust items cross-loaded onto the other factors, so we eliminated them from our analysis. The resulting 12-item factor analysis indicated three factors, with all expected factor loadings above .5 (M = .78) and no cross-loadings above .3. All five coefficient alpha reliabilities were excellent, ranging from .89 to .93.

**Manipulation Checks**

Two manipulation checks supported our affect-induction procedures. First, the positive-affect-induced participants were rated (by coders blind to the conditions) as having a more positive affective tone in the first quartile of conversation, \( M = 3.80, SD = 0.72 \), on a 1–5 scale, than the negative-affect-induced participants, \( M = 2.73, SD = 0.60, F(1, 52) = 34.65, p < .001, d = 1.63 \). Further, this difference in affective tone was statistically significant \( (p < .001) \) in each of the other three quartiles as well. Although “neutral” participants had a freely occurring affective state, that is, their affective state was not manipulated, their emotional tone in the first quartile of conversation, \( M = 3.27, SD = 0.44 \), was exactly halfway between that of negative- and positive-affect-induced participants and was significantly higher than the former, \( F(1, 78) = 20.33, p < .001, d = 1.03 \), and lower than the latter, \( F(1, 80) = 17.22, p < .001, d = 0.89 \). Thus, participants behaviorally exhibited the affective state consistent with their condition. Second, posttask measures were also consistent with the conditions: positive-affect-induced participants reported feeling higher levels of PA, \( M = 4.32, SD = 1.30 \), than did negative-affect-induced participants, \( M = 2.36, SD = 0.94, F(1, 51) = 39.01, p < .001, d = 1.73 \). Similarly, negative-affect-induced participants reported higher levels of NA, \( M = 3.33, SD = 1.41 \), than did positive-affect-induced participants, \( M = 1.52, SD = 0.80, F(1, 51) = 33.92, p < .001, d = 1.62 \).
Analysis Techniques

We used binary logistic regression when the dependent variable was whether or not the knowledge receiver switched to the correct answer; we used one-way ANOVA or linear regression when the dependent variable was based on an interval scale; and—since linear regression and ANOVA are not appropriate for analyzing count data (Cohen, Cohen, West, & Aiken, 2003)—we used negative binomial regression when the dependent variable was the amount of unique information shared. To be conservative, we used listwise deletion of missing values in our analyses. Since our hypothesized results were unchanged with or without demographic and other variables—that is, location, gender, age, prior relationship strength, and IM familiarity—as covariates, we report our analyses below without covariates.

Study 1 Results

We detected no effect on knowledge transfer or learning by the knowledge sender’s affective state. For instance, all of the knowledge senders shared unique information—originally known only to them—with the knowledge receivers at some point during the discussion. Moreover, as shown in Table 1, there was not a statistically significant difference in how often this unique information was mentioned in pairs with a negative-affect sender, $M = 7.09, SD = 4.95$, versus those with a positive-affect sender, $M = 9.06, SD = 3.91, z = 1.16, p = .245, d = 0.44$. Controlling for the logarithm of transcript length did not change this result. Thus, although there was a trend in the hypothesized direction, H1 was not supported.

Affect did have a significant effect on knowledge receivers, however; only 13% of receivers experiencing negative-affect (Condition 4) switched to the correct answer, whereas half (50%) of receivers experiencing positive-affect (Condition 2) did so. This difference, predicted by H2, was statistically significant, $\chi^2(1, N = 27) = 4.40, p = .036, d = 0.88$. Thus, we see evidence that knowledge transfer is impaired when the knowledge receiver is in a high-arousal negative affective state as opposed to a high-arousal positive affective state (supporting H2). There was no difference in receivers’ switching behavior due to the sender’s affective state, $\chi^2(1, N = 27) = 0.77, p = .381, d = 0.34$.

In sum, a knowledge receiver’s affective state seems to matter to knowledge transfer, but a sender’s affective state, less so. In a follow-up analysis, we explored some possible reasons for these results. Of particular interest to us was why only 13% of negative-affect receivers switched to the correct answer, compared to 45%, 50%, and 63% of receivers in the other three conditions. Given the similarity of these positive- and neutral-affect receivers in Study 1, especially in terms of switching behavior and open-minded tone (see Table 1), we combined these groups of receivers and compared them to the negative-affect receivers (though it is important to note that the neutral participants were in a different situation than were the affect-induced participants because the former faced an affect-induced partner instead of a neutral one). We then conducted a mediation analysis.

Table 1
Study 1 Results

<table>
<thead>
<tr>
<th>Description</th>
<th>$n$</th>
<th>Percentage of receivers who switched to the correct answer</th>
<th>Receiver’s open-minded tone</th>
<th>Frequency of sharing unique information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Neutral receiver, positive sender</td>
<td>16</td>
<td>63%</td>
<td>5.41</td>
<td>9.06</td>
</tr>
<tr>
<td>2. Positive receiver, neutral sender</td>
<td>12</td>
<td>50%</td>
<td>5.41</td>
<td>8.29</td>
</tr>
<tr>
<td>3. Neutral receiver, negative sender</td>
<td>11</td>
<td>45%</td>
<td>5.08</td>
<td>7.09</td>
</tr>
<tr>
<td>4. Negative receiver, neutral sender</td>
<td>15</td>
<td>13%</td>
<td>3.44</td>
<td>8.93</td>
</tr>
<tr>
<td>ANOVA’s $F =$</td>
<td></td>
<td></td>
<td>16.36***</td>
<td></td>
</tr>
<tr>
<td>Chi-square =</td>
<td>8.93*</td>
<td></td>
<td>—</td>
<td>1.90</td>
</tr>
</tbody>
</table>

Note. $N = 54$ pairs. For analysis of differences across all four conditions for switching behavior, chi-square test from binary logistic regression is shown; for open-minded tone, F-test from ANOVA; for information sharing, chi-square test from negative binomial regression.

* $p < .05$. ** $p < .01$. *** $p < .001$. 
to see if a knowledge receiver’s open-minded tone—coded as how willing he or she was to hear and consider, though not necessarily agree with, the other person’s views—could help explain why negative-affect receivers were more reluctant to switch their choice than were receivers in the other three conditions combined. Although a Sobel test of mediation is not appropriate with a binary dependent variable like ours (MacKinnon & Dwyer, 1993), all four tests of full mediation (Baron & Kenny, 1986) were confirmed: one, negative-affect receivers had a less open-minded tone, $F(1, 52) = 48.89, p < .001, d = 2.06$; two, open-minded receivers were more likely to switch to the correct answer, $\chi^2(1, N = 54) = 19.68, p < .001, d = 1.51$; three, negative-affect receivers were less likely to switch to the correct answer, $\chi^2(1, N = 54) = 8.06, p = .005, d = 0.84$; and, four, controlling for the significant effect of a receiver’s open-minded tone, $\chi^2(1, N = 54) = 11.62, p < .001, d = 1.05$, there was no longer a significant effect of negative-affect on a receiver’s decision to switch to the correct answer, $\chi^2(1, N = 54) = 0.00, p = .973, d = 0.00$. Thus, it appears that the reason negative-affect knowledge receivers were less likely to switch to the correct answer was because they were less open to hearing what senders had to say.

We also investigated other possible reasons, but we were able to rule these out: First, a receiver’s negativity could have shaken the confidence of the sender, leading to self-doubt and a less authoritative description of the unique information; however, there were no differences by condition for how confident senders felt, $F(3, 48) = 1.82, p = .156$. Second, there were no differences by condition in the percentage of receivers who verbally acknowledged unique information when it was raised, $F(3, 50) = 0.49, p = .692$. That is, most negative-affect receivers had enough information-processing capacity to at least notice the unique information shared by their partner—but they simply were not as open to considering it seriously. Third, the negative-affect receivers not only started off their conversations as less open-minded than receivers in other conditions, but they became even less open-minded over time, while the others remained at a relatively more constant level (Huynh-Feldt test, $p = .027$). This pattern suggests that the effects of affect may have been intensified by the nature of the discussion and thus these effects were likely not merely due to the characteristics of the initial manipulation. Fourth, negative-affect receivers might have balked at switching to the correct answer if knowledge senders took a more negative tone with them; however, the emotional tone of senders was not significantly different with negative-affect receivers, $M = 2.93, SD = 0.26$, versus with other receivers, $M = 3.25, SD = 0.70, F(1, 52) = 2.83, p = .099, d = 0.47$. Fifth, knowledge senders could have been viewed less favorably—and, hence, with greater suspicion—by negative-affect receivers versus by other receivers, but this was not the case in terms of either competence-based trust, $M = 4.57, SD = 1.05$ vs. $M = 5.05, SD = 1.02, F(1, 52) = 2.40, p = .128, d = 0.43$; benevolence-based trust, $M = 3.47, SD = 1.66$ vs. $M = 3.87, SD = 1.32, F(1, 52) = 0.85, p = .360, d = 0.26$; or posttask liking, $M = 4.60, SD = 1.37$ vs. $M = 4.66, SD = 1.46, F(1, 52) = 0.02, p = .893, d = 0.04$.

**Study 2 Hypotheses**

Given the lack of support for H1, it appears that a knowledge sender’s affective state does not influence knowledge transfer. Yet it may be the case that the interaction between the sender’s and receiver’s affect is important. Thus, in Study 2, we sought to examine empirically if pairs of knowledge receivers and senders that were homogeneous in terms of their affect (i.e., affect congruent) would make better decisions than heterogeneous pairs. In addition, Study 2 was designed with a different procedure for inducing affective states in participants—one that did not explicitly instruct participants to enact a particular affective state—to allow us to have more confidence that the results of Study 1 are due to the affective states themselves and not any possible demand characteristics resulting from the original procedure (e.g., if participants made decisions based on what they thought the instructions mandated as opposed to based on the task materials and conversation). Thus, Study 2 gives the opportunity to reinforce the findings from Study 1 as well as explore new ground in terms of the interactions of affective states.

While there is an increasingly well-developed literature on how affective states can
spread from one person to another (e.g., Barsade, 2002; Bartel & Saavedra, 2000), there is less understanding of what happens to group decision making when people have similar versus dissimilar affective states. Drawing on similarity-attraction perspectives (cf. Clore & Byrne, 1974), it has been argued that people prefer to interact with others who share a similar affective state (Barsade et al., 2000). Put simply, people who are in the same affective state want to be together and are more satisfied interacting with each other (George, 1990; Locke & Horowitz, 1990; Schachter, 1959). One rationale for this effect is that individuals want to have their own feelings validated by others and, thus, seek out people who will do so (Locke & Horowitz, 1990; Schachter, 1959). Moreover, once together, emotionally similar pairs (e.g., dating partners, college roommates) are more likely to feel close to each other and to stay together (Anderson, Keltner, & John, 2003). Similarly, George (1990) has argued that employees with similar affect are more likely to stay working with one another than will employees with dissimilar affect.

One important way that similarity-attraction manifests itself is the finding that people are more willing to be influenced by similar others (cf. Cialdini, 1993). Barsade et al. (2000) extend this idea by showing that, when top executives have a similar level of positive-affect as a stable trait (cf. Watson & Walker, 1996) compared to that of their fellow executives—that is, when they have a similarly cheerful and energetic (vs. a subdued and reserved) personality—then such executives are more likely to perceive that they have greater influence within the top management team than do individuals who are affectively dissimilar from their fellow group members. We seek to extend these findings further by examining not self-perceptions of influence (which may be influenced by self-report or other biases), but, rather, the impact of state-affective similarity on more objective measures of influence. That is, in the current study, we seek to test whether actual behaviors of switching from an incorrect to correct decision will occur more frequently in affect-congruent groups than in affect-incongruent groups. Adopting the similarity-attraction perspective, we anticipate that knowledge receivers will be more likely to incorporate new and unique information from someone who seems different. Indeed, the reassurance that comes from interacting with someone in a similar affective state (Locke & Horowitz, 1990; Schachter, 1959) may be akin to the increased sense of comfort that has been shown to benefit knowledge receivers who are very familiar with a knowledge sender (Gruenfeld et al., 1996). Thus, we hypothesize:

Hypothesis 3: Knowledge receivers are more likely to take action based on useful and unique information when they are in the same affective state as the knowledge sender than when they are in a different affective state.

Study 2 Methods

To test hypothesis 3 (H3), provide a more controlled environment, and resolve any methodological concerns regarding the affect manipulations used in Study 1, our second study was conducted in the laboratory with undergraduate participants.

Participants

Our sample consisted of 180 undergraduates, assigned to 90 pairs, recruited from a large midwestern university to participate in “a study on decision making” and paid $10 for their participation. Of these, 58% were female; 78% were native English speakers; and the average age was 20.0 (SD = 1.4). Familiarity with instant messaging was high: only 3% of participants had rarely or never used it before (7 on a 1–7 scale), whereas 77% used it daily (1).

Experimental Design

As in Study 1, all participants were randomly assigned to the role of either knowledge sender or receiver. These pairs were randomly assigned to one of five conditions: 2 (sender’s affect: positive vs. negative) × 2 (receiver’s affect: positive vs. negative), plus a control condition where both the sender and the receiver were in a neutral affective state.

Task

The task was highly similar to the one used in Study 1; however, we changed the surface fea-
ures—from acquiring a company to choosing a job—so that undergraduates would be better able to relate to the task. We also revised, simplified, and strengthened the case and reduced the options from three companies to two. Specifically, participants were given information about companies A and B, along with an instruction sheet that told them that their “friend,” Max, was currently finishing up a study-abroad year and so was not as easily able to compare the two job offers he had received, so he had asked them to read through the information provided about these companies and then select which company they thought Max should join. The instructions also noted that, after indicating individually an initial tentative leaning, they would be discussing the issues with a second friend of Max’s before making a final recommendation to Max. As in Study 1, and unknownst to participants, knowledge senders were given unique information that revealed company A as the better choice, but receivers lacked this unique information about company A, and consequently their available information made company B appear to be the better choice. The new materials were pretested with 21 undergraduates to see which company they initially selected. The materials were then revised and pretested with another 15 undergraduates. These revisions helped us reduce task manipulation failures from 21% of pairs in Study 1 to 14% in Study 2.

Procedure

Participants arrived at the laboratory, were greeted, and led to a private breakout room equipped with a computer. After completing their consent form, participants were given their task instruction sheet and information packet. After making their initial tentative decision choosing either company A or B, participants were told that it would take a couple of minutes to network everyone’s computers together, and while they waited, they should view a video clip that another researcher was interested in piloting for future research. Participants were instructed to sit at their computer and put on a pair of headphones and to press the “begin” button to start watching the video clip. Participants viewed a positive-, negative-, or neutral-affect video clip, each of which lasted roughly three minutes. When the video clip ended, participants completed two questions about sound and picture quality, after which the computer informed participants that their computer was now networked with another person’s computer and that they would soon begin their e-discussion.

Before beginning the e-discussion, participants were instructed on their computer that they should avoid mentioning personal information, such as names, with the other person, spend about 10 minutes to discuss the case, and open the door at the end of the discussion to signal to the experimenter that they were finished. Upon pressing the “next” button, a private chat room popped up on their screen and participants were instructed to type “ready” to signal to the other person that they were ready to begin discussing the case. When both participants were ready, they began their e-discussion.

After their e-discussion, participants were handed a posttask questionnaire packet that asked them to make a final (individual) recommendation to Max, along with questions regarding current affective state, perceptions of the partner, and various demographic questions. After completing the survey, participants were fully debriefed.

Using these procedures, we began with 242 undergraduates initially, but excluded 15 pairs due to one or both participants failing the task manipulation, 7 for a missing transcript, 2 for not completing the posttask survey, and 7 for other technological problems.

Transcript Coding

Following Study 1, three MBA student coders—blind to the experimental conditions and hypotheses—trained with one of the authors and established reliability by independently coding 10% of the Study 2 transcripts, by quartile, for when unique knowledge was shared and how it was received. The three coders achieved a high degree of interrater reliability (single-measure intraclass correlation = .90; Shrout & Fleiss, 1979).

Survey Variables

In addition to asking the same questions from Study 1, we also included four new posttask survey items on perceptions of partner’s openness (e.g., “This person was willing to
listen to my opinions”; Cronbach’s $\alpha = .92$). Discriminant validity was high, and all coefficient alpha reliabilities were very good, ranging from .82 to .92.

### Manipulation Checks

A direct affect-manipulation check was not included in the procedure for Study 2, as we were concerned this would bias or diminish our affect induction (Keltner, Locke, & Audrain, 1993; Schwarz & Clore, 1983). Consistent with prior research (e.g., Dunn & Schweitzer, 2005; Lount, in press), however, we ran an affect-manipulation check on a separate sample of 60 participants recruited from the same subject pool. These participants viewed one of our three video-clip excerpts: positive-affect (from *Mrs. Doubtfire*), negative-affect (from *My Bodyguard*), or neutral affect (from a documentary on the history of golf). After viewing the video clip and rating picture and sound quality, participants immediately completed items from the PANAS scale, rating on a 1–7 scale the degree to which they were currently feeling enthusiastic, excited, elated, lively (positive affect $\alpha = .87$), frustrated, upset, angry, and irritated (negative affect; $\alpha = .96$). As anticipated, participants who viewed the positive-affect clip reported higher levels of positive affect, $M = 3.96$, $SD = 1.22$, as compared to participants who viewed the negative-affect clip, $M = 2.68$, $SD = 1.05$, $t(57) = 3.86$, $p < .001$, $d = 1.12$, or the neutral-affect clip, $M = 2.93$, $SD = 0.87$, $t(57) = 3.11$, $p = .003$, $d = 0.97$. Furthermore, participants who viewed the negative-affect clip reported higher levels of negative affect, $M = 4.73$, $SD = 1.45$, as compared to participants who viewed the positive-affect clip, $M = 2.16$, $SD = 1.02$, $t(57) = 6.20$, $p < .001$, $d = 2.05$, or the neutral-affect clip, $M = 3.16$, $SD = 1.41$, $t(57) = 3.78$, $p < .001$, $d = 1.10$. Prior research has demonstrated that video clips are effective tools at inducing a desired affective state (cf. Gross & Levenson, 1995), and they proved to be in this case as well.

### Analysis Techniques

Analyses are similar to those used in Study 1, except that all analyses in Study 2 include native English speaker ($0 = no$, $1 = yes$) for sender and receiver, as two covariates. Prior experience with the subject pool for Study 2 suggested that including these can help reduce noise in the data. In a separate robustness check not shown, we also included three other covariates—gender, age, and IM familiarity—but these were not generally significant, and our hypothesized results were unchanged when including them.

### Study 2 Results

Consistent with Study 1 was a null finding for H1, in that there was no main effect of the sender’s affect on the sharing of unique information. Specifically, as shown in Table 2, controlling for receiver’s affect and the interaction effect, senders experiencing positive-affect shared their unique information about as often, $M = 7.68$, $SD = 4.96$, as did senders experiencing negative affect, $M = 6.68$, $SD = 4.40$, $\chi^2(1, N = 76) = 0.23$, $p = .634$, $d = 0.21$. In addition, we note that nearly all senders (95%) shared at least some unique information, and the handful who did not do so were distributed equally among the four conditions, $\chi^2(3, N = 76) = 0.05$, $p = .976$. Controlling for the logarithm of transcript length did not change these results.

As in Study 1, H2 was supported; that is, controlling for sender’s affect and the interaction effect, knowledge receivers were less likely to switch to the correct answer when they were experiencing negative-affect than when experiencing positive-affect. Also consistent with our findings from Study 1 was that this main effect of just receiver’s affect was mediated by the receiver’s open-mindedness (in this case, as perceived by the sender). As noted earlier, a Sobel test is not appropriate for a binary dependent variable (MacKinnon & Dwyer, 1993), as we have here; however, all four mediation tests (per Baron & Kenny, 1986) were confirmed: one, negative-affect receivers were less open-minded than positive-affect receivers, $F(1, 70) = 5.71$, $p = .020$, $d = 0.56$; two, open-minded receivers were more likely to switch to the correct answer, $\chi^2(1, N = 76) = 6.94$, $p = .008$, $d = 0.63$; three, negative-affect receivers were less likely to switch to the correct answer, $\chi^2(1, N = 76) = 5.27$, $p = .002$,
d = 0.55; and, four, with both variables included, receiver’s open-mindedness remained a significant predictor of the decision to switch to the correct answer, $\chi^2(1, N = 76) = 4.10, p = .043, d = 0.48$, while there was no longer a significant effect of receiver’s affect, $\chi^2(1, N = 76) = 2.43, p = .119, d = 0.36$. Thus, as in Study 1, knowledge receivers experiencing negative-affect were less willing to listen to what the sender had to say and therefore to act on any new and useful information provided by the sender.

As illustrated in Figure 1, we found evidence for the benefits of affective congruence on knowledge transfer, supporting H3. The interaction effect between receiver’s affect and sender’s affect (note that, since we control for each side’s affect here, this interaction term is equivalent to including a variable for “same affect”) was statistically significant, $\chi^2(1, N = 76) = 6.25, p = .012, d = 0.60$, where 38% of same-affect receivers switched to the correct answer versus only 19% of mixed-affect receivers. In addition, within the same-affect pairs, the positive-positive ones (50% of whom switched) outperformed the negative-negative ones (29% of whom switched), $\chi^2(1, N = 39) = 5.06, p = .025, d = 0.77$.

Finally, we note that our control group of neutral-neutral pairs had a switching rate (43%) closest to that of the positive-positive pairs (50%) and nominally higher than any condition involving a negative-affect participant (24%, 15%, 29%). However, the only statistically significant difference here was between the control group and the condition that suffered from both of this study’s effects: where receivers had negative-affect and an affect-incongruent (i.e., positive) sender (15% switching rate), $\chi^2(1, N = 34) = 4.11, p = .043, d = 0.74$.

Discussion

Our results indicate that affect had a greater impact on knowledge receivers than on knowledge senders. More specifically, receivers experiencing high-arousal positive-affect (elation/happiness) had more successful knowledge transfer than did receivers experiencing high-arousal negative-affect (anger/frustration), whereas the sender’s affect had no direct impact on knowledge transfer. However, the sender’s affective state did play an indirect role in that, controlling for the receiver’s and sender’s affect, affect-congruent pairs (i.e., pairs where both sender and receiver were experiencing the same affect) outperformed affect-incongruent pairs in the successful exchange of information. These results provide support for the idea that affect plays a critical but somewhat complex role in the knowledge-transfer process. Taken together, our results at the individual and interpersonal level suggest that researchers may need to expand theories of knowledge sharing...
and learning to incorporate the influence of affect, particularly on knowledge receivers and the interaction between senders and receivers.

**Implications for Individual Affect**

At the individual level, our results indicate that, in the knowledge-sharing context, the role of positive and negative-affect is not a simple main effect where negative-affect always hinders and positive-affect always benefits the parties. Instead, it may be important to recognize that affect seems to act more strongly on those needing to absorb new information as opposed to those in possession of useful information. Though not specifically predicted by Frederickson’s (2001, 2003) broaden-and-build theory of positive affect, we thus find that a contrast between the broadening of a person’s thoughts by positive-affect (Frederickson, 2001; Fredrickson & Branigan, 2005) versus the narrowing by negative-affect (Allred et al., 1997; Fredrickson & Branigan, 2005; Weick, 2004) applies fully to knowledge receivers (as predicted by H2), but we do not find evidence that it applies directly to knowledge senders (i.e., H1 was not supported). Indeed, as noted earlier, while Frederickson (2001, 2003) and others (e.g., Watson & Walker, 1996) have focused their attention on a person’s openness to new experiences and information, these theories of positive and negative-affect have not explicitly addressed the issue of a person’s propensity to share information with others.

Although some scholars have speculated that knowledge senders experiencing positive-affect will be less likely to share unique information (Kelly & Spoor, 2006), we predicted that positive-affect senders would be more likely to share; in the end, though, both Studies 1 and 2 revealed no evidence that affect had any direct impact on information-sharing behavior by knowledge senders. While we cannot conclude definitively by our lack of results that senders could never be influenced by affect—and, indeed, a future larger sample may yet detect such

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*Figure 1. Interaction Effect of Sender's Affect and Receiver's Affect (Study 2).*
an effect—nevertheless our results do suggest that the influence is likely to be weaker at the least. If this is in fact the case, then this may be because the decision to tell other people what is on one’s mind (i.e., knowledge sending) is influenced more by elements of the relationship, the social context, or perhaps even internal motivations like the need to be listened to, to be right, or to be liked, rather than by one’s affective state. Given that our research focused entirely on high-arousal affective states, however, it is also possible that low-arousal affective states will show a different pattern of behavior altogether, based perhaps on lesser feelings of boldness and confidence. In addition, we note that in Study 1, even within our instructions to relive a frustrating experience, there may be real differences to the kind of event that was recalled and the resulting impact on open-mindedness. For example, frustration stemming from being wronged might cue different thoughts and behaviors than frustration from being in the wrong oneself. Thus, future research might examine if the impact of a negative affective state is moderated by its perceived cause: self versus other.

The phenomenon we observed here of nearly all the knowledge senders, regardless of affective state, choosing to share their unique information with their partner is in contrast to findings showing a preference by groups to heavily discuss commonly held instead of unique information (see Wittenbaum & Stasser, 1996, for review). One reason for our result may be that groups tend to share more unique information on this type of task if they are communicating electronically, as in our studies, rather than face-to-face (Campbell & Stasser, 2006; Dennis, 1996; Lam & Schaubroeck, 2000). Another reason may be that we studied pairs rather than larger groups, where holding a minority viewpoint may itself increase senders’ feelings of anxiety or distress and, hence, their reluctance to share unique information (see, for instance, Stasser & Davis, 1977). Moreover, Asch’s (1955) work on conformity highlights that people are more likely to conform to the opinions of others when facing a unanimous majority. Future research may thus consider the role of affect in larger group decision-making settings as well.

In contrast to the null effect for information sharing in our studies, though, we do find support for the idea that information receiving is influenced by affect: that is, happy receivers perform better than angry receivers. Consistent with previous work demonstrating the potentially limiting effects of negative-affect and the benefits of positive-affect (e.g., Estrada et al., 1997; Frederickson, 2001), we see that, when an individual is in a position of having to listen to and consider another person’s point of view, affect seems to moderate this process. What we do not know from these results, however, is again how low-arousal affective states (especially sadness) enter the equation. Such comparisons in the knowledge transfer context would be worthy of attention, given prior research suggesting that, for example, sad decision makers—in contrast to angry or happy ones—tend to be more systematic in their thinking (e.g., Bodenhausen, Kramer et al., 1994; Bodenhausen, Sheppard et al., 1994; Tiedens & Linton, 2001). Thus, it may not be the negative valence of anger alone that is causing the limit in knowledge absorption but rather the combination of that and a high-arousal state, whereas a negative valence with a low-arousal state (sadness) may cause one to be that much more willing to consider each new piece of information. Future research could examine this phenomenon in more depth and additionally compare such affective states to a neutral valence as well (something we were able to do in only a limited way in our studies but that future studies could address more directly).

In this paper, we have focused on knowledge transfer situations where one party is clearly and definitively the sender, and the other, the receiver of unique information. This basic model likely applies to many circumstances involving knowledge transfer, but in some cases, the roles of sender and receiver may be less clear cut. For example, when two people jointly discuss a problem with a great deal of give and take, someone may be a sender one minute and a receiver the next, as each person strives to build on the other’s ideas. In cases such as these, the role of affect may be less precise as well, and we might expect the affective states of both parties to have independent but still direct effects on group decision making, since there are essentially two knowledge receivers involved in this process.

Finally, in terms of individual affect, we note that our focus has been on affective states, but our findings may have implications for affective traits (e.g., personality characteristics) as well. That is, just as observable features such as de-
mographic similarity play a stronger role in newer relationships than in older ones (Levin, Whitener, & Cross, 2006), so, too, our findings for affective states may apply more strongly to newer groups or short-term outcomes, whereas over the long term it may be affective traits that become more relevant. In addition, future work could examine if there are certain types of individuals—for example, those with a disagreeable or angry disposition or with less receptivity to new ideas in general—who are more reluctant than most to accept and act on new information when experiencing negative affect.

**Implications for Affect Congruence**

Results from our second study remind us that knowing what affective state a knowledge receiver is in does not tell the whole story—instead, it seems that the interaction between the receiver’s and sender’s affective states has important implications for the success of knowledge transfer. Specifically, we found that affect-congruent pairs performed better than affect-incongruent pairs in terms of knowledge transfer.

It may be the case that the finding in the small-groups literature that familiar individuals are more successful than strangers at knowledge transfer (Gruenfeld et al., 1996) could be due at least in part to the emotional similarity that tends to arise in close relationships (Anderson et al., 2003). Future research could test this reinterpretation of Gruenfeld et al.’s (1996) result to see if affective similarity is one of the underlying causes of the beneficial “comfort” felt by familiar individuals during the knowledge transfer process. In addition, our results are consistent with the findings from the affect-and-persuasion literature showing that people are more persuaded by messages framed in ways that are consistent with the way they currently feel (DeSteno, Petty, Rucker, Wegener, & Braverman, 2004). Perhaps it is the case that while nearly all senders shared their unique information, they did so in different ways depending on their own affective state and that this form of encoding led to more or less success in decoding the message depending on the match with the receiver’s affective state. Thus, the mechanism here may be either interpersonal- or content-based or both, and future research can potentially aim to disentangle these mechanisms more fully.

Future research could also aim to explore the specific conditions under which the matching of affective states helps people successfully exchange information. For example, consistent with Study 2, where participants interacted with each other more or less anonymously, it is possible that a first-impression effect has a dominant role here, where interacting with someone experiencing the same affective state as oneself right away leads to rapport and comfort. Future research could thus examine if the benefits of affect congruence lessen over time, or if, to the contrary, having two people build an affective state together over time actually increases decision-making performance.

Another potential boundary condition for the benefits of matching affective states may be that, while affect-congruence may potentially mitigate the deleterious effects of a high-arousal negative affective state caused by an unrelated event, this would presumably not be the case when the negative-affect is directed specifically at another group member. That is, as Anderson et al. (2003) note, “in interactions that involve conflict, similar anger responses are likely to be counterproductive (Gottman & Levenson, 1992), and instead complementary emotions, such as calm or sympathy, are likely to be more beneficial. In these short-term contexts, emotional dissimilarity rather than emotional similarity might thus be beneficial” (p. 1065).

We similarly note that the mixed-affect pairs in our Study 2 were all experiencing high-arousal affect, either positive or negative. Future research, then, could expand on our findings by examining the interaction between high- and low-arousal affective states as well. For example, do angry-sad (high/low negative) or euphoric-calm (high/low positive) pairs also suffer from the same knowledge transfer problems that we observed in high-arousal affect-incongruent pairs?

**Limitations**

While our experimental design allows us to make inferences about the causality of the effects we observe here, there are still several limitations we need to recognize. The first is that participants in our study were students in a business-school setting engaging in a simulation, and not employees making a real decision with real-life consequences. Second, the Study 1 affect-induction procedures leave open the possibility that demand characteristics, rather than actual experienced affect, may have caused the behaviors we observed (including giv-
ing particular ratings on our affect questionnaire items) or that there were different levels of cognitive activity required to maintain positive or negative-affect in Study 1. However, the use of a more subtle affect manipulation in Study 2 gives us greater confidence that participants were not responding to what they thought the researchers hoped they would do, but rather that their affective states did in fact generate the patterns we see. We also note that our findings are based on an objective, interpersonal decision-making task, rather than a creative, idea-generating task, and so we cannot necessarily generalize our findings here on knowledge transfer to the realm of creativity. Finally, it is important to note that the computer-mediated context we studied has its own unique characteristics as an affect-sharing medium. Trust, rapport, and shared affect potentially build in different ways in this setting, and, in fact, it is possible to imagine that the experience felt by one party may not mirror what is perceived by the other to a greater extent in this setting. Future research can help tease apart these effects.

Conclusion

Understanding the influence of affect on interpersonal interactions and the knowledge transfer process in particular is an important endeavor, both theoretically and empirically. Past research has demonstrated that individual cognition is influenced by affect. The current studies bring the role of affect into the interpersonal arena, focusing on how affect separately influences both the sharing and receiving of information in the knowledge transfer process, as well as the impact of affect congruence (vs. incongruence) within a group. The impact of affect in organizational decision making is yet to be well understood. Our work provides a step toward understanding this impact by bridging the disparate yet related literatures on knowledge transfer, information sharing, and affect at the individual and group levels. Our results clearly indicate that affect does play a role in the knowledge transfer process, and future research can help explore the nuances of this role.

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