

Language use and style matching in supportive conversations between strangers and friends

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Abstract

Using data from individuals disclosing a personally relevant and problematic event to either a stranger ($N = 151$) or friend ($N = 119$), this study explored whether emotion and cognitive mechanism words produced by the discloser and the language style matching (LSM) of interlocutors influenced the reappraisal process necessary to feel better. Results showed that positive emotion words and LSM influenced reported emotional improvement through the mechanism of cognitive reappraisal (CR). This model was supported for friends and strangers who also did not appreciably differ with respect to language use or style matching. The discussion highlights the role of CR as well as the potential for other emotion regulation strategies in the conversational coping process.

Keywords

Behavioral matching, comforting, language style matching, mimicry, social support, stress, supportive listening

Talking with others is a principal means of coping with stress (Rimé, Mesquita, Philippot, & Boca, 1991). Current theoretical efforts have provided some evidence that talking through problems assists emotional processing by helping distressed individuals reappraise their problematic events (Burleson & Goldsmith, 1998; Jones & Wirtz, 2006).

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Such conversationally induced reappraisals are thought to be at least partially a function of enacted support, or those specific elements of supportive talk produced by an engaged helper in the service of helping a distressed other feel better (for reviews, see Goldsmith, 2004; MacGeorge, Feng, & Burleson, 2011). The study reported below contributes to this literature by (a) documenting the impact of discloser language use on cognitive reappraisal (CR) and emotional improvement (EI), (b) investigating dyadic language coordination as an essential element of supportive conversations, and (c) exploring the degree to which relationship status influences the impact of discloser language use and coordination on supportive conversation outcomes.

Although supportive communication scholars have documented myriad behavioral features that distinguish more and less helpful support provision (MacGeorge et al., 2011), considerably less emphasis has focused on how disclosers talk about problems; that is, in what ways do distressed individuals tell their stories to others? Importantly, how distressed individuals make sense of an event is tightly connected with how they narrate that event (e.g., Graybeal, Sexton, & Pennebaker, 2002). A sizable literature on expressive writing (EW; Lepore & Smyth, 2002) has documented that when people write about traumatic events, words that reflect emotional processing and words that reflect cognitive processing have reliable effects on both mental and physical health outcomes. We explore whether this pattern of findings persists when distressed individuals narrate a problematic event to another person.

Of course, there are clear differences between writing about and talking through problematic events. Unlike journaling exercises, supportive conversations are inherently dyadic events; there are (at least) two interdependent partners who coordinate joint actions over time. Yet, most research attention has been afforded to how people provide or evaluate supportive *messages*, isolated from conversational context, and often presented within hypothetical scenarios (Goldsmith, 2004; High & Dillard, 2012; Jones & Bodie, 2014). Message evaluation research has provided insight into specific features of messages viewed as more and less helpful (Burleson, 2003) and how these messages are likely interpreted and processed (Bodie & Burleson, 2008). Message evaluation work does not, however, adequately address how support recipients' thoughts and feelings are impacted by supportive conversation, which is a primary site for emotion management (Burleson & Goldsmith, 1998; for a similar argument, see Feeney, Cassidy, Lemay, & Ramos-Marcuse, 2009). In this study, we focus on a pattern of coordination called language style matching (LSM), which is thought to be primarily automatic and indicative of conversational engagement (Ireland & Pennebaker, 2010).

Finally, although scholars recognize that problems are primarily discussed with close others (Goldsmith, 2004), we are not aware of any study that has addressed the role of language style in supportive conversations between people who have more than zero-history relationships. Research on supportive interactions has focused on language used by disclosers with confederate support providers (Jones & Wirtz, 2006), while work extending the EW paradigm has employed research assistants (Harrist, Carlozzi, McGovern, & Harrist, 2007), therapists (Donnelly & Murray, 1991), and tape recorders (Esterling, Antoni, Fletcher, Margulies, & Schneiderman, 1994) as the recipients of spoken monologues. To address this limitation of prior research, we examine the degree to which relationship status moderates the influence of language use on outcomes.

Talking about stressors

A principle goal of supportive conversations is to allow for the verbal disclosure of thoughts and emotions relevant to a problematic event (Burleson & Goldsmith, 1998; Clark, 1993). According to appraisal-based theories of emotion, emotional experiences are a consequence of how individuals interpret (i.e., appraise) situations (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986; Lazarus & Folkman, 1984). When an individual interprets an event as having negative implications for personal well-being (primary appraisal) and questions his or her ability to cope with those implications (secondary appraisal), emotional reactions tend to be negative. Thus, in order to change emotional responses to events, the distressed individual must reinterpret the meaning of that event, a process known as cognitive reappraisal (CR). As a strategy for emotion regulation, CR “alters the trajectory of emotional responses by reformulating the meaning of a situation” (Goldin, McRae, & Gross, 2007, p. 577).

One explanation for how language use leads to positive outcomes is offered by Burleson and Goldsmith’s (1998) reappraisal-based theory of supportive conversations. The conversationally induced reappraisal theory identifies and specifies supportive conversations as the primary site for reconstructing appraisals and helping distressed others “express, elaborate, and clarify relevant thoughts and feelings” (Burleson & Goldsmith, 1998, p. 260). This theory suggests that verbalization of positive emotions indicates progress toward viewing the problematic event in a more positive light, of reappraising the event in order to make sense of it, and eventually feel better. In the only test of conversationally induced reappraisal theory to date, Jones and Wirtz (2006) found that disclosers of stressful events who interacted with helpful support providers generated higher numbers of positive emotion words (PEWs; e.g., happy, laugh), which predicted EI through the mechanism of CR.

Others have reported similar findings with two additional types of language. Pennebaker, Mayne, and Francis (1997) showed that the use of fewer negative emotion words (NEWs; e.g., sad, angry) and more cognitive process words (e.g., because, reason, discern, maybe) predicted health improvement. Likewise, research exploring illness-related disclosures by bloggers showed that use of insight words (e.g., understand, realize) is associated with decreased uncertainty about illness (Rains & Keating, 2015). Disclosers able to verbalize stressful events using words that connote positive emotions and sense-making should better understand that event and report increased EI compared to those who talk more negatively and with less cognitive insight. Formally, we predict that the frequency of positive (H1a) and negative (H1b) emotion words and cognitive or thinking words (H1c) influences EI after a supportive conversation through the mechanism of CR. Whereas PEWs and cognitive mechanism words (CMWs) should positively predict EI, NEWs should negatively predict EI.

Language style matching

Although how disclosers talk about stressors is an important contributor to EI, listener engagement is also paramount (Jones, 2011). Engaged listeners are attuned to the content

and underlying relational meaning of speech, responding in ways that allow the discloser to elaborate on his or her thoughts and feelings surrounding a problematic event (Bodie, Vickery, Cannava, & Jones, 2015; Burleson, 2003; Jones & Guerrero, 2001). One indicator of engagement is language style matching (LSM), defined as the synchronization of language style (Ireland & Pennebaker, 2010), or unconscious mimicry of language use by conversational partners. The tendency to mimic others is fundamental to the human condition, and research has documented this phenomenon in supportive conversation (Bodie, Cannava, Vickery, & Jones, 2016; Jones & Wirtz, 2007). Attending to linguistic mimicry patterns in a supportive communication context takes seriously the notion of interdependence in the processes of disclosing and listening to problems; listeners who match their disclosing partners' language style are actively engaged at a fundamental and structural level (see also Niederhoffer & Pennebaker, 2002). Not surprisingly, distressed others prefer interacting with engaged helpers, those who can be thought of as "good listeners," and research suggests listening and being attentive are key to the coping process (Bodie & Jones, 2012; Bodie et al., 2015; Bodie, Vickery, & Gearhart, 2013). Thus, we predict that LSM facilitates EI through CR (H2).

Relationship status

Pennebaker (2011) claimed that LSM "can illuminate our understanding of marriages, friendships, or alliances in history" (p. 218) and that "most conversations with good friends or lovers are characterized by high LSM" (p. 224). More generally, higher rates of behavioral coordination tend to covary with relational closeness, and matching during conversation is connected to outcomes such as perceived empathy (Chartrand & Bargh, 1999), bonding (Dijksterhuis, 2005), liking (Lakin & Chartrand, 2003), and affiliation (Johnston, 2002). Rose (2002) reported that engaging in co-rumination, repeatedly and extensively talking about problems, increases ratings of intimacy, and Planalp (1993) found that conversations among friends are characterized, more than among strangers, by knowledge that is personal and shared. Interaction coordination in general is linked to outcomes associated with connection; in fact, coordination decreases when people want to disaffiliate from each other (Chartrand & van Baaren, 2009). Thus, it is probable that relationship status will impact LSM. Consequently, we predict that in supportive conversation, the LSM scores of friends are higher than LSM scores for strangers (H3).

It is also possible that the impact of language on supportive outcomes differs for strangers and friends. Close relationships are characterized by a higher degree of interdependence that can influence how people jointly talk about problems (Goldsmith, 2004). In supportive conversations, each individual is not only involved in the provision or receipt of support but also is engaging in important relational and identity work. Pennebaker and colleagues' research (Ireland & Pennebaker, 2010; Pennebaker & Ireland, 2011) suggests that language should reflect this work and, consequently, that the relation between language and outcomes may well differ as a function of relationship status (RQ1).

Methods

The data used to test our hypotheses and answer our research question were gathered under the auspices of two separate studies. The first data set contains 151 stranger dyads comprised of 302 students enrolled in introductory communication studies courses at Louisiana State University and Agricultural & Mechanical College (LSU A&M). In exchange for participation, participants received a small portion of course or extra credit (3%). For 34 of these dyads, one of the participants was a confederate trained to enact certain “active listening” responses during the interaction. Demographic data were not collected from confederates. Based on voluntarily provided demographic information of the remaining participants, students were, on average, 20.5 years old ($SD = 4.29$); the majority were female ($n = 157$, 11 missing). Participants predominantly identified as Caucasian ($n = 186$, 69.4%) but also African American ($n = 41$; 15.3%), Asian American ($n = 6$; 2.2%), Hispanic American ($n = 8$; 2.98%), and other (11, 4.10%).

The second data set contains 119 friend dyads—101 friends dyads comprised of at least one student in the same courses from LSU A&M ($N = 202$) and 18 dyads recruited from communication studies courses at University of Minnesota—Twin Cities ($N = 36$). In exchange for participation, participants received a small portion of course or extra credit (3%). Based on voluntarily provided demographic information, students were on average 19.9 years old ($SD = 2.99$), and the majority were female ($n = 150$, 17 missing). Participants predominantly identified as Caucasian ($n = 151$; 63.4%) but also African American ($n = 34$; 14.3%), Asian American ($n = 15$; 6.3%), and Hispanic American ($n = 2$; 0.8%).

General procedures

Upon arrival at the laboratory for their appointments, participants were greeted by two research assistants. For the stranger interactions, research assistants confirmed the participants did not know each other. After providing written consent, the research assistants followed a script, first having participants draw slips of paper to randomly assign the conversational roles of “discloser” and “listener.” Participants were then briefly separated to complete individual measures. Listeners filled out scales not germane to the present article (e.g., Big 5 Inventory), while disclosers identified two recent emotionally distressing events and rated each on a 1 (*not at all emotionally distressing*) to 7 (*very emotionally distressing*) scale. Research assistants were trained to select primarily academic events for the impending conversation, or if no academic events were listed, the event with the comparably lower rating to align with our interest in daily life hassles. The average score for selected problems was similar in stranger ($M = 4.87$, $Mdn = 5.00$, $Mode = 5.00$, $SD = 1.25$) and friend ($M = 4.79$, $Mdn = 5.00$, $Mode = 5.00$, $SD = 1.26$) dyads, $t(267) = .49$, $p = .63$. Most problems were classified as academic performance, romantic relationship issues, friend/roommate trouble, and family illness.

Participants were reunited in the observation portion of the laboratory where one of the research assistants provided further instructions to both participants. Participants were given 1 min to engage in small talk (which was not recorded) and then engaged in a 5-min video-recorded conversation about the selected event. After this conversation,

participants were separated for a final time and completed various post-conversation measures including measures capturing the discloser's self-reported EI and CR.

Emotional improvement

Consistent with research examining effects of supportive communication on EI (Bodie et al., 2016; Jones, 2004; Jones & Wirtz, 2006; Priem & Solomon, 2015), disclosers answered 3 items from the Comforting Response Scale (Clark et al., 1998). As an appropriate operationalization of EI, all items ($\alpha_{\text{strangers}} = .82$; $\alpha_{\text{friends}} = .89$; 7-point Likert scaling) referenced the recipient's emotional state as opposed to evaluations of the helper or the message: (a) I feel better after talking with my conversational partner; (b) I feel more optimistic after talking with my conversational partner; and (c) My conversational partner made me feel better about myself.

Cognitive reappraisal

For the stranger dyads, the discloser was asked to respond to the following items developed by Jones and Wirtz (2006): (a) I understand the situation better now that I talked about it with my conversational partner; (b) I feel that I ought to re-evaluate the event; (c) Talking with my conversational partner about the event helped me get my mind off it; and (d) I don't really see the stressing situation in a different light (reverse coded). These items are adaptations from measures developed to test appraisal-based theories of emotion (Folkman & Lazarus, 1988) and were written to index the degree of reflection upon or reevaluation of a problem prompted by enacted support. The internal consistency for this scale was well below acceptable standards ($\alpha = .54$), and individual items were not highly correlated ($r_{\text{ave}} = .28$). In addition, factor loadings generated from a confirmatory factor analysis indicated three of the Items (b–d) were poor indicators of the latent construct ($\lambda \leq .33$). Given construct validity concerns, we chose to represent CR with the item "I understand the situation better now that I talked about it with my conversational partner." This item best represents the construct of primary interest. Indeed, extensive research documents the importance of understanding to the coping process (Burleson & Goldsmith, 1998; Clark, 1993), and the other items either implicated a desire to reevaluate or an attempt at cognitive diversion rather than actual cognitive change (i.e., improved understanding). In part due to problems we experienced with the scale in the stranger data, friends were only asked to respond to this one item. In both cases, reliability information is unavailable, and we acknowledge this as a limitation of our data.¹

Language use and style matching data

After all data were collected, the recorded videos were transcribed by trained undergraduate research assistants and checked by independent graduate research assistants. Most modifications were small and localized to accent differences (a subset of the transcribers was from a Midwestern state, while participants were mainly from a Southeastern state). The first author further prepared final transcripts to undergo analysis

by the Linguistic Inquiry and Word Count (LIWC; Pennebaker, Booth, & Francis, 2007) program. First, the original dyadic text was split into two files, one including the total word count per listener ($M = 229.08$, $SD = 140.1$) and one including the total word count per discloser ($M = 668.97$, $SD = 183.18$). The transcripts were then cleaned and examined for proper word use or any misspelling (e.g., changing “cuz” to “because”). Likewise, transcribed nonfluencies are not recognized by LIWC and were changed appropriately. To align with recommendations from Pennebaker (personal communication, 18 January 2013), (a) uh-uh and uh-huh were changed to “no” and “yes” and (b) “huh?” was changed to “what?”; transcribed laughter (e.g., “haha,” “LOL”) was also deleted. Also, all fillers (e.g., you know, like) were changed to comply with standard transcription preparation outlined by the LIWC manual. Finally, “xxxx” was inserted for inaudible speech.

LIWC is designed to analyze certain words in over 80 categories and to give a percentage output per category. For this study, we were interested in the language categories of PEWs (e.g., happy), NEWs (e.g., sad), and CMWs (e.g., because). In line with the original conceptualization, we calculated LSM by including nine different function word categories: auxiliary verbs (e.g., to be, to have), articles (e.g., an, the), common adverbs (e.g., hardly, often), personal pronouns (e.g., I, they, we), indefinite pronouns (e.g., it, those), prepositions (e.g., for, after, with), negations (e.g., not, never), conjunctions (e.g., and, but), and quantifiers (e.g., many, few). Each participant had an individual LSM score that was used to calculate a dyad LSM score using procedures outlined by Gonzales, Hancock, and Pennebaker (2010). Briefly, the dyad LSM score was calculated by taking the absolute value of the difference between two speakers and then dividing by the total for each category. Dyad LSM can range between 0 and 1, with scores of .60 reflecting relatively low synchrony and .85 or above representing high synchrony.

Results

With $N = 226$ and α set at .05, power for the Pearson product-moment correlation coefficient (one tailed) was .44 for small effects ($r = .10$) and above .99 for moderate ($r = .30$) and large ($r = .50$) effects. Power to detect significant mediation was .50 for small effects ($f^2 = .02$) and in excess of .99 for medium ($f^2 = .15$) and large effects ($f^2 = .35$). For regression models with dyad type, the language variables, and their interactions as predictors of EI and CR, power was .26 for a small effect ($f^2 = .02$) and above .99 for moderate ($f^2 = .15$) and large ($f^2 = .35$) effects.² Finally, power to detect significant moderated mediation was .17 for small effects ($q = .10$), .66 for medium effects ($q = .30$), and .96 for large effects ($q = .50$).

H1 predicted that the frequency of PEW (H1a), NEW (H1b), and CMW (H1c) influences EI after a supportive conversation through the mechanism of CR. H2 predicted that LSM influences EI through CR. Table 1 presents the zero-order correlations between all variables. Hypotheses were assessed using bootstrapping procedures developed by Preacher and Hayes (2008a). Bootstrapping is a resampling procedure that aims to accurately assess a sample estimator (for an introduction to bootstrapping, see Efron & Tibshirani, 1993; for an extended discussion of the relative advantages of bootstrapping procedures, see Preacher & Hayes, 2008b). The results of the bootstrapping

Table 1. Zero-order correlations for all included variables.

	1	2	3	4	5	6	7
1. Dyad type	N/A						
2. EI	.17**	5.12 (1.30)					
3. CR	.22***	.69***	4.53 (1.60)				
4. PEW	.12 ⁺	.13*	.13*	4.78 (1.99)			
5. NEW	.02	-.17**	-.10 ⁺	-.02	3.72 (1.73)		
6. CMW	.002	.06	.06	.13*	-.003	37.57 (5.55)	
7. LSM	.02	.12 ⁺	.18**	.07	.11 ⁺	-.10 ⁺	.61 (.19)

Note. For dyad type, 0 = *stranger*, 1 = *friend*. Values on diagonal are *M* (*SD*). EI = emotional improvement; CR = cognitive reappraisal; PEWs = positive emotion words; NEWs = negative emotion words; CMWs = cognitive mechanism words; LSM = language style matching; N/A = not applicable.

⁺*p* < .10; **p* < .05; ***p* < .01; ****p* < .001: all correlations two tailed.

Table 2. Coefficients and bootstrapping tests of the mediating effects of CR on the relationships between PEWs, NEWs, CMWs, LSM, and EI.

Model tested	Unstandardized coefficients					95% CI for indirect effect	
	Total effect	Direct effect	IV to MV effect	MV to DV effect	Indirect effect	Lower limit	Upper limit
IV→MV→DV							
PEW→CR→EI	.09* (.04)	0.03 (.03)	0.10* (.05)	.55*** (.04)	.06* (.03)	.01	0.11
NEW→CR→EI	-.12** (.03)	-0.07* (.03)	-0.09 (.06)*	.55*** (.04)	-.05 (.03)	-.13	0.01
CMW→CR→EI	.01 (.01)	0.004 (.01)	0.02 (.02)	.55*** (.04)	.01 (.01)	-.01	0.03
LSM→CR→EI	.79* (.42)	-0.08 (.31)	1.55*** (.51)	.55*** (.04)	.87* (.29)	.34	1.53

Note. Numbers in parentheses are estimates of standard error. CR = cognitive reappraisal; PEWs = positive emotion words; NEWs = negative emotion words; CMWs = cognitive mechanism words; LSM = language style matching; EI = emotional improvement.

p* < .05; *p* < .01; ****p* < .001.

tests evaluating H1a–c and H2 are summarized in Table 2 and indicate support for H1a and H2 but not for H1b or H1c. In particular, the indirect effect was statistically significant for the PEW–CR–EI and LSM–CR–EI models. Although NEW had a significant direct effect (negative) on EI, that effect was not mediated by CR. Finally, CMW had no direct effect on EI nor was CMW related to CR.

H3 predicted that LSM scores of friend dyads are markedly higher than LSM scores of stranger dyads. As seen in Table 3, friends and strangers had equivalent LSM scores, providing no support for H3.

Our research question asked whether the impact of language variables differs as a function of relationship type. To fully answer this question, we conducted two types of analyses. First, we estimated two hierarchical linear regression models, treating EI and CR as separate dependent variables (DVs). We entered dyad type in the first block, the

Table 3. Descriptive statistics for all language variables by dyad type.

	Strangers		Friends	
	M	SD	M	SD
EI ^a	4.93	1.35	5.37	1.20
CR ^a	4.23	1.67	4.93	1.42
PEWs ⁺	4.58	2.04	5.04	1.91
NEWs	3.69	1.68	3.75	1.80
CMWs	37.56	5.56	37.58	5.57
LSM	0.60	0.20	0.61	0.18
LSM, min	0.00		0.01	
LSM, max	0.87		0.88	

Note. CR = cognitive reappraisal; PEWs = positive emotion words; NEWs = negative emotion words; CMWs = cognitive mechanism words; LSM = language style matching; EI = emotional improvement.

^aA statistically significant difference between the two dyad types.

⁺*p* < .10: positive emotion word use approached a significant difference.

Table 4. Hierarchical regression analyses predicting EI and CR from dyad type, language use and matching variables, and interaction terms.

	EI		CR	
	ΔR2	β	ΔR2	β
Step 1	0.03**		0.05**	
Dyad type		.17**		.22***
Step 2: Language variables	0.06**		0.06**	
PEWs		.09		.08
NEWs		−.18**		−.12*
CMWs		.06		.07
LSM		.13*		.19***
Step 3: Interaction terms	0.006		0.003	
Dyad × PEW		−.05		.01
Dyad × NEW		.001		.05
Dyad × CMW		.09		.01
Dyad × LSM		.04		−.06
Total R ²	0.09		0.11	
N	269		269	

Note. For dyad type, 0 = *stranger*, 1 = *friend*. CR = cognitive reappraisal; PEWs = positive emotion words; NEWs = negative emotion words; CMWs = cognitive mechanism words; LSM = language style matching; EI = emotional improvement.

p* < .05; *p* < .01; ****p* < .001.

set of language variables in the second block, and the interaction terms representing the interaction between relationship status and each language variable in the third block.³ Table 4 presents the model statistics for the prediction of EI and CR and coefficients for individual predictors. For both models, dyad type was a significant predictor, suggesting, in line with zero-order correlations, that friends report higher levels of EI and CR after a

short supportive conversation (see Table 3 for descriptives). Also in line with other reported models, the language variables influenced CR and EI, and effect sizes were small. Adding interaction terms to the models did not improve fit nor did any interaction term achieve a conventional level of significance. Thus, language style appears to operate in a similar manner regardless of dyad type (RQ1).

Second, we tested whether the three-variable mediation models representing the relations among PEW/LSM, CR, and EI differed as a function of relationship type. There are several possible ways in which a single moderator can influence the paths defined by a three-variable mediation model (Preacher, Rucker, & Hayes, 2007): the moderator can, for instance, impact the path between (a) the independent variable and the mediator, (b) the mediator and the dependent variable, (c) the independent variable and the dependent variable, or (d) a combination of these. Seven possible models specified by Hayes (2013) are relevant for a single moderator, each of which was tested using the PROCESS macro developed for SPSS (Version 23); PEW and LSM models were tested separately.⁴ No models were indicative of a moderating effect for relationship status. Supporting the hierarchical regression analyses, it appears that language style operates in a similar manner regardless of whether an individual shares a problematic event with a friend or a stranger.

Discussion

The purpose of this article was to explore the role language plays in troubles talk among strangers and friends. Over the past three decades, work in supportive communication and EW has advanced knowledge about the role of language in the reduction of emotional distress, but this work has been principally focused on a limited class of strategic behaviors and has often utilized methods that elide interactional processes (MacGeorge et al., 2011). In particular, prior research has largely failed to address how disclosers' use of language in supportive conversations influences their own outcomes. In addition, prior research has overlooked the potential impact of subtle and dyadic behavioral features such as LSM. The current study was designed to improve our ability to explain the role of enacted support in the interpersonal emotion regulation process (see Zaki & Williams, 2013). We discuss our findings with regard to individual language use and LSM in separate sections below.

Overall language and outcome measures

The first observation from our data is that the impact of individual language variables (PEWs, NEWs, and CMWs) was relatively consistent across all analyses. In particular, emotion words (positive and negative) were consistently associated with CR and EI. Consistent with past work, these associations were small in magnitude (Jones & Wirtz, 2006; Pennebaker et al., 1997). Contrary to H1c, however, our results suggested no statistically significant relation for CMWs and outcomes. In addition, only PEWs influenced EI through CR; the indirect effect for NEWs was not statically significant.

These results are in line with Jones and Wirtz (2006) who found that the relation between positive, but not negative, emotion words and EI was mediated by CR. Although the use of NEWs was associated (negatively) with CR in the present study,

its relation to EI might be better explained through some other mechanism. Perhaps NEWs influence EI through a physiological mechanism such as lowering blood pressure or heart rate. Indeed, CR is but one among many strategies people can use to regulate emotion. Other strategies that can potentially help us better understand how supportive conversations work include distraction (Priem & Solomon, 2009) and rumination (Afifi, Afifi, Merrill, Denes, & Davis, 2013). To date, very little work has explored the role of emotion regulation strategies as they apply to interpersonal settings like conversations, though several theoretical models have been developed to help guide such work (e.g., Butler & Randall, 2013; Marroquin, 2011; Zaki & Williams, 2013).

A related explanation for the lack of mediation in the NEW model (that also may explain the small effects observed for most variables) is that in the confines of a 5-min conversation, reappraisal is constrained. Future work should be designed to gather data over longer time periods, particularly in escalating relationships (e.g., Feeney et al., 2009), to assess the changing nature of thinking about problems as a function of the sometimes dozens of conversations a dyad might have about a particular stressor. Likewise, given the almost immediate nature of the posttest, our participants may not have had sufficient ability to rethink the nature of their problems. Future work should consider the follow-up lag as an important design element. Moreover, we used a single item to measure CR and thus did not fully capture the construct. More work is needed to develop a reliable metric of CR appropriate for research on supportive conversations.

Our finding that CMWs did not predict improvement after a supportive conversation seems to go against multiple other studies. For example, the increase in CMWs on the last day over 3–5 days of EW is linked to greater physical health outcomes (Pennebaker et al., 1997), and people who increased the number of CMWs over the course of a 4-month EW period showed a significant decrease in anxiety (Alparone, Pagliaro, & Rizzo, 2015). Also, Boals and Klein (2005) showed that people used more CMWs during breakup talk (the most stressful description) rather than the pre-breakup description. As these examples illustrate, the majority of studies finding significant results for CMWs had participants write over multiple occasions. Perhaps, then, it is necessary to observe multiple conversations about the same event and track the use of CMWs over time. Relational partners of various types are likely to talk about stressors on a daily or weekly basis, and problematic appraisals of events may not shift immediately. Thus, future work should be designed to ensure adequate variability in the ability to reappraise, brood, or otherwise think differently about a recently discussed problem. MacGeorge (2009) outlined theoretical reasons to expect differences in short- and long-term impacts of characteristics of supportive talk on outcomes that can guide such work.

Dyadic coordination of language

Instead of focusing exclusively on the language of a discloser, this research extended the focus to dyadic language. Because individuals are participating in a conversation rather than writing alone, we additionally predicted that LSM scores are related to EI and CR.

Past work has shown that LSM is a linguistic marker of engagement and attention (Ireland & Pennebaker, 2010), and other work has found emotional benefits of interacting with an engaged listener (Bodie et al., 2013; Bodie & Jones, 2012; Bodie et al., 2015). In line with this logic, our results showed LSM is not only a positive predictor of CR and EI, but, in line with H2, that the relation between LSM and EI is fully mediated by CR.

The matching of function words between speakers likely has a pragmatic function in supportive conversations. Function words are words that have little meaning outside of the context in which they are used. Words like “it,” “that,” “his,” “this,” and “her” all need some concrete noun to use as a reference. When telling a story for example, a speaker might first introduce a character as Alexandria; as the story goes on, the speaker and the listener can actively refer to Alexandria as “her” or “she.” Function words theoretically help keep track of the mutual knowledge shared between speakers so that each person understands what the other is referencing.

In the context of the matching of function words predicting positive supportive outcomes, mutual knowledge seems an important factor in being a good listener. If a listener starts to use function words, this could show that she is involved and paying attention by being able to explicitly reference the specifics of a story. This baseline of understanding can then allow for more sophisticated cognitive processes, such as CR. If a listener can first understand a story, she can then start to challenge the narrative and present alternative explanations or questions to a speaker; the conclusions from the challenged narrative might, in turn, help the discloser cope appropriately because they present the story in a new light—that is, they help to form a reappraisal of the event.

The role of relationship status

The third contribution of this study is to investigate whether relational status influences how people talk about problems. Based on past work, we speculated that friends and strangers would match at different rates. We also asked whether the impact of language style and matching varied as a function of relationship status. Descriptive data presented in Table 3 suggest friends and strangers are quite similar with respect to language use. In addition, and contrary to H3, LSM values are nearly identical (in terms of central tendency and variability). This latter finding is inconsistent with claims that LSM signals relational intimacy, stability, and involvement (Ireland & Pennebaker, 2010; Ireland et al., 2011). We did not obtain reports of relationship satisfaction or intimacy in these data, and so it is possible that within our “friends” sample, participant perceptions of their relationships influenced LSM in ways we did not detect. However, in our data, people did not match very much at all. Using Pennebaker’s criterion of .85 for high matching, only 4.4% of our dyads ($n = 12$) met that mark. Most dyads clustered around .60, and 42.2% of the cases were below this level. Neither Babcock, Ta, and Ickes (2014) nor Ireland (Ireland & Pennebaker, 2010; Ireland et al., 2011) reported descriptives for LSM, so we do not know whether our data are (in)consistent with other reports.

Our findings cohere with other research suggesting that the association between relational characteristics and LSM is complex. Babcock et al. (2014) reported that LSM was the highest in conversations in which individuals were disinclined to interact with

each other. Correspondingly, these authors suggested that LSM actually might be higher in conversations involving greater expression of emotional states; when people are expressing intense emotions, their partners may automatically match their language. Our findings are inconsistent with this interpretation, although the stressors identified and discussed by participants were relatively mild in nature. As a result, neither disclosers nor listeners may have experienced emotions intense enough to initiate high levels of LSM.

The lack of difference (statistical or meaningful) in LSM scores between friends and strangers seems to suggest that relationship status does not have a significant impact on the ways individuals talk about problems. Moreover, the results from the hierarchical regression analyses and moderated mediation analyses seem to suggest that language operates in supportive conversations in similar ways regardless of relationship type (RQ1). Importantly, the moderated mediation analyses showed that the mechanism for support, CR, is the same for at least two types of relationships and two language variables (PEWs and LSM). Underlying theoretical mechanisms are supposed to be universal, and our results suggest that investigating the nature of CR in supportive conversations is a fruitful line of future inquiry.

Our results did, however, suggest that relational history, irrespective of language variables, was a significant predictor of EI and CR (see Table 3); that is, friends seem to experience a larger benefit from the supportive interaction than strangers, a finding perhaps indicating that participants felt less comfortable discussing sensitive issues with strangers than they did with friends. But language does not appear to differentially impact outcomes for strangers or friends. What we see happening is that both the discloser's use of language and the action of matching language is important for support, and this is true irrespective of relationship status.

Limitations

Although our study extends work on supportive communication in important ways, there are limitations that contextualize our conclusions. First, these conversations were conducted in a laboratory setting. Participants were assigned particular roles in this space (either a discloser or listener), and each conversation was only allowed to occur for 5 min. Researcher-controlled spaces always pose the risk of constricting the naturalness of a conversation, but naturally occurring supportive interactions are difficult to access making the lab a reasonable proxy. Second, our language variables were all calculated based on frequency outside of the larger conversational context. Because LIWC only maps the presence and frequency of particular words, it ignores how those words are actually being used and what relational and identity messages are being communicated with particular forms of language (Tausczik & Pennebaker, 2010). Without understanding the contextual meaning of a message, certain words might be functioning differently in different spaces (Goldhamer, 1969; McTavish & Pirro, 1990). Third, our data come from college students, and thus most of the problems reported were primarily academic and other similar everyday stressors perhaps unique to this population. The population and the nature of the stressors may or may not generalize to other populations of people, relationships, or problems.

All of the limitations specified above represent ecological validity concerns in regards to using these data. A second set of limitations concerns the causal nature of language use and reports of thinking and feeling about problems. Currently, researchers typically view the expression of language as a reflection of emotional states (Kahn, Tobin, Massey, & Anderson, 2007; Slatcher, Vazire, & Pennebaker, 2008). Many studies have sought to represent and examine how language use demonstrates thinking, feeling, and organizing of a self (Pennebaker, 2011). Although we agree that language does reflect feelings, this study operated under the assumption that language *does* something, that perhaps, language can only partially reflect our feelings and, on the other hand, partially influence or cause a change in our thinking. Language is a tool that helps us accomplish our goals and to perform conversational actions. In a study of parents talking about the death of their child, for instance, Eggly et al. (2015) reported a negative correlation between parent PEW use and self-reported emotion after the conversation, then argued parents were operating under the adage “Fake it until you make it.” Parents, although feeling poorly about a situation, increased their PEWs in the appearance and performance of wanting to feel positively about a negative evaluation of a negative event. This study and others (e.g., Hexem, Miller, Carroll, Faerber, & Feudtner, 2013), although aimed at identifying emotional reflection through language, highlight the misleading nature of language use. Importantly, future research should begin to disentangle the causal structure of language use, matching, and the coping that is vital to people’s ability to recover after experiencing a stressful event.

Finally, we acknowledge that this study does not address the actual process of matching and advocate for future research more directly focused on this phenomenon. As of right now, LSM is a general equation that only takes into account the overall frequency of word categories; thus, we do not see the genesis of language production and subsequently “language matching.” In other words, we should take into consideration who is responsible for matching and where certain words first appear in a conversation. Some prior research has begun to address this concern. For example, Jones and Wirtz (2006) found that PEWs generated by the discloser were predicted by the degree to which listeners generated supportive messages that were more person-centered or explicitly acknowledged and legitimized how the discloser was thinking and feeling about the problem (see Jones & Bodie, 2014). But even in their study, all measures were treated as aggregate phenomena rather than on a turn-by-turn or more nuanced level. A plausible causal path begins with a supportive listener’s use of language that influences a discloser’s feeling and thinking; in other words, listeners who start the conversation with a mindset of finding the positive in the situation and who subsequently generate language to reflect such positivity (or at least to refrain from using NEWs) are more likely to influence the language choices of disclosers away from NEWs and to help facilitate the reappraisal process (see Burleson & Goldsmith, 1998). This path is motivated by a recent study we published using these same data sets that explored matching of nonverbal immediacy behaviors (Bodie et al., 2016). Findings from this study showed that listener nonverbal immediacy (NVI) behavior during the beginning of a conversation was positively correlated with the NVI behavior and the subsequent EI of a discloser at the end of a conversation. The model from discloser to listener NVI was not supported. How matching occurs in supportive talk and which patterns of matching are more predictive of outcomes like coping and reappraisal is important to address.

Conclusion

In general, this article contributes to our understanding of how the comforting process works. In particular, we extend the focus of supportive communication scholarship to the language use of a distressed discloser and the coordinated actions of a supportive listener. Since support is a social process, the examination of conversations and the patterns of coordination within them allow researchers to make nuanced observations regarding relationships and individual outcomes. To date, the majority of work on supportive communication has relied on hypothetical scenarios and researcher-generated messages, design choices that have made important advances to our knowledge but which also strip enacted support from its conversational context. Future work should continue to take the dyadic nature of supportive communication seriously by focusing on how language is used and matched throughout supportive conversations. We anticipate that such work will illuminate how language can be used to encourage CR and ultimately improve the lives of distressed others.

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Notes

1. We ran all analyses with the multi-item CR scale and the single-item scale. No results changed as a function of the number of items representing CR.
2. The power analysis reported is for the overall model. Similar values were found when we ran the power analysis for increase in R^2 . As with all analyses, this one was underpowered to detect small effects.
3. We additionally ran a two-level hierarchical regression model with language style variables in the first block and the interaction terms in the second block. Results for these models mirror those of the three-level analysis suggesting that controlling for dyad type does not inhibit the interaction terms from capturing variability in the DVs.
4. Those models are 5, 7, 8, 14, 15, 58, and 59. An additional model, 74, was also tested; this model specifies that the independent variable (IV) can also act to moderate the relationship between the moderator variable (MV) and dependent variable (DV) (see also MacKinnon, 2008, p. 61). The model templates can be found here: <http://www.afhayes.com/public/templates.pdf>. All results are available upon request.

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