Am "I" more important than "we"? Couples' word use in instant messages

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Abstract

Recent studies have identified robust associations between the types of words that people use and their psychological health. This study investigated whether couples' word use in their daily instant messages (IMs) is linked to the quality and stability of their relationships. Sixty-eight dating couples in the United States submitted 10 days of IM conversations with each other, which were analyzed with a linguistic word count program. Six months later, couples indicated whether they were still dating. Pronoun use and emotion word use both were associated with relationship satisfaction and stability. These findings extend previous research showing that the frequencies of certain words that people use are associated with the quality of their social relationships.

The words that people use in conversation convey information about who they are, their motives, their audience, and their situations. Over the past decade, researchers have shown that specific words used in spoken and written communication are linked with, for example, cognitive functioning (Lee, Park, & Seo, 2006), social connectedness (Burke & Dollinger, 2005), team performance (Fischer, McDonnell, & Orasanu, 2007), perceptions of political candidates (Slatcher, Chung, Pennebaker, & Stone, 2007), personality judgments (Mehl, Gosling, & Pennebaker, 2006; Pennebaker & King, 1999), and emotional expressiveness (Kahn, Tobin, Massey, & Anderson, 2007). In the context of intimate relationships, laboratory studies suggest that the words that couples use may yield clues about the quality of their relationships (Sillars, Shellen, McIntosh, & Pomegranate, 1997; Simmons, Gordon, & Chambless, 2005; Williams, Atkins, & Christensen, 2007).

Language may serve a variety of functions in relationships. It can be an index of relationship status, an instrument of relationship maintenance or change, or the embodiment of essential relationship characteristics such as intimacy and interdependence (Duck, Pond, & Hendrick, 1989; Sillars et al., 1997; Wilmot & Shellen, 1990). Some have gone as far as saying that relationships are simply language games, which change as language changes (Bradac, 1983). In this view, a couple's language is the relationship. Nonetheless, theorists in this area more often view language patterns and relationship beliefs as distinct phenomena that are intimately associated—seeing relationships as both residue of previous language patterns and

a framework for future ones (Sillars et al., 1997; Wilmot & Shellen, 1990).

It remains unclear to what extent couples' typical, everyday language use is relevant to relationship functioning. With this article, we seek to advance the study of language use in relationships by investigating how the words that couples use in everyday life are linked to relationship satisfaction and stability. We begin by first describing common methods of assessing language use and the linguistic features that are relevant to intimate relationships. We then describe the use of instant messaging as a method for collecting online naturalistic language data from couples. Next, we present hypotheses linking couples' everyday language use to the satisfaction and stability of their relationships. Finally, we present findings from an empirical study designed to test our hypotheses.

Linguistic features relevant to intimate relationships

In recent years, researchers have made important strides in both the quantitative assessment of couples' language use and the identification of classes of words that are relevant to relationships. Computer programs that examine the relative frequency of words in a given text or speech sample are commonly used by behavioral scientists to assess language patterns in relationships. Although they sometimes require rather complex analyses (e.g., active vs. passive voice or metaphoric language use), most current social psychological approaches to linguistic analysis involve word counts. One of the most often-employed word count programs is Linguistic Inquiry and Word Count (LIWC; Pennebaker, Francis, & Booth, 2001). LIWC works by searching for over 2,300 of the most common words and word stems within a given text file, categorizing them into over 70 linguistic dimensions. These dimensions include standard language categories (e.g., articles, prepositions, pronouns), psychological processes (e.g., positive and negative emotion words), and traditional content dimensions (e.g., sex, death, home, occupation). Since LIWC's initial validation, multiple studies have provided compelling

evidence of the social and psychological importance of word use (for a review, see Pennebaker, Mehl, & Niederhoffer, 2003). Of particular relevance for intimate relationships are personal pronouns and emotion words. We describe these two broad language categories and their significance for relationships in turn below.

Personal pronouns. Much of the interest in the role of language in relationships has focused on pronouns, in particular first-person plural or "we" words ("we," "us," and "our") because they appear to be markers of shared identity, affiliative motivation, and interdependence. For instance, studies show that people increase their use of first-person plural pronouns after a large-scale collective trauma (Stone & Pennebaker, 2002) or after a home football team victory (Cialdini et al., 1976). Highly committed partners use "we" pronouns more frequently when writing about their romantic relationships compared to less committed ones (Agnew, Van Lange, Rusbult, & Langston, 1998). Nonetheless, in the small handful of published studies that have examined language use during interactions between romantic partners, the use of "we" surprisingly showed no association with relationship satisfaction (Sillars et al., 1997; Simmons et al., 2005) and only a marginal association with relational interdependence (Knobloch & Solomon, 2003).

Second-person pronouns ("you" and "your") may be indicative of other-focused attention. High self-monitors—who by definition are other-focused—use "you" at a higher rate than low self-monitors (Ickes, Reidhead, & Patterson, 1986), and individuals high in trait anger use "you" at a higher rate than those low in trait anger (Weintraub, 1981). With regard to romantic relationships, "you" usage during problem-solving discussions is negatively correlated with relationship satisfaction (Sillars et al., 1997) and positively correlated with negative relationship behaviors (Simmons et al., 2005).

Clinical researchers have argued that "you" statements are indicative of blaming or psychological distancing, whereas "I" statements are indicative of healthy communication

patterns, such as self-disclosure and verbal immediacy (Hahlweg et al., 1984; Rankin-Esquer, Burnett, Baucom, & Epstein, 1997; Williams et al., 2007). Sillars and colleagues (1997) found that couples who used fewer first-person singular pronouns (including "I" as well as "me") were happier in their relationships compared to those who used them at higher rates. In examining the differential effects of the active "I" versus the passive "me," however, Simmons and colleagues (2005) found "I" to be marginally positively associated with relationship satisfaction and "me" to be positively associated with negative behaviors during problem discussions. The authors reasoned that use of "I" reflects self-disclosure and perspective taking, while use of "me" reflects passive strivings or victimization narratives that are characteristic of poor-quality interactions and less satisfying relationships.

Emotion words. The other broad category of words with presumed links to relationship quality is emotion words. In everyday life, when we want to know how a person is feeling, we usually just ask them. The specific words that they use to respond—words such as "happy," "sad," "angry," and "nervous"—often indicate their emotional state. In a construct validation study (Kahn et al., 2007), the results from three experiments showed LIWC-measured emotion word use to be highly positively correlated with both self-reported and behavioral measures of emotion. These findings suggest that emotion words accurately reflect people's emotional states.

Emotions play a key role in romantic relationships. Gottman and others (Gottman, 1994; Gottman, Coan, Carrere, & Swanson, 1998; Gottman, Driver, Tabares, Gurman, & Jacobson, 2002; Heyman, 2001) have shown that couples' increased expressions of positive emotions and decreased expressions of negative emotions during problem-solving tasks are positively related to relationship satisfaction and stability. Marital therapy often incorporates emotional expression as an outcome variable or something requiring heightened awareness by couples. For example, increasing

positive emotions and reducing negative emotions during marital therapy lead to decreases in maladaptive functioning (Epstein & Baucom, 2002; Tashiro & Frazier, 2007). It is unclear, however, to what extent the specific words themselves that couples use to express emotions are directly linked with relationship functioning.

Although one would expect greater use of positive emotion words and lower use of negative emotion words to be related to relationship quality, there are a number of contextual issues to consider first. The first issue relates to the person to whom emotion words are directed (e.g., "I am so angry with Sally" vs. "I am so angry with you"). Word count programs are unable to differentiate between these contexts without first hand-coding transcripts prior to linguistic analysis. The second issue relates to when a negation precedes an emotion word (e.g., "I am not mad at you" vs. "I am mad at you"). Although studies show that variations in emotion word use are positively associated with variations in trait-level emotional expressivity even when not taking negations into account (Kahn et al., 2007; Pennebaker & King, 1999), separating emotion words into separate categories based on co-occurrences with negations would be useful in elucidating associations between emotion word use and relationship quality. The third issue relates to sarcasm (e.g., "oh great"). Word count approaches are unable to distinguish between emotion words used to express genuine emotion from those laced with sarcasm. Because people can use both positive and negative emotion words sarcastically (e.g., "oh great" and "You have a 93 average. Yeah, you're really doing terribly in that class," respectively), we use the term *positive sarcasm* here to refer to positive emotion words that people use sarcastically, and, similarly, use *negative sarcasm* to refer to negative emotion words used sarcastically. In the discourse literature, positive sarcasm often refers to sarcasm that people intend to be playful banter and not hurtful to the listener (Slugoski & Turnbull, 1988). Here, positive sarcasm simply denotes positive emotion words used in a sarcastic and hurtful manner, thus differentiating positive emotion words

used to express genuine positive emotions from those which, in context, actually express negative emotions. By first identifying when couples use emotion words and then coding them for relational context, co-occurrences with negations and sarcasm, we may gain a clearer picture of the relevance of emotion words for relationships.

Instant messaging as a source of language data

There are a number of sources of language data from couples. Previous researchers have assessed word use during laboratory problem-solving discussions, but there are a wide variety of contexts in which researchers can assess word use during couples' interactions. These include other types of laboratory interactions such as those geared toward eliciting social support, naturalistic conversations recorded at home, phone calls, and e-mails. One relatively new technology—instant messaging (IM)—may have promise for assessing couples' everyday language use. For 53 million American adults, including 30% of all Internet users over the age of 40, IM is quickly becoming a preferred mode of online communication, particularly in the context of intimate relationships (Shiu & Lenhart, 2004). Unlike e-mail, IM allows its users to chat with each other in real time so that a conversation can unfold much in the same way that spoken conversation does. Some have argued that IM allows individuals to better express their true selves (Bargh, McKenna, & Fitzsimons, 2002; Turkle, 1995) and also facilitates emotional expression (Joinson, 2001) in comparison with spoken communication. Walther (1996) has proposed that social interaction using computer-mediated communication is often more intimate than face to face—a phenomenon he termed *hyperpersonal* interaction. Indeed, experimental evidence has shown that people are more self-disclosing online than they are in face-to-face conversations (Joinson, 2001). Central to explanations of why computer-mediated communication can be highly emotionally expressive is that it offers visual and vocal anonymity compared to face-to-face communication (Walther, 1996).

IM allows researchers to subtly and unobtrusively study close relationships in naturalistic settings, complementing existing methods such as daily diaries (Bolger, Davis, & Rafaeli, 2003; Drigotas, Whitney, & Rusbult, 1995; Nezlek, 2003; Reis, 1994). IM conversations can be windows into people's private worlds and allow researchers to examine word use—across conflicts as well as more positive moments—as it naturally occurs. A unique feature of IM is that it provides the opportunity to examine associations between word use and relationship quality in the absence of most traditional nonverbal cues (e.g., eye gaze, body posture, nodding). Although there are some nonverbal features in IMs (e.g., emoticons), couple members base the attributions that they make about each other in their IMs predominantly on the words that they use.

In the present study, we investigated how couples' language use in their daily IM conversations is associated with relationship satisfaction and stability. We collected transcripts of couples' IMs over 10 days, hand-coded them to address contextual issues of word use, and then analyzed them using LIWC. We conducted dyadic analyses (Kenny & Cook, 1999; Kenny & Kashy, 1991) to assess actor and partner effects of word use on relationship satisfaction; we conducted regression analyses to assess associations between word use and relationship stability at a 6-month follow-up.

Based on previous findings, we hypothesized that active first-person singular pronouns ("I") would positively relate to satisfaction and stability, whereas passive first-person singular pronouns ("me") and second-person pronouns ("you") would negatively relate to satisfaction and stability. Because of inconsistent findings regarding the association between first-person plural pronouns ("we," "us," and "our") and relationship satisfaction, we made no specific predictions about this category of pronouns. Second, we hypothesized that positive emotion words (e.g., "happy," "nice," "love") and negative negations (e.g., "not upset," "not angry") would positively relate to relationship satisfaction and stability, whereas negative emotion words (e.g., "upset," "angry"), positive negations

(e.g., "not happy," "not nice"), positive sarcasm (e.g., "oh great"), and negative sarcasm ("You have a 93 average. Yeah, you're really doing terribly in that class") would negatively relate to satisfaction and stability.

Method

Participants

Archived transcripts of IM conversations between dating partners provided our data (Slatcher & Pennebaker, 2006). The project was conducted at the University of Texas at Austin—a major U.S. research institution with an enrollment of over 50,000 students (4% African American, 1% Native American, 18% Asian/Pacific Islander, 58% Caucasian, and 19% Hispanic). We recruited undergraduate couples through an online computer sign-up system on the basis that they: (a) were in a heterosexual romantic relationship and had been dating their partner for at least 6 months and (b) that they normally IMed with each other every day. Because no sampling framework was available for this sign-up system, we used a convenience sample. Sixty-eight couples (136 participants: 68 women and 68 men; mean age $=19.04$, $SD = 1.39$) participated in the study in exchange for course credit. Couples had been dating an average of 1.44 years ($SD = 1.25$, range $= 0.50$ years to 9.25 years); none were cohabiting.

Measures

We obtained self-reports of romantic relationship satisfaction using the Relationship Assessment Scale (RAS; Hendrick, 1988). The RAS is a validated measure of relationship satisfaction that correlates strongly with measures of love, commitment, investment, and dyadic adjustment. The self-report RAS consists of seven items on a 7-point Likert scale such as, "In general, how satisfied are you with your relationship?" Although each item of the RAS has a different scale anchor, higher overall scores on the RAS are indicative of higher levels of satisfaction (1 = *extremely unsatisfied*, 7 = *extremely satisfied*). Alpha reliability for the current sample was .79.

Procedure

During an introductory session, couples provided informed consent and the experimenter instructed them to forward their daily IMs with each other for 10 days to a secure e-mail address. The experimenter made concerted efforts during the introductory session to ensure that participants and their partners felt at ease about forwarding their IMs and to reassure couples that no one outside of our research team would have access to their IMs without their explicit permission. The experimenter also strongly encouraged couples to contact the first author if they had any concerns about the study. Upon receipt by the experimenter, all IMs were saved as text files in a password-protected secure location accessible only to the experimenter and all personally identifiable information was removed. The mean length of couples' IM conversations over the 10 days of monitoring was 2,243 words ($SD = 2,129$). Both members of each couple completed the self-report questionnaires (the RAS and basic demographic information) online from home after the introductory session with the experimenter on Day 1 of the study; during the introductory session, the experimenter emphasized the importance of completing these questionnaires privately and confidentially. After the 10 days of IM monitoring, couples completed additional consent forms to indicate whether the study authors could use their IMs could for educational purposes or in academic publications (under the condition of having all identifying information removed). Six months later, we contacted the couples via e-mail to determine whether or not they were still dating.

Contextual coding of IMs

After initial spellchecking by the first author, trained research assistants hand-coded IMs for contextual information to increase the precision of subsequent linguistic analyses. When a person uses "I," "me," or "you" in their IMs with their partners they are clearly referring to themselves or their partner, respectively. When they use "we," "us," or "our," however, the people to whom they are referring is less

obvious. For example, "we" might refer to the speaker and her romantic partner (e.g., "What should we do tonight?") or it could refer to the speaker and her family (e.g. "We're all going to my parents' house for the holidays this year") or to other groups of people. Similarly, when couple members use an emotion word, they could be directing it toward one's partner (e.g., "I love you"), toward other people (e.g., "I love my parents"), or elsewhere (e.g., "I love pizza"). In addition, even when directed toward one's partner, emotion words can have very different meanings when preceded by negations (e.g., "not great") or when used sarcastically (e.g., "oh, great").

To address these issues prior to linguistic analyses, we created a macro in Microsoft Word (Microsoft Corp., Redmond, Washington) to search for and highlight all instances of first-person plural words and emotion words in IMs. A team of three undergraduate research assistants then read through the IMs and coded them for relationship "we" instances and for the different types of emotion word instances described above; a single research assistant coded each couple's IMs. Prior to coding, research assistants went through four 2-hr training sessions with the first author as a group to discuss how to effectively identify contextual cues, with special attention focusing on sarcasm because of the difficulty that people often have in judging sarcastic statements (Hancock, 2004; Kreuz, 2000; McDonald & Pearce, 1996; Uchiyama et al., 2006). We provided research assistants with multiple examples of sarcastic statements—half of the examples containing positive emotion words, the other half containing negative emotion words. We also gave them clear descriptions of cues to sarcasm often found in computer-mediated communication (Hancock, 2004). These cues include amplifiers, ellipsis, punctuation (e.g., "!!!" or "*awesome*"), emoticons (e.g., ":)") and adapted vocalizational signals (e.g., "haha" and "mmmmmhhhhhmmmm").

After the training sessions, each research assistant independently coded IMs from three couples randomly selected from the data set for the purpose of assessing interobserver agreement. Following the coding of each couples' IMs, the group met to discuss and resolve any discrepancies in coding. Interobserver agreement across the text samples from the three sample couples were excellent, with intraclass correlation coefficients (ICC[2,K]) of .97, .87, .86, .80, and .80 for first-person plural, positive emotion, negative emotion, positive negation, and negative negation words, respectively. Interobserver agreement for positive sarcasm and negative sarcasm was substantially lower, with ICCs (2,K) of .48 and .40, respectively. This is in line with previous research, which has found the detection of sarcasm to be an especially difficult task for coders, particularly in the context of computer-mediated communication (Hancock, 2004).

Linguistic analyses

We then separated IMs by speaker into individual text files and processed them with the LIWC (Pennebaker et al., 2001). As described previously, LIWC is a computerized text analysis program that categorizes and quantifies word use. It counts the percentage of a text sample's words that fall into a given predefined or user-defined category. Because we present LIWC results in terms of percentages rather than as raw counts, one can compare texts samples against each another, even if the length of each sample varies. There are currently 70 user-defined linguistic categories in LIWC, including articles, prepositions, pronouns, emotion words, and specific content words such as school and work. Analyses focused only on those linguistic categories of theoretical relevance to relationship interactions. These categories included active first-person singular pronouns ("I"), passive first-person singular pronouns ("me"), second-person pronouns ("you"), first-person plural pronouns ("we," "us," and "our"), positive emotion words (e.g., "happy," "nice," "love"), negative emotion words (e.g., "upset," "angry"), positive negations (e.g., "not happy," "not nice"), negative negations (e.g., "not upset," "not angry"), positive sarcasm (e.g., "oh great"), and negative sarcasm ("You have a 93 average. Yeah, you're really doing terribly in that class"). All "we" analyses focused only on instances of "we" referring specifically to the speaker and his or her romantic partner; all emotion word analyses, including negations and

sarcasm, focused only on emotion words directed specifically toward romantic partners.

Results

Descriptive statistics

Relationship satisfaction and stability. Mean relationship satisfaction at the outset of the study was 6.08 (*SD* = 0.69) for men and 6.00 (*SD* = 0.80) for women on a scale of 1–7 (1 = *highly unsatisfied*, 7 = *highly satisfied*). Of the original 68 couples who participated in the study, 64 (94%) responded to the 6-month follow-up inquiry about current relationship status. Of those who responded, 39 (61%) were still dating and 25 (39%) had broken up.

Language use in IMs. See Table 1 for the means and standard deviations from linguistic analyses of IMs. There were no significant differences between men and women for any of the linguistic categories. Among pronouns, couples used "I" with the greatest frequency,

followed by "you." Couples used "me" and "we" far less frequently; they used "I" almost 20 times as often as they used "we." Of the emotion words, participants used the positive ones most frequently. In line with previous investigations of emotion word use (Kahn et al., 2007; Pennebaker et al., 2003), couples used positive emotion words more often than negative emotion words. Couples used emotion words sarcastically and ones preceded by negations much less frequently than genuinely expressed emotion words.

Intercorrelations among linguistic categories

As shown in Table 2, the linguistic categories, for the most part, only modestly correlated with each other. Among pronouns, "me" and "you" positively correlated with each other for both men and women; there were no other significant correlations between pronouns. There were stronger associations between emotion word categories; for example, negative

Table 1. *Language use in IMs—Descriptive statistics*

Linguistic category	Males		Females	
	M	*SD*	*M*	*SD*
Pronouns				
We	0.32	0.42	0.33	0.31
I	6.26	1.14	6.24	1.29
Me	0.98	0.42	1.11	0.45
You	4.19	1.24	4.45	1.58
Emotion words				
Positive emotions (e.g., "happy," "nice")	1.61	1.23	1.75	1.46
Negative emotions (e.g., "upset," "angry")	0.67	0.51	0.58	0.44
Positive negations (e.g., "not happy," "not nice")	0.09	0.16	0.06	0.08
Negative negations (e.g., "not upset," "not angry")	0.10	0.10	0.08	0.10
Positive sarcasm (e.g., "oh, great")	0.15	0.19	0.12	0.15
Negative sarcasm (e.g., "You have a 93 average!! Yeah, you're really doing terribly in that class.")	0.15	0.24	0.14	0.19

*Note. N*s = 68 males and 68 females. All means are expressed as percentages of total words within the instant messages.

Table 2. *Intercorrelations among linguistic categories*

Linguistic category	We	I	Me	You	Positive emotions	Negative emotions	Positive Negations	Negative negations	Positive sarcasm	Negative sarcasm
We	—	.11	−.23	−.20	−.02	−.14	−.06	−.17	.20	.04
I	−.10	—	.07	−.02	.00	.13	.08	−.04	.00	−.05
Me	.17	.17	—	.34**	−.17	.12	−.13	.16	.00	−.10
You	.12	−.06	.33*	—	.00	.32**	.38**	.18	.21	.32**
Positive emotions	−.09	.08	−.15	.16	—	.29*	−.22	−.03	−.14	−.13
Negative emotions	.16	.13	.40**	.48**	−.05	—	.03	.17	−.10	.06
Positive negations	.07	−.01	.47**	.13	−.21	.30*	—	.08	.38**	.52**
Negative negations	−.09	.17	.15	.06	−.05	.16	.06	—	−.23	.05
Positive sarcasm	−.12	−.28*	.05	.15	−.20	.14	.19	.20	—	.65**
Negative sarcasm	−.03	−.23	−.01	−.05	.16	.13	.31*	−.08	.18	—

Note. $N = 136$ (68 males and 68 females). Intercorrelations are above the diagonal for males and below the diagonal for females.
*$p < .05$. **$p < .01$.

sarcasm strongly positively correlated with positive sarcasm for men and negative sarcasm strongly positively correlated with positive negations for men and women. There also were relatively strong associations between some of the emotion word and pronoun categories; for example, "you" positively correlated with negative emotion words for men and women, and, among men, "you" positively correlated with positive negations.

Content of couples' IMs

It is difficult to convey with statistical analyses the wide variety of topics discussed and the often deeply personal nature of couples' IMs. Couples talked about daily events, bantered with each other, gossiped, and had moments of affection as well as conflicts. See Table 3 for examples of excerpts from IMs of two different couples in this study, with identifying information removed to protect participants' privacy. On the left (Couple 1) is an IM excerpt from a highly satisfied couple in a long-distance relationship; on the right (Couple 2) is an IM excerpt from a relatively dissatisfied couple having an argument. Note, for example, the differences in emotion word use in the two IMs. Both IMs contain a fair number of negative emotion words; however, while Couple 1 uses a relatively high number of positive emotion words, Couple 2 uses none. Although these examples represent only brief snippets of two couples' IMs, they hopefully provide the reader with a sense of how couples communicate in their IMs and their variations in word use. Below, we describe and present analyses examining associations between word use and relationship satisfaction and stability.

Overview of data analytic strategy—The actor–partner interdependence model

A unique characteristic of dyadic data is that the data from two couple members are not independent. For example, people who are satisfied in their romantic relationship tend to have romantic partners who also are satisfied; people who are optimistic tend to have optimistic romantic partners, and so on. To account for this interdependence in statistical

analyses, relationship researchers in recent years have begun to frame their analyses in the actor–partner interdependence model (APIM; Kashy & Kenny, 2000; Kenny, 1996).

The APIM is a technique designed to address interdependence in dyadic analysis. This technique allows researchers to estimate, for example, the influence of one person's behavior (e.g., the words they use) on her own relationship satisfaction—called *actor* effects—as well as the effects of her behavior on her partner's relationship satisfaction—called *partner* effects. We illustrate this basic APIM design in Figure 1. Estimation of actor and partner effects can conveniently be accomplished using structural equation modeling (SEM) and other commonly used statistical methods.

We conducted APIM analyses using SEM for each linguistic category to examine associations between word use and relationship satisfaction. Because all of our dyads are heterosexual dating couples, we distinguished the members of the dyads based on gender. The basic APIM model is just identified or saturated (for illustrative examples, see Kashy & Kenny, 2000; Kenny & Acitelli, 2001). As such, it has 0 *df* and model fit cannot be examined (see Kline, 2005, or Byrne, 2001, for a full explanation of identification within structural equation modeling).

We conducted linear regression analyses to examine associations between word use and relationship stability (dummy coded 0 = *broken up*, 1 = *still dating*) at the 6-month follow-up, with men's and women's word use entered simultaneously in each regression. In these analyses, the couple was the unit of analysis.

Associations between word use, relationship satisfaction, and relationship stability

Pronouns. As shown in Table 4, use of "we" was unrelated to either relationship satisfaction or relationship stability. Women's use of "I" was positively related to their own satisfaction, their partners' satisfaction, and relationship stability. Men's use of "me" was marginally negatively related to their partners' satisfaction. Men's use of "you" was marginally negatively related to their own satisfaction.

Table 3. *Examples of IM conversations*

Couple 1	Couple 2
HER: I have **missed** you before…and I'm such an independent person that I'll **miss** you, but be **fine** or be able to go long periods without it getting to me…but for some reason, today, I've just **missed** you so much that I feel like I'm going nuts!	HER: you know I don't like to **fight**
	HER: why are you being so **testy** tonight?
	HIM: I'm just **tired**
	HER: maybe you should come over…so we can work things out
HER: I'm **glad** I can at least talk to you now, but I want to see you so badly	HIM: Not tonight ok
	HER: well, maybe you should just work on your paper then
HER: I **hate** being apart from you	HIM: now, don't get **upset**
HIM: ☺	HIM: you know how hrad I work
HIM: I wish there was a heart-melting smiley…	HIM: hard
	HIM: I'm just **tired**
HIM: I **love** you	HER: explain doesn't have and e at the end
HER: Seriously though…I''ve always been the type of girl that I could go long periods of time and it wouldn't be that I wouldn't be that I wouldn't think about you, it's just that the distance wouldn't get to me…but today, I felt like I was going crazy not seeing you! Like when I say I **missed** you like crazy…I mean CRAZY!!!!	HER: an e
	HIM: I **hate** it when you do that
	HIM: I'm going to bed
HER: I **love** you too	
HIM: I do **love** you…	
HIM: so much	

Note. Emotion words bolded for emphasis. Positive emotion words are underlined.

Emotion words. As shown in Table 4, men's use of positive emotion words was positively related to their own satisfaction and their partners' satisfaction; use of negative emotion words for both men and women was unrelated to either satisfaction or stability. Women's use of positive negations (e.g., "not happy") was negatively related to their own satisfaction and their partners' satisfaction; negative negations (e.g., "not angry") were unrelated to satisfaction or stability. Men's use of positive sarcasm (e.g., "oh great") was negatively related to their own relationship satisfaction and negatively related to relationship stability. Women's use of negative sarcasm ("You have a 93 average. Yeah, you're really doing terribly in that class") was

negatively related to their own satisfaction and their partners' satisfaction and marginally negatively related to relationship stability.

Gender differences. In the APIM analyses conducted above, we allowed the paths of males and females to vary from each other. Because several of the associations between word use and relationship satisfaction were significant only for men or women but not for both, we next tested potential gender differences. To do this, we constrained men's and women's paths to be equal to each other in each model. Models that are significantly worse fitting when these paths are constrained to be equal (compared to the saturated, unconstrained basic APIM models) indicate gender
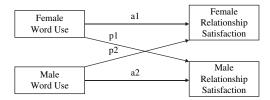
Figure 1. Actor–partner interdependence model (APIM) used estimate the associations between word use and relationship satisfaction.

Note. Error terms are not shown. We allowed male and female word use and relationship satisfaction scores to covary. To test for gender differences, we constrained the female paths (a1 and p1) to be identical to the male paths (a2 and p2) to determine if this significantly worsened the fit of the model.

differences. In none of these analyses were the fits of the respective models significantly worsened by constraining men's and women's paths to be equal. Thus, although the magnitude of the effects differed between men and women across many linguistic categories, none of these differences was statistically significant.

Relative contributions of specific linguistic categories to relationship satisfaction and stability. Although these findings indicate significant associations between word use in couples' IMs and relationship quality and stability, they do not address the extent to which each type of word (e.g., "I," positive emotion words and positive negations) uniquely contributes to relationship satisfaction and stability. We conducted two additional sets of analyses to address this issue.

To test the unique effects of different types of words on relationship satisfaction, we entered each significant and marginally significant linguistic predictor from the first set of APIM analyses into a single APIM path model in SEM. These predictors included female "I" use, male "me" use, male "you" use, male positive emotion word use, female positive negations, male positive sarcasm, and female negative sarcasm. We dropped only male "me" use and male "I" use

from the final model; all other predictors remained significant—or, in the case of female negative sarcasm, marginally significant—when entered together. The final model may be found in Figure 2. Based on accepted standards for goodness-of-fit statistics using SEM (e.g., Byrne, 2001; Kline, 2005), the overall fit of the model was very good (compartive fit index [CFI] = .94, root mean square error of approximation [RMSEA] = .09). Together, the linguistic predictors in this model accounted for 20% of the variance in females' levels of relationship satisfaction (multiple R = .45) and 35% of the variance in males' levels of satisfaction (multiple R = .59).

To test which linguistic predictors uniquely accounted for variance in relationship stability at the 6-month follow-up, we entered each significant and marginally significant linguistic predictor from the first set regression analyses into a single regression. These predictors included female "I" use, male positive sarcasm, and female negative sarcasm. Only female "I" use and male positive sarcasm remained significant ($p < .05$) when entered simultaneously, with standardized regression coefficients (betas) of .29 and −.31, respectively. Together, these predictors accounted for 21% of the variance in relationship stability (multiple R = .46).

Discussion

The purpose of this study was to investigate how the specific words that couples use in their everyday online conversations are linked to relationship quality and stability. We found that couples' use of pronouns and emotion words in their daily IM conversations are related to how satisfied they are in their relationships, how satisfied their partners are, and the likelihood of relationship survival.

Pronoun findings

Researchers have argued that the use of "we" ("'we'-ness") may capture important ways that couples think about their relationships, in particular the extent to which couple members think of themselves as interdependent (Agnew et al., 1998; Buehlman, Gottman, &

Table 4. *Predicting relationship satisfaction and stability from couples' language use in instant messages*

Linguistic category	Male satisfaction[a]	Female satisfaction[a]	Relationship stability[b]
Pronouns			
We			
Male	−.08	.05	−.14
Female	.08	−.06	−.04
I			
Male	.11	.12	−.07
Female	.29*	.39**	.36**
Me			
Male	−.16	−.21†	−.18
Female	.16	.17	.11
You			
Male	−.23†	.00	.02
Female	.11	.15	.02
Emotion words			
Positive emotions			
Male	.36**	.33**	.19
Female	.03	.04	.07
Negative emotions			
Male	.12	.05	.04
Female	−.02	.06	.00
Positive negations			
Male	−.18	.02	−.03
Female	−.31*	−.29*	−.09
Negative negations			
Male	.06	.06	−.05
Female	.01	.16	.07
Positive sarcasm			
Male	−.31*	−.12	−.33**
Female	−.14	−.17	−.09
Negative sarcasm			
Male	−.13	.09	−.07
Female	−.29*	−.38**	−.23†

Note. We conducted actor–partner interdependence model (APIM) analyses of associations between language use and relationship satisfaction using structural equation modeling; we conducted analyses of associations between language use and relationship stability using linear regression, with relationship stability at the 6-month follow-up coded as 0 = *broken up*, 1 = *still together*. All values for relationship satisfaction analyses represent standardized path coefficients; values for relationship stability analyses represent standardized beta weights.
[a]ns = 68 males and 68 females. [b]ns = 64 males and 64 females.
$^{\dagger}p < .07$. *$p < .05$. **$p < .01$.

Katz, 1992; Fitzsimons & Kay, 2004; Gottman & Levenson, 1999). In studies that have directly assessed couples' interactions, however, "we" use has been surprisingly unrelated to measures of relationship quality (Sillars et al., 1997; Simmons et al., 2005). Similarly, the results from this study showed no association between "we" use and relationship satisfaction or relationship stability. One possible explanation for these findings is that "we" use during couples' interactions (as compared to previous studies in which researchers have assessed "we" use

Female "I" Use

Female Positive Negations

Female Negative Sarcasm

Male Positive Emotions

Male Positive Sarcasm

Female Relationship Satisfaction

Male Relationship Satisfaction
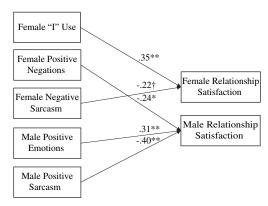
.35**

-.22†
-.24*

.31**
-.40**

Figure 2. APIM model of associations between word use and relationship satisfaction. *Note.* Intercepts, residual variances, and residual covariances not shown.
$^{†}p = .055.$ $*p < .05.$ $**p < .01.$

during peoples' descriptions of their relationships) does not directly tap cognitive interdependence. Second, contextual effects may be at work. Although "we" use during problem-solving interactions and daily IMs (which cover a wide range of conversational topics) and relationship quality appear to be unrelated, "we" use during other types of interactions— such as discussions specifically geared toward positive aspects of relationships or discussions about the future—potentially could be linked to the quality of people's relationships.

Pronouns other than "we" were related to relationship satisfaction and stability. For women, "I" use was positively related to their own levels of satisfaction, their partners' levels of satisfaction, and relationship stability. There are at least two possible reasons why higher "I" use is associated with greater relationship quality. First, some researchers have suggested that greater "I" use reflects increased levels of self-disclosure, which in turn promotes intimacy and closeness (Laurenceau, Barrett, & Pietromonaco, 1998; Rankin-Esquer et al., 1997). Second, "I" use may reflect positive aspects of autonomy within a relationship. Although experiencing interdependence or relatedness is one key to relationship closeness, managing a sense of one's own autonomy within a relationship is important as well. From an interactionist perspective, autonomy and

interdependence are two separate constructs, with autonomy and interdependence at a balance in which each allows or enables the other (Bodin, 1981). From this view, couple members may feel closest to each other when allowed easy access to distance. Empirical evidence supports this conceptualization and indicates that both autonomy and interdependence are uniquely and positively linked to relationship satisfaction (Cochran & Peplau, 1985; Feeney, 2007; Rankin-Esquer et al., 1997).

Men's use of "me" was marginally negatively associated with their partners' relationship satisfaction. Although a previous study examining "me" use during couples' laboratory discussions did not find associations with satisfaction, "me" use in that study was positively related to negative interaction behaviors (Simmons et al., 2005). Men's use of "you" in this study was marginally negatively related to self-reported satisfaction. Previous studies have reported small but consistent negative associations between "you" use and relationship satisfaction (Sillars et al., 1997; Simmons et al., 2005). The lack of clear significant associations between "you" and "me" and satisfaction and stability in this study may in part be a function of low power to detect small effects. With the sample size in this study, power to detect an effect size (r) of .30 was .72; power to detect an effect size of .20 was only .38. An alternative explanation is that "you" and "me" may be more important in the context of problem-solving discussions compared to everyday conversations. For example, "you" use during conflict (e.g., "You be can be really difficult sometimes") may be qualitatively different from "you" use in discussions about daily events (e.g., "Are you going to the basketball game tonight?").

Emotion word findings

Emotion words that couples used in their IMs were associated with relationship satisfaction and stability in a variety of ways. The pattern of findings suggests important distinctions in the roles of emotion words depending on whether people use them genuinely, precede them with negations, or use them sarcastically. For men, genuinely expressed positive emotion

words were positively related to their own satisfaction and their partners' satisfaction. This finding supports a growing literature demonstrating links between positive behaviors (e.g., expressions of love and support) and relationship quality and stability in laboratory-based conflict discussions (Gill, Christensen, & Fincham, 1999; Gottman & Levenson, 1992; Heyman, 2001), social support interactions (Gable, Reis, Impett, & Asher, 2004; Pasch & Bradbury, 1998), naturalistic observation (Driver & Gottman, 2004; Frosch, Mangelsdorf, & McHale, 1998), and daily diary studies (Bolger et al., 2003; Laurenceau, Troy, & Carver, 2005).

Genuinely expressed negative emotion words were unrelated to satisfaction or stability. Among women, positive emotion words preceded by negations were negatively associated with both self-reported and partner-reported satisfaction. Further, men's positive emotion words used sarcastically were negatively related to their own satisfaction and to relationship stability. Women's negative emotion words used sarcastically were negatively related to self-reported satisfaction, partners' satisfaction, and stability. Previous research has demonstrated robust links between negative emotions expressed during couples' interactions and relationship dissatisfaction and instability (Gottman & Levenson, 2000; Gottman & Notarius, 2000; Heavey, Christensen, & Malamuth, 1995; Johnson et al., 2005). Similarly, these findings show that expressions of negative emotions through word use are negatively associated with relationship health, but that these associations may be obscured when contextual issues of language such as sarcastic tone and co-occurrence with negations are not taken into account.

Implications

There are three main implications for the results presented here. First, these results demonstrate that the words used by both people in a romantic relationship are linked to the quality and stability of that relationship. Although previous studies have shown word use to be associated with self-reported satisfaction, this is the first study to our knowledge to provide evidence of links between word use and partners' satisfaction as well. Perhaps most importantly, word use showed associations with relationship survival 6 months later, demonstrating that the words that couples use predict an important relationship outcome beyond satisfaction.

Second, these results have implications for understanding contextual influences on the links between word use and relationship functioning. Although previous studies have investigated contextual aspects of word use in other domains such as adjustment to trauma (Cohn, Mehl, & Pennebaker, 2004) and political speech (Pennebaker & Lay, 2002), studies of word use in relationships have not taken context into account. Recently, scholars in our field have argued for an expansion of research on contextual issues in intimate relationships, based on the premise that examining context is necessary for gaining a complete and accurate understanding of couples' behaviors (Overall & Sibley, 2008; Reis, Capobianco, & Tsai, 2002; Warner, 2002). A contribution of the present research is that it integrates a contextual approach to the study of word use in relationships more extensively than has prior research, demonstrating, for example, that negative emotion words are associated with lower levels of relationship satisfaction when used sarcastically but not when used literally.

Finally, there are potential clinical implications. In behavioral couples therapy, for example, clinicians often encourage couples to use more ''I'' statements when discussing problems in their relationship (Epstein & Baucom, 2002). These findings present the possibility that encouraging couples' use of other types of words such as positive emotion words in clinical settings may be beneficial as well. Although therapists may not readily be able to change how happy people are in their relationships, they may be able to effect subtle changes in the words that couples use. This is in line with current cognitive and behavioral approaches to therapy geared toward enhancing relationship functioning through the modification of couples' behaviors (Baucom, Shoham, Mueser, Daiuto, & Stickle, 1998; Epstein, Baucom, & Daiuto,

1997; Hahlweg & Markman, 1988). The potential for clinical application is, of course, tempered by the need for replication of these findings and subsequent studies designed specifically to test the direction of the causal links between word use and relationship quality.

Limitations

There are important limitations of this project. First, the language that couples use in their IMs obviously represents only a fraction of the words that most couples—even frequent IM users—likely exchange with each other. We do not know the extent to which couples' IM conversations mirror their face-to-face interactions. Although some have suggested that online communication may be more disclosing and emotionally expressive than spoken communication (Bargh et al., 2002; Joinson, 2001), no studies to our knowledge have directly compared the association between online communication and spoken communication in naturalistic settings. It may be that certain words that couples use have greater or less relevance in IM communication compared to spoken communication. Nevertheless, a distinct advantage of IM is that it allows researchers to examine the words that couples use in their everyday lives in the absence of most nonverbal cues. With IMs, the words that people use are of singular importance in communicating their goals, feelings, and thoughts. Because couples may cover a wide variety of topics in their daily IM conversations, these findings show that word use in couples' interactions has relevance beyond laboratory-based problem discussions.

A second limitation is that our IM coders were explicitly aware of when we were and were not evaluating them for reliability; this may have amplified observer agreement between coders because they might have implicitly—or perhaps even explicitly—been more careful in their coding during the monitoring phase. Additionally, we did not reassess interobserver agreement after the initial training and monitoring phase. As a result, the ICCs reported are possibly overestimates or

best possible cases of interobserver agreement. This could be especially problematic for sarcasm, for which there was very low interobserver agreement among our coders, and which is often difficult to detect in computer-mediated communication (Hancock, 2004).

A third limitation is that the participants in this study were undergraduate couples from the United States. Future research should examine the use of IM conversations in investigating the links between word use and relationship quality for older and married couples and for those in other cultures. Although the majority of IM users still are young adults in their 20s and 30s, IM use is increasing in force use among older individuals (Shiu & Lenhart, 2004) and may potentially be useful in studying the daily functioning of couples during middle and later adulthood.

Fourth, with the relatively small convenience sample size used in this study, there was adequate statistical power to detect only medium to large effects. This is relevant, for example, in testing gender differences in associations between language use and relationship quality. Although we did not detect gender differences in any of the effects reported here, the trend of results suggested the possibility of small gender effects that one might not detect without a larger sample size. Replications of these findings with larger probability samples would make it possible to generalize these findings to this population and others and determine the robustness of our results.

Finally, these findings do not address the causal direction of the associations between word use and relationship quality. Although some have argued that the words that couples use directly shape the quality of their relationships (e.g., Bradac, 1983), no studies to our knowledge have tested this idea empirically. It is equally plausible that greater relationship satisfaction leads to, for example, more frequent "I" use and fewer sarcastic emotional statements, and not vice versa. Longitudinal studies that assess language use and relationship quality over time are essential to determine whether the words that couples use merely reflect their underlying thoughts and

feelings about their relationships or actively shape their future course.

Conclusion

We have attempted to expand existing conceptualizations of the role of language use in romantic relationships. By taking into account some of the contextual effects of word use and by addressing the interdependence of the data between couple members, we were able to conduct a rigorous test of the associations between word use and relationship quality. By examining the effects of different types of words simultaneously, we were able to test the extent to which each type of word uniquely explained variance in one's self-reported relationship satisfaction, partner-reported satisfaction, and relationship stability. The results presented here suggested multiple independent associations between word use and relationship quality and pointed to differential effects of word use for actors and partners. We believe that these findings will help to clarify the complex associations between language use and relationship quality, extending the small but growing literature on language use in close relationships. This work supports the conclusion that the types of words that couples use can be windows into the underlying dynamics of relationships, and, ultimately, the success of those relationships.

References

Agnew, C. R., Van Lange, P. A. M., Rusbult, C. E., & Langston, C. A. (1998). Cognitive interdependence: Commitment and the mental representation of close relationships. *Journal of Personality and Social Psychology*, *74*, 939–954.

Bargh, J. A., McKenna, K. Y. A., & Fitzsimons, G. M. (2002). Can you see the real me? Activation and expression of the "true self" on the Internet. *Journal of Social Issues*, *58*, 33–48.

Baucom, D. H., Shoham, V., Mueser, K. T., Daiuto, A. D., & Stickle, T. R. (1998). Empirically supported couple and family interventions for marital distress and adult mental health problems. *Journal of Consulting and Clinical Psychology*, *66*, 53–88.

Bodin, A. M. (1981). The interactional view: Family therapy approaches of the Mental Research Institute. In A. S. Gurman & D. P. Kniskern (Eds.), *Handbook of family therapy* (pp. 267–309). New York: Brunner/Mazel.

Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology*, *54*, 579–616.

Bradac, J. J. (1983). The language of lovers, flovers, and friends: Communicating in social and personal relationships. *Journal of Language and Social Psychology*, *2*, 141–162.

Buehlman, K. T., Gottman, J. M., & Katz, L. F. (1992). How a couple views their past predicts their future: Predicting divorce from an oral history interview. *Journal of Family Psychology*, *5*, 295–318.

Burke, P. A., & Dollinger, S. J. (2005). A picture's worth a thousand words: Language use in the autophotographic essay. *Personality and Social Psychology Bulletin*, *31*, 536–548.

Byrne, B. M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Mahwah, NJ: Erlbaum.

Cialdini, R. B., Borden, R. J., Thorne, A., Walker, M. R., Freeman, S., Sloan, L. R., et al. (1976). Basking in reflected glory: Three (football) field studies. *Journal of Personality and Social Psychology*, *34*, 366–375.

Cochran, S. D., & Peplau, L. A. (1985). Value orientations in heterosexual relationships. *Psychology of Women Quarterly*, *9*, 477–488.

Cohn, M. A., Mehl, M. R., & Pennebaker, J. W. (2004). Linguistic markers of psychological change surrounding September 11, 2001. *Psychological Science*, *15*, 687.

Drigotas, S. M., Whitney, G. A., & Rusbult, C. E. (1995). On the peculiarities of loyalty: A diary study of responses to dissatisfaction in everyday life. *Personality and Social Psychology Bulletin*, *21*, 596–609.

Driver, J. L., & Gottman, J. M. (2004). Daily marital interactions and positive affect during marital conflict among newlywed couples. *Family Process*, *43*, 301–314.

Duck, S., Pond, K., & Hendrick, C. (1989). Friends, romans, countrymen, lend me your retrospections: Rhetoric and reality in personal relationships. In C. Hendrick (Ed.), *Review of personality and social psychology: Vol. 10. Close relationships* (pp. 17–38). Thousand Oaks, CA: Sage.

Epstein, N. B., & Baucom, D. H. (2002). *Enhanced cognitive-behavioral therapy for couples: A contextual approach*. Washington, DC: American Psychological Association.

Epstein, N. B., Baucom, D. H., & Daiuto, A. (1997). Cognitive-behavioral couples therapy. In W. K. Halford & H. J. Markman (Eds.), *Clinical handbook of marriage and couples interventions* (pp. 415–449). Hoboken, NJ: Wiley.

Feeney, B. C. (2007). The dependency paradox in close relationships: Accepting dependence promotes independence. *Journal of Personality and Social Psychology*, *92*, 268–285.

Fischer, U., McDonnell, L., & Orasanu, J. (2007). Linguistic correlates of team performance: Toward a tool for monitoring team functioning during space missions. *Aviation, Space, and Environmental Medicine*, *78*, B86–B95.

Fitzsimons, G. M., & Kay, A. C. (2004). Language and interpersonal cognition: Causal effects of variations in pronoun usage on perceptions of closeness. *Personality and Social Psychology Bulletin*, *30*, 547–557.

Frosch, C. A., Mangelsdorf, S. C., & McHale, J. L. (1998). Correlates of marital behavior at 6 months postpartum. *Developmental Psychology*, *34*, 1438–1449.

Gable, S., Reis, H., Impett, E., & Asher, A. (2004). What do you do when things go right? The intrapersonal and interpersonal benefits of sharing positive events. *Journal of Personality and Social Psychology*, *87*, 228.

Gill, D. S., Christensen, A., & Fincham, F. D. (1999). Predicting marital satisfaction from behavior: Do all roads really lead to Rome? *Personal Relationships*, *6*, 369–387.

Gottman, J. (1994). *Why marriages succeed or fail*. New York: Simon & Schuster.

Gottman, J. M., Coan, J., Carrere, S., & Swanson, C. (1998). Predicting marital happiness and stability from newlywed interactions. *Journal of Marriage and the Family*, *60*, 5–22.

Gottman, J. M., Driver, J., Tabares, A., Gurman, A. S., & Jacobson, N. S. (2002). Building the sound marital house: An empirically derived couple therapy. In A. S. Gurman & N. S. Jacobson (Eds.), *Clinical handbook of couple therapy* (pp. 373–399). New York: Guilford Press.

Gottman, J. M., & Levenson, R. W. (1992). Marital processes predictive of later dissolution: Behavior, physiology, and health. *Journal of Personality and Social Psychology*, *63*, 221–233.

Gottman, J. M., & Levenson, R. W. (1999). What predicts change in marital interaction over time? A study of alternative models. *Family Processes*, *38*, 143–158.

Gottman, J. M., & Levenson, R. W. (2000). The timing of divorce: Predicting when a couple will divorce over a 14-year period. *Journal of Marriage and the Family*, *62*, 737–745.

Gottman, J. M., & Notarius, C. I. (2000). Decade review: Observing marital interaction. *Journal of Marriage and the Family*, *62*, 927–947.

Hahlweg, K., & Markman, H. J. (1988). Effectiveness of behavioral marital therapy: Empirical status of behavioral techniques in preventing and alleviating marital distress. *Journal of Consulting and Clinical Psychology*, *56*, 440.

Hahlweg, K., Reisner, L., Kohli, G., Vollmer, M., Schindler, L., & Revenstorf, D. (1984). Development and validity of a new system to analyze interpersonal communication: Kategoriensystem fur partnershaftliche Interaktion [Dyadic Interaction Coding System]. In K. Hahlweg & N. S. Jacobson (Eds.), *Marital interaction: Analysis and modification* (pp. 182–198). New York: Guilford Press.

Hancock, J. T. (2004). Verbal irony use in face-to-face and computer-mediated conversations. *Journal of Language and Social Psychology*, *23*, 447–463.

Heavey, C. L., Christensen, A., & Malamuth, N. M. (1995). The longitudinal impact of demand and withdrawal during marital conflict. *Journal of Consulting and Clinical Psychology*, *63*, 797–801.

Hendrick, S. S. (1988). A generic measure of relationship satisfaction. *Journal of Marriage and the Family*, *50*, 93.

Heyman, R. E. (2001). Observation of couple conflicts: Clinical assessment applications, stubborn truths, and shaky foundations. *Psychological Assessment*, *13*, 5–35.

Ickes, W., Reidhead, S., & Patterson, M. (1986). Machiavellianism and self-monitoring: As different as "me" and "you." *Social Cognition*, *4*, 58–74.

Johnson, M. D., Cohan, C. L., Davila, J., Lawrence, E., Rogge, R. D., Karney, B. R., et al. (2005). Problem-solving skills and affective expressions as predictors of change in marital satisfaction. *Journal of Consulting and Clinical Psychology*, *73*, 15–27.

Joinson, A. N. (2001). Self-disclosure in computer-mediated communication: The role of self-awareness and visual anonymity. *European Journal of Social Psychology*, *31*, 177–192.

Kahn, J. H., Tobin, R. E. M., Massey, A. E., & Anderson, J. A. (2007). Measuring emotional expression with the Linguistic Inquiry and Word Count. *American Journal of Psychology*, *120*, 263–286.

Kashy, D. A., & Kenny, D. A. (2000). The analysis of data from dyads and groups. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social psychology* (pp. 451–477). New York: Cambridge University Press.

Kenny, D. A. (1996). Models of interdependence in dyadic research. *Journal of Social and Personal Relationships*, *13*, 279–294.

Kenny, D. A., & Acitelli, L. K. (2001). Accuracy and bias in the perception of the partner in a close relationship. *Journal of Personality and Social Psychology*, *80*, 439–448.

Kenny, D. A., & Cook, W. (1999). Partner effects in relationship research: Conceptual issues, analytic difficulties, and illustrations. *Personal Relationships*, *6*, 433.

Kenny, D. A., & Kashy, D. A. (1991). Analyzing interdependence in dyads. In B. M. Montgomery & S. Duck (Eds.), *Studying interpersonal interaction* (pp. 275–285). New York: Guilford Press.

Kline, R. (2005). *The principles and practice of structural equation modeling*. New York: Guilford Press.

Knobloch, L. K., & Solomon, D. H. (2003). Manifestations of relationship conceptualizations in conversation. *Human Communication Research*, *29*, 482–515.

Kreuz, R. J. (2000). The production and processing of verbal irony. *Metaphor and Symbol*, *15*, 99–107.

Laurenceau, J.-P., Barrett, L. F., & Pietromonaco, P. R. (1998). Intimacy as an interpersonal process: The importance of self-disclosure and perceived partner responsiveness in interpersonal exchanges. *Journal of Personality and Social Psychology*, *74*, 1238.

Laurenceau, J.-P., Troy, A. B., & Carver, C. S. (2005). Two distinct emotional experiences in romantic relationships: Effects of perceptions regarding approach of intimacy and avoidance of conflict. *Personality and Social Psychology Bulletin*, *31*, 1123–1133.

Lee, C. H., Park, J., & Seo, Y. S. (2006). An analysis of linguistic styles by inferred age in TV dramas. *Psychological Reports*, *99*, 351–356.

McDonald, S., & Pearce, S. (1996). Clinical insights into pragmatic theory: Frontal lobe deficits and sarcasm. *Brain and Language*, *53*, 81–104.

Mehl, M. R., Gosling, S. D., & Pennebaker, J. W. (2006). Personality in its natural habitat: Manifestations and implicit folk theories of personality in daily life. *Journal of Personality and Social Psychology*, *90*, 862–877.

Nezlek, J. B. (2003). Using multilevel random coefficient modeling to analyze social interaction diary data. *Journal of Social and Personal Relationships*, *20*, 437–469.

Overall, N. C., & Sibley, C. G. (2008). When accommodation matters: Situational dependency within daily interactions with romantic partners. *Journal of Experimental Social Psychology*, *44*, 95–104.

Pasch, L. A., & Bradbury, T. N. (1998). Social support, conflict, and the development of marital dysfunction. *Journal of Consulting and Clinical Psychology*, *66*, 219–230.

Pennebaker, J. W., Francis, M. E., & Booth, R. J. (2001). *Linguistic Inquiry and Word Count (LIWC): LIWC 2001*. Mahwah, NJ: Erlbaum.

Pennebaker, J. W., & King, L. A. (1999). Linguistic styles: Language use as an individual difference. *Journal of Personality and Social Psychology*, *77*, 1296.

Pennebaker, J. W., & Lay, T. C. (2002). Language use and personality during crises: Analyses of Mayor Rudolph Giuliani's press conferences. *Journal of Research in Personality*, *36*, 271–282.

Pennebaker, J. W., Mehl, M. R., & Niederhoffer, K. G. (2003). Psychological aspects of natural language use: Our words, our selves. *Annual Review of Psychology*, *54*, 547.

Rankin-Esquer, L. A., Burnett, C. K., Baucom, D. H., & Epstein, N. (1997). Autonomy and relatedness in marital functioning. *Journal of Marital & Family Therapy*, *23*, 175–190.

Reis, H. T. (1994). Domains of experience: Investigating relationship processes from three perspectives. In R. Erber & R. Gilmore (Eds.), *Theoretical frameworks in personal relationships* (pp. 87–110). Mahwah, NJ: Erlbaum.

Reis, H. T., Capobianco, A., & Tsai, F.-F. (2002). Finding the person in personal relationships. *Journal of Personality*, *70*, 813–850.

Shiu, E., & Lenhart, A. (2004). How Americans use instant messaging. Retrieved October 14, 2005, from http://www.pewinternet.org/pdfs/PIP_Instantmessage_Report.pdf

Sillars, A., Shellen, W., McIntosh, A., & Pomegranate, M. (1997). Relational characteristics of language: Elaboration and differentiation in marital conversations. *Western Journal of Communication*, *61*, 403–422.

Simmons, R. A., Gordon, P. C., & Chambless, D. L. (2005). Pronouns in marital interaction: What do "you" and "I" say about marital health? *Psychological Science*, *16*, 932–936.

Slatcher, R. B., Chung, C. K., Pennebaker, J. W., & Stone, L. D. (2007). Winning words: Individual differences in linguistic style among U.S. presidential and vice presidential candidates. *Journal of Research in Personality*, *41*, 63–75.

Slatcher, R. B., & Pennebaker, J. W. (2006). How do I love thee? Let me count the words: The social effects of expressive writing. *Psychological Science*, *17*, 660–664.

Slugoski, B. R., & Turnbull, W. (1988). Cruel to be kind and kind to be cruel: Sarcasm, banter and social relations. *Journal of Language and Social Psychology*, *7*, 101–121.

Stone, L. D., & Pennebaker, J. W. (2002). Trauma in real time: Talking and avoiding online conversations about the death of Princess Diana. *Basic and Applied Social Psychology*, *24*, 172–182.

Tashiro, T., & Frazier, P. (2007). The causal effects of emotion on couples' cognition and behavior. *Journal of Counseling Psychology*, *54*, 409–422.

Turkle, S. (1995). *Life on the screen: Identity in the age of the Internet*. New York: Simon & Schuster.

Uchiyama, H., Seki, A., Kageyama, H., Saito, D. N., Koeda, T., Ohno, K., et al. (2006). Neural substrates of sarcasm: A functional magnetic-resonance imaging study. *Brain Research*, *1124*, 100–110.

Walther, J. B. (1996). Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research*, *23*, 3.

Warner, R. M. (2002). What microanalysis of behavior in social situations can reveal about relationships across the life span. In A. L. Vangelisti, H. T. Reis, & M. A. Fitzpatrick (Eds.), *Stability and change in relationships* (pp. 207–227). New York: Cambridge University Press.

Weintraub, M. D. (1981). *Verbal behavior: Adaptation and psychopathology*. New York: Springer.

Williams, K. J., Atkins, D. C., & Christensen, A. (2007). "You" and "I" need to talk about "us": Linguistic patterns in couple interactions. Unpublished manuscript.

Wilmot, W. W., & Shellen, W. N. (1990). Language in friendships. In H. Giles & W. P. Robinson (Eds.), *Handbook of language and social psychology* (pp. 413–431). Oxford, England: Wiley.