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We can work it out: Age differences in relational pronouns, physiology, and behavior in marital conflict

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Abstract

This study examined the relationship that personal pronouns spoken during a marital conversation have with the emotional qualities of those interactions and with marital satisfaction. Middle-aged and older couples (N=154) engaged in a 15-minute conflict conversation during which physiology and emotional behavior were continuously monitored. Verbatim transcripts of the conversations were coded into two lexical categories: (a) We-ness (we-words): pronouns that focus on the couple; (b) Separateness (Me/You words): pronouns that focus on the individual spouses. Analyses revealed that greater We-ness was associated with a number of desirable qualities of the interaction (lower cardiovascular arousal, more positive and less negative emotional behavior), whereas, greater Separateness was associated with a less desirable profile (more negative emotional behavior, lower marital satisfaction). In terms of age differences, older couples used more We-ness than middle-aged couples. Further, the associations between Separateness and marital satisfaction were strongest for older wives. These findings indicate that the emotional aspects of marital quality are expressed in the natural language of couples engaged in conversation.

Keywords

Aging; Marital Quality; Personal pronouns; We-ness vs. Separateness; Emotion

Husband: When “we” think about those things, the work on the house, intimate vacation time...

Wife: It’s a “we” thing.

Husband: They are “we” things.

These comments were made by a couple in this study during a discussion of an area of disagreement in their marriage. Notably, they associated salient aspects of marital life with a collective entity, using We-words. Other couples might have focused more on the individual

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spouses, using You- and Me-words. Is such word usage merely random, or does it reflect enduring psychological qualities of the couple's relationship? Pennebaker, Mehl, and Niederhoffer (2003) concluded that often more significant information can be extracted from "junk words", such as prepositions, articles and, in particular, pronouns, than from words that convey more overtly meaningful content. These findings are in keeping with linguistic research that has emphasized the centrality of pronouns in shaping shared meaning structures during conversations (Gordon, Grosz, & Gilliom, 1993; Sanford & Garrod, 1981).

Previous research has demonstrated that pronoun usage is associated with relationship commitment (Agnew, Van Lange, Rusbult, & Langston, 1998), intimacy, and marital quality (Kay & Fitzsimmons, 2004; Sillars, Shellen, McIntosh, & Zietlow, 1997). Research has also documented that the emotional qualities of marital interactions are closely associated with marital satisfaction (Gottman & Levenson, 1988, 1992; Levenson & Gottman, 1983, 1985). However, there has been very little research examining the associations between the use of pronouns and the emotional qualities of marriage. Nonetheless, there is some evidence to suggest that natural language use is associated with the emotional qualities of marriage. In an earlier study from our laboratory, we examined how the use of emotion words and metaphors relate to autonomic nervous system (ANS) activity during marital interactions (Marchitelli & Levenson, 1992), finding evidence of concordance between spoken emotion language and ANS physiology (e.g., the use of heat and pressure metaphors were associated with elevated levels of cardiovascular response). Additionally, Buehlman, Gottman, and Katz (1992) used an inferential coding system for quantifying schemas of We-ness and Separateness during oral history interviews and found We-ness to be associated with more positive and less negative emotional behaviors and lower levels of ANS activity during subsequent couple interactions.

As in previous research, we focused on the distinction between pronouns that convey We-ness (*We-words*), and those that convey Separateness (*You-words* and *Me-words*). However, unlike previous research, we combined text analysis methodologies used in studies of marital interaction (Marchitelli & Levenson, 1992; Sillars et al., 1997; Simmons, Gordon, & Chambless, 2005) and psychotherapy (e.g., Mergenthaler & Bucci, 1999) with our methodology for studying the emotional qualities of naturalistic marital interactions. Because a sense of We-ness may become stronger over time in marriages, this study utilized a sample of middle-aged and older long-term married couples.

We-ness versus Separateness

The constructs of We-ness and Separateness have long been of interest to social psychologists and marital researchers because the formation of a close romantic relationship involves a partial transformation of identity – a shift from being two separate individuals into being a couple. Early on, psychologists recognized this transformation, describing it in terms of autonomy versus homonymy (Angyal, 1943) or agency versus communion (Bakan, 1966). According to interdependence theory (Kelley, 1979; Kelley and Thibaut, 1978), dependence in the relationship results in more favorable relationship outcomes. Rusbult (1983) extended this theory to incorporate an investment model of interdependence that links dependence with relationship commitment. Increases in relationship commitment lead to a shared collective identity in which mental representations of the couple become more prominent (Agnew et al., 1998). Related notions emphasize the inclusion of other in the self (Aron & Aron, 1997; Aron, Aron, & Smollan, 1992), and relational awareness (Acitelli, 1988, 1992, 1993). Over the course of the past few decades, the construct of We-ness vs. Separateness has been shown to be associated with relationship satisfaction using a number of different approaches to measure the construct (e.g., Aron et al., 1992; Buehlman et al., 1992; Sillars et al., 1997)

Methods used to study We-ness and Separateness

Self-report methods have been used to measure We-ness. Using self-report measures, researchers have documented that relationship partners (Aron et al., 1992) and spouses (Acitelli & Antonucci, 1991; Scott, Fuhrman, & Wyer, 1991) who report perceiving themselves as a couple also report being more satisfied with their relationship than those who primarily perceive themselves as individuals. The implications of these findings are somewhat limited because of the shared method variance, but as described below, the results are consistent with those found using other measurement approaches.

Content analyses of couples' conversations and couples' descriptions of their relationship have also been used to assess We-ness versus Separateness and have revealed that themes of togetherness are associated with relationship satisfaction. Specifically, content coding has shown that satisfied couples emphasize communal themes both in couples' conversations (Sillars, Weisberg, Burggraf, & Wilson, 1987; Sillars, Burggraf, Yost, & Zietlow, 1992) and in couples' free-response relationship descriptions (Fletcher, Fincham, Cramer, & Heron, 1987). Further, in the Buehlman and Gottman work (Buehlman et al., 1992; Carrere, Buehlman, Gottman, Coan, & Ruckstuhl, 2000), relational schemas were derived from narrative coding of videotaped oral history interviews of married couples. They found that greater We-ness was related to (a) more positive (e.g., humor) and fewer negative (e.g., criticism) problem solving strategies; (b) less negative affect; and (c) less cardiac arousal during subsequent couple interactions. Greater We-ness was also associated with higher marital satisfaction and less marital instability (separation or divorce) three years later. These findings underscore the breadth of the relationship between We-ness schemas and other aspects of marital functioning.

Finally, natural language usage has also been used as an implicit measure of We-ness vs. Separateness. Psycholinguistic research has demonstrated that the words we speak reflect integral components of our psychological makeup, including emotional state, social identity, and cognitive style (Pennebaker et al., 2003). In the domain of interpersonal relationships, subtle differences in language have been correlated with relational perceptions and relationship closeness (Agnew et al., 1998; Fiedler, Semin, & Koppetsch, 1991; Ickes, Stinson, Bissonnette, & Garcia, 1990; Fitzsimons & Kay, 2004). Despite this, the study of the use of speech particles such as personal pronouns in natural language has been relatively underutilized in the study of relationships (Pennebaker et al., 2003). Ironically, adages such as "there is no 'I' in team" suggest the importance that speech particles play in group processes and in creating relational meaning. Without such referents, it would be difficult or nearly impossible to express certain types of relationships verbally (Bradac, 1983). Hence, the natural use of such self/other referents may be an important linguistic marker of an underlying shared versus separate dimension of identification. Speech particles may be particularly useful in the study of relationships because they arguably are less likely to be monitored and censored than more elaborated speech content.

Existing theory and research that has considered pronoun usage in the context of relationships has been promising. The use of the pronoun "we" has been proposed as a marker of closeness, intimacy, and involvement of the other (Duck, 1992; Mehrabian, 1971). Ellis and Hamilton (1985) found that first person plural pronouns (e.g., we, us, our) reflect common experience whereas first (e.g., I, me, my) or second person singular (e.g., you, your) pronouns reflect individuated experience. Previous work has indicated that the frequency of We-words when writing about a romantic relationship is associated with greater relationship commitment (Agnew et al., 1998). Kay and Fitzsimons (2004) manipulated pronoun usage and found that people who used We-words as opposed to You- and Me-words perceived relationships as closer and of higher quality. Sillars et al., (1997) found that happier couples used both fewer You- and Me-words than unhappy couples.

Emotional behavior and physiology in marital interaction

Research has consistently documented how the emotional climate of marital conflict interactions is an important marker of overall marital quality. Two important indicators of emotion in marital interactions are emotional behavior (facial expression, voice tone, body posture, gestures, verbal content, and context) and physiological responses. Research on marital interactions has consistently found that emotional exchanges characterized by high levels of negative emotional behavior and low levels of positive emotional behavior are associated with greater marital dissatisfaction and instability (Gottman & Levenson, 1992; Gottman & Krokoff, 1989; Gottman et al., 1998; Karney & Bradbury, 1997). Research on physiological activation during marital interactions has also consistently shown that high levels of physiological activation during the interaction are also associated with greater marital dissatisfaction and instability (Levenson & Gottman, 1983; 1985) as well as poor adjustment to retirement (Kupperbusch, Levenson, & Ebling, 2003).

Aging and marriage

Socioemotional selectivity theory is a prominent aging theory that offers clear predictions about the nature of close relationships in late life. The theory is rooted in the idea that perceived limitations on time lead to motivation shifts in behavior (Carstensen, 1987; 1991). Specifically, the theory holds that perceived limitations on time lead to greater investment in close relationships. There is a great deal of evidence to support this prediction. Research has shown that older adults increasingly prefer and make greater investments in close relationships (Fredrickson & Carstensen, 1990; Fung, Carstensen, & Lutz, 1999; Lang, 2000; 2001; Lang & Carstensen, 1994). Not only do older adults invest more resources in close relationships, but Clements and Swensen, (2000) show that an older individual's marital relationship is an important determinant of their overall quality of life. Notably, they found relationship commitment to be the strongest predictor of marital quality for older adults. In addition to the increased importance of close relationships for older adults, there is evidence that older adults demonstrate the improved ability to regulate emotions in close relationships. Observational studies of the marital interactions of middle-aged and older couples have documented that older couples expressed more positive and less negative emotion (Carstensen, Gottman, & Levenson, 1995); had lower physiological arousal (arguably an indicator of more regulated emotional exchanges); and reported more positive subjective experience than did middle-aged couples (Levenson, Carstensen, & Gottman, 1994).

Based on the increased importance of close relationships and the improved regulation of emotion within close relationships for older adults, we expect that older married couples will be more likely to represent their relationship using a shared identity than younger couples. Sillars and colleagues (1992) found support for this insofar as older couples used more We-words than younger couples during a marital interaction. Consistent with this finding, Pennebaker and Stone (2003) reported that as people get older, they use fewer Me-words. Beyond these studies, there has been little work on the way pronoun use is associated with age.

The current study

The research we have reviewed illustrates the importance of the constructs of We-ness and Separateness as predictors of marital satisfaction and indicates that this quality may be tapped by self-report measures (Aron et al., 1992), oral histories (Buehlman et al., 1992), and the language spouses use in conversation (Sillars et al., 1997). We know that pronoun usage is associated with relationship closeness and satisfaction and that positive and negative emotion is also associated with relationship satisfaction, yet little work has been done exploring whether pronoun usage is associated with emotion. To date, only one study has examined the relationship between pronoun use and emotional behavior during the interactions of married

couples (Simmons, Gordon, & Chambless, 2005). The study explored this relationship using a sample of highly dissatisfied couples in which one spouse was diagnosed with a mental illness and found that greater use of We-words were associated with less negative interaction behavior and more positive problem solving skills. Simmons and colleagues also found that greater use of You- and Me-words were associated with negative interaction behavior, but that only You-words were associated with lower self-reported marital satisfaction.

In the current study, we build upon the prior work by evaluating a normative sample of both happy and unhappy marriages as well as middle-aged and older marriages, and including a continuous assessment of autonomic physiology during the couples' interactions. Further, in the Buehlman and Gottman studies, We-ness was quantified based on the ways couples described their relationship when responding to questions posed by an interviewer. Clearly, such interviews provide a useful format for examining relational schemas. However, in such contexts couples are not really talking to one another, but rather are responding to the interviewer. In the present research, we were interested in examining whether the constructs of We-ness and Separateness also emerged in the natural language couples use when talking to each other during an unrehearsed, minimally structured, interaction about a topic of marital conflict. As such, the present study is the first to combine a measure of We-ness and Separateness derived from conversational text analysis with measures of emotional behavior and physiology, all obtained during naturalistic marital interaction. Finally, we considered both within-spouse and between-spouse effects using the Actor-Partner Interdependence Model (APIM; Kashy & Kenny, 2000).

Our primary hypotheses are that: (a) older couples will use more We-ness (we-words) and fewer Separateness words (me/you) compared to middle-aged couples; (b) greater use of We-ness will be associated with higher marital satisfaction; greater use of Separateness will be associated with lower marital satisfaction; (c) greater use of We-ness will be associated with more favorable emotional qualities of the interaction (less physiological arousal, more positive and fewer negative emotional behaviors); greater use of Separateness will be associated with less favorable emotional qualities of the interaction (more physiological arousal, fewer positive and more negative emotional behaviors). Because the literature on gender differences and natural language has been inconclusive (Pennebaker et al., 2003), we did not cast a priori hypotheses about gender but planned to conduct exploratory analyses.

Method

Participants

The data in this study came from our ongoing longitudinal study of long-term marriages in middle-age and old age that began in 1989 (Levenson, Carstensen, & Gottman, 1993). The participants were 154 couples who differed in age (middle-aged = 40–50 years; older = 60–70 years) and represented a wide range of marital satisfaction levels. Couples were all in first marriages (middle-aged = at least 15 years in duration; older = at least 35 years). All data used for the present study were collected during the initial wave of assessment conducted in 1989–90.

For middle-aged couples, $N=80$, the mean age was 44.3 ($SD = 2.9$) for husbands and 43.2 ($SD=2.9$) for wives. For older couples, $N=74$, the mean age was 63.7 ($SD = 2.9$) for husbands and 62.3 ($SD = 3.2$) for wives.

The sample was recruited so as to be representative of long-term marriages in the Berkeley, California area and can be described as being predominantly Caucasian, upper-middle class, white collar, well-educated, and Judeo-Christian. For complete details on sampling and recruitment, see Levenson et al., (1993).

Procedure

The laboratory sessions utilized procedures for studying marital interaction developed originally by Levenson and Gottman (1983). Couples engaged in three conversations: (a) events of the day, (b) marital conflict, and (c) pleasant topic. Each conversation started with a 5-minute pre-interaction period during which the couple was asked to relax and refrain from conversation. This was followed by a 15-minute conversation. Throughout the pre-interaction and conversation periods, couples' behavior was recorded on video and their physiological responses were monitored (see below). The present study focuses on the emotional behavior of the couples during the 15-minute marital conflict conversation. The conflict conversation provides a context in which couples either come together as a team or oppose each other as individuals. Thus, given our research interest in We-ness and Separateness, the conflict conversation was optimally suited to address our research questions. Using spouses' responses on the Couple's Problem Inventory (Gottman, Markman, & Notarius, 1977), a trained interviewer helped the couple choose a topic of disagreement on which they thought they could make progress during the course of the interaction. Several days later, spouses returned separately to the laboratory to view the video recording of their interaction and used a rating dial to provide a continuous report of their emotions during the interaction.¹

Measures

Language—Trained research assistants transcribed the conflict interactions into Standard English (Mergenthaler & Stinson, 1992). A computer program, Oedipus Text written by one of the authors (Levenson, 1992) was used to count the total number of words spoken by each spouse and the number of pronouns in each of three lexical categories as defined in a dictionary file: (a) We-words: pronouns that refer to the couple (e.g., we, our, ourselves, us); (b) Me-words: pronouns that refer to the speaker (e.g., I, me, mine, myself); and (c) You-words: pronouns that refer to the other spouse (e.g., you, yours, yourself). The complete dictionary is presented in the Appendix to this article.

Because the meaning of a word can be markedly altered by its context, to improve the accuracy of pronoun classification we undertook an additional contextual analysis using the Oedipus Text program. The program displayed each personal pronoun that was used in the conversation in context (i.e., the sentence in which it occurred and the preceding and following sentences). Two trained coders placed each pronoun into one of five categories: (a) actual personal pronouns referencing the speaker, other spouse, or couple. (b) dysfluencies – pronouns used prior to a repetition and/or the truncation of a proposition (e.g. “I – I, I never wanted to do that”). If the proposition was later completed, then any personal pronouns in that proposition were coded as a personal pronoun reference (in this example, only the last “I” would be coded as personal pronoun referencing the self). (c) generic – pronouns referring to a general or universal other (e.g. “You always get what you pay for...”). (d) filler – pronouns used as part of an idiomatic phrase used to fill a speech pause (e.g., “you know,” “I don’t know,”). (e) no code – pronouns used in references to the speech of a third person (e.g. “My boss said ‘I am really sick of this backlog we’ve got!’”). Only personal pronoun categories that referenced the speaker, other spouse, or couple were used in subsequent analyses. The context coding resulted in dropping 8.6% of the pronouns from the verbatim transcriptions. Reliability for this secondary coding was very high. On the 20% of transcripts coded by both coders, Cohen’s kappa was .99 for Me-words, .99 for You-words, and .99 for We-words.

Physiology—Continuous recordings of seven physiological measurements of autonomic and somatic nervous system activity were collected using a system consisting of a Grass Model 7

¹The rating dial data were not included because we chose to emphasize variables (emotional behavior and physiology) that were assessed during the interactions.

12-channel polygraph and a microcomputer with analog and digital input/output capabilities: (a) cardiac inter-beat interval (IBI)—Beckman miniature electrodes with Redux paste were placed in a bipolar configuration on opposite sides of the participant's chest and the interval between successive R-waves of the electrocardiogram (EKG) was measured in ms; (b) skin conductance level—a constant voltage device passed a small voltage between Beckman regular electrodes attached to the palmar surface of the middle phalanges of the first and third fingers of the nondominant hand using sodium chloride in Unibase as the electrolyte; (c) pulse transmission time to the finger—the time interval was measured between the R-wave of the EKG and the upstroke of the peripheral pulse at the finger; (d) finger pulse amplitude—a UFI photoplethysmograph attached to the second finger of the nondominant hand recorded the volume of blood in the finger. The trough-to-peak amplitude of the finger pulse was measured, providing an index of the amount of blood in the periphery; (e) pulse transmission time to the ear—a UFI photoplethysmograph attached to the right earlobe recorded the volume of blood in the ear. The time interval was measured between the R-wave of the EKG and the upstroke of the peripheral pulse at the ear; (f) finger temperature—a Yellow Springs Instruments thermistor was attached to the palmar surface of the first phalange of the middle finger of the dominant hand with surgical tape; and (g) general somatic activity—an electromechanical transducer attached to a platform under the participant's chair generated an electrical signal proportional to the amount of body movement in any direction.

The physiological measures were selected to sample broadly from major organ systems (cardiac, vascular, thermoregulatory, electrodermal, and somatic muscle), to allow for continuous measurement, to be as unobtrusive as possible, and to include measures used in our previous studies of marriage (e.g., Levenson & Gottman, 1983; Levenson et al., 1994) and emotion. A computer program written by one of the authors (RWL) was used to calculate second-by-second averages for each physiological measure for each spouse.

Emotional behavior—Two remotely controlled video cameras, which were partially concealed behind darkened glass, were used to obtain frontal views of each spouse's face and upper-torso. These images were combined into a single split-screen image using a video special effects generator and were recorded on a VHS videocassette recorder. Two lavalier microphones were used to record the couples' conversations. The computer was programmed to enable synchronization between video and physiological data by controlling the operation of a device that superimposed the elapsed time on the video recording and a second device that recorded a synchronization tone on one of the audio channels of the videotape recording. This tone was also used to synchronize the data obtained in the recall session with the data obtained in the interaction session

Emotional behavior during the conflict conversation was processed by a team of coders using the Specific Affect Coding System (SPAFF; Gottman & Krokoff, 1989; SPAFF Version 2.0, Gottman, 1989). SPAFF is a cultural informant coding system in which coders, working with videotapes, consider a gestalt consisting of verbal content, voice tone, context, facial expression, gestures, and body movement. SPAFF treats the stream of behavior as continuous (rather than segmenting it into time blocks or turns at speech), and thus, codes can be given at any time.

For speakers, the positive affect codes are interest, affection, humor, validation (i.e., acknowledgment for partner's feelings), and joy. The negative affect codes are anger, contempt, disgust, belligerence, domineering, defensiveness, fear/tension/worry, sadness, and whining. There is also a neutral code. For listeners, codes are positive, negative, neutral, and stonewalling. As an assessment of reliability, Cohen's kappa was computed to control for agreement by chance alone. The overall kappa for the SPAFF coding was 0.64 (Carstensen et al., 1995).

Marital satisfaction—The Locke-Wallace Marital Adjustment Test (LW; Locke & Wallace, 1959) and the Marital Relationship Inventory (MRI; Burgess, Locke, & Thomas, 1971), two highly validated measures, were used to assess marital satisfaction. The MAT is a 15-item inventory and the MRI is a 22-item inventory.

Data reduction

Language—Two language variables were created for each spouse. The total number of We-words divided by the total number of words spoken was treated as a We-ness variable. The total number of Me-words plus the total number of You-words divided by the total number of words spoken was treated as a Separateness variable.

Physiology—Using the second-by-second data obtained for each physiological measure, means for each spouse for the entire 15-minute conversation were computed. In the current research we focused on cardiovascular, electrodermal, and somatic measures. We computed a composite measure of physiological activation by averaging the standardized means of the following variables for each spouse: cardiac inter-beat interval, pulse transmission time to the finger, finger pulse amplitude, and pulse transmission time to the ear (the standardized scores of the cardiovascular measures were multiplied by -1 so that higher numbers would indicate greater activation), skin conductance, and somatic activity. We have used these kinds of physiological composites in our previous work (e.g., Gross & Levenson, 1997; Mauss et al., 2005; Sturm et al., 2006; Werner et al., 2007). Composites of this sort have a number of advantages: (a) they reduce the number of physiological dependent variables, thus helping control for Type I error; (b) the composite is sensitive to change in any of the included physiological variables, which is important should different subjects respond in different ways to the stimulus; and (c) in general, forming composite measures increases reliability (e.g., Lord & Novick, 1968; Tryon & Bernstein, 2003). In the case of autonomic measures, it has been noted that correlations among measures are often low (e.g., Davidson, 1978; Lacey, 1967; Lazarus, Speisman, & Mordkoff, 1963). This is certainly true when the individual is at rest, but the coherence among these measures increases when individuals are exposed to potent stimuli (Mauss, Levenson, McCarter, Wilhelm, & Gross, 2005). For example, in the present data set, with subjects likely to be highly activated by the conflict discussion, the reliability index for the physiological composite ($\alpha = .41$) was quite comparable to that of the emotional behavior composites (positive emotion $\alpha = .29$; negative emotion $\alpha = .39$). Nonetheless, to make sure the use of the physiological composite did not distort the findings, we also conducted exploratory analyses at the level of individual physiological variables.

Emotional behavior—The number of occurrences of each SPAFF code for each spouse was expressed as a percentage of the total number of SPAFF speaker and listener codes during the interaction. Total positive and total negative composites were computed for each spouse that included both speaker and listener codes. As with physiological data, we often use emotional behavior composite scores (e.g., Kupperbusch, et al, 2003; Tsai, Levenson, & McCoy, 2006) to increase reliability and decrease the number of dependent variables (and associated risk for Type I error). An exploratory analysis at the level of individual SPAFF codes was conducted to insure that the use of the composite did not alter the findings in any important ways

Marital satisfaction—Scores on the LW and MRI inventories were averaged for each spouse. For the entire sample the mean marital satisfaction was 111.5 and the median was 115.25 ($SD=17.61$).

Results

Analyses

Data were analyzed using the actor-partner interdependence model (APIM: Kashy & Kenny, 2000), a data analytic approach designed to deal with dyadic data. The APIM estimates two kinds of effects: actor effects and partner effects. Actor effects are within-person effects: They represent the contribution of an individual's level of a predictor variable to that individual's level of an outcome variable. Partner effects are between-person effects: They represent the contribution of a partner's level of a predictor to an individual's level of the outcome variable. APIM provides separate and statistically independent tests of actor and partner effects, by testing each while controlling for the other. With this approach the dyad can be treated as the unit of analysis, and actor and partner effects are tested with the proper degrees of freedom (see Campbell & Kashy, 2002; Kashy & Kenny, 2000; Kenny, 1996).

We conducted the analyses using HLM 6.0. Models were set up to test the relationship between the four predictor variables (positive emotional behavior, negative emotional behavior, cardiovascular physiology, marital satisfaction), two moderator variables (age, gender) and the two criterion language variables (We-ness and Separateness). Because marital satisfaction has been associated with emotional behavior and physiology (Gottman & Levenson, 1988, 1992; Levenson & Gottman, 1983, 1985), marital satisfaction was entered as a covariate in the models of each of the other three predictor variables. To facilitate interpretation, the emotional, physiological, language, and marital satisfaction variables were all normalized. Multiple imputation with multilevel regression as the imputation method was used to account for missing data. Actor and partner standardized coefficients for the models predicting We-ness and Separateness are reported in Table 2.

Pronoun usage

Across the entire sample, the means (ratio of total use of a type of pronouns to total words) and standard deviations for each type of pronoun were .012 (SD .008) for we-ness and .072 (SD .03) for separateness. Correlations between the two types of pronouns failed to reach significance both for husbands $r(154) = -.126, p = .121$ and wives $r(154) = -.155, p = .057$. Examining the size of the correlation coefficients suggests that there is less than 3% shared variance between We-ness and Separateness pronouns, thus justifying our decision to treat them separately.

Age and Gender Differences in Language

Analyses revealed age and gender differences in language use. With regards to We-ness, consistent with our hypothesis, we found that older couples used more We-ness than middle-aged couples, $\beta = .17, t(154) = 2.51, p < .01$. In terms of Separateness, middle-aged and older couples did not differ, $\beta = -.01, t(154) = -0.178, ns$. Husbands and wives did not differ in their use of We-ness, $\beta = .05, t(154) = 1.23, ns$. However, wives used more Separateness words than husbands, $\beta = -.20, t(300) = -6.72, p < .001$.

Marital Satisfaction

We hypothesized that more We-ness would be associated with higher actor and partner marital satisfaction and that more Separateness would be associated with lower actor and partner marital satisfaction. These hypotheses received partial support. We found no association between We-ness and actor or partner marital satisfaction; however, we found that Separateness was associated with lower actor, $\beta = -.12, t(300) = -2.18, p < .05$, and approached significance for partner marital satisfaction, $\beta = -.12, t(300) = -1.79, p = .07$. Notably, we found that these effects were moderated by significant three-way interactions between age-group,

gender, and marital satisfaction: actor marital satisfaction, $\beta = .29$, $t(300) = 2.098$, $p < .05$; and partner marital satisfaction, $\beta = -.32$, $t(300) = -2.222$, $p < .05$. Simple slope analyses were conducted using a web utility designed to probe interaction effects in hierarchical linear modeling (Preacher, Curran, & Bauer, 2006; Curran, Bauer, & Willoughby, 2006). The results from the simple slope analyses indicated that for actor marital satisfaction the effect of Separateness was found predominantly for older wives, $\beta = -.51$, $t(300) = -2.218$, $p < .05$, but for partner marital satisfaction, this effect was found predominantly for older husbands, $\beta = -.51$, $t(300) = -2.477$, $p < .05$. These results indicate that greater use of Separateness words spoken by older wives are more strongly associated with their own marital dissatisfaction and that Separateness words spoken by older husbands are more strongly associated with the marital dissatisfaction of their wives. Thus, greater use of Separateness words by both spouses appears to be most strongly associated with wives' marital dissatisfaction.

Taken together, these results indicate that We-ness, which reflect the spouses as a collective entity, were not associated with marital satisfaction. In contrast, Separateness, which reflect the spouses as independent entities, were associated with marital dissatisfaction. Further, this latter connection between use of Separateness words and marital dissatisfaction was strongest for older wives

Emotional behavior and physiology

Analyses revealed a number of significant associations between pronoun use and emotional behavior and physiology.

We-ness—Consistent with our hypotheses, greater We-ness was associated with less actor negative emotion, $\beta = -.108$, $t(299) = -2.31$, $p < .05$, and less partner negative emotion, $\beta = -.141$, $t(299) = -2.84$, $p < .01$. This effect was moderated by a significant three-way interaction between age-group, gender, and negativity, $\beta = -.134$, $t(299) = 2.11$, $p < .05$. Simple slope analyses indicated that it was primarily older wives who showed the association between We-ness and less partner negative emotion, $\beta = .310$, $t(299) = -2.91$, $p < .01$. Also consistent with our hypotheses, greater use of We-ness was associated with more partner positive emotion, $\beta = .123$, $t(299) = -1.90$, $p < .05$. Finally, as expected, we found that greater We-ness were associated with lower partner cardiovascular arousal, $\beta = -.19$, $t(299) = 2.26$, $p < .05^2$. Thus, the general pattern of these findings was that greater We-ness was associated with more positive emotional behavior less negative emotional behavior, and greater physiological calm.

Separateness—Consistent with our hypotheses, greater use of Separateness was associated with more actor negative emotion, $\beta = .250$, $t(299) = 5.29$, $p < .001$, and more partner negative emotion, $\beta = .257$, $t(299) = 5.47$, $p < .001^3$. However, our hypotheses that greater use of Separateness words would be associated with fewer positive emotions and greater cardiovascular arousal were not supported. Thus, the general pattern of these findings was that greater Separateness was associated with more negative emotional behavior.⁴

Discussion

The goal of this study was to determine whether the kinds of personal pronouns used by couples when attempting to resolve a marital conflict reflect the emotional nature of their interactions

²The general pattern of findings was the same for each of the specific physiological and emotional behavior variables. The primary predictors of We-words were: (a) physiology – cardiac interbeat interval, finger pulse amplitude, and skin conductance; (b) positive emotion – humor and affection; (c) negative emotion – contempt, domineering, and anger.

³The general pattern of findings was the same for each of the negative emotional behaviors with the major predictors of Me- and You-words as anger, belligerence, defensiveness, sadness, fear/tension, domineering, and contempt.

⁴The same pattern of results emerges when analyzing Me-words and You-words separately.

and their marital satisfaction. Our findings provide substantial evidence that pronoun usage is related to the emotional quality of marital interaction (in both emotional behavior and cardiovascular arousal) as well to marital satisfaction. Specifically, we found that We-ness language (We-words), which reflect a schema of interdependence, shared responsibility, and partnership, were associated with interactions characterized by relatively high levels of positive emotional behavior, low levels of negative emotional behavior, and low levels of cardiovascular arousal. Interestingly, our APIM data analytic procedure, which treats actor and partner effects separately, revealed that these associations were stronger for partners than for actors. Thus, in the context of discussions of marital conflict, when one spouse uses We-ness, the primary soothing or emotion-regulating effect is on the other spouse.

In contrast, Separateness words (Me/You-words), which reflect a schema of independence and a focus on the individual spouses, were associated with interactions characterized by high levels of negative emotional behaviors and with more dissatisfied marriages. These associations were equally strong for both actors and partners, suggesting that the activation of a Separateness schema is particularly toxic to marriages insofar as its influences extend to both spouses. We believe that these findings result from interaction patterns in which spouses use Separateness language as a way of expressing their frustrations in ways that are often a contentious and adversarial. Not surprisingly, couples who interact in this manner are more dissatisfied with their marriages. Thus, these results are quite consistent with previous research demonstrating that the schemas of We-ness and Separateness are associated with important qualities of intimate relationships.

Age, gender and pronoun usage

In this study we found that older couples used greater levels of We-ness than middle-aged couples. These results, and related findings by others (e.g., Sillars et al., 1997), suggest that older couples have a greater sense of shared identity than middle-aged couples likely resulting from older couples, by virtue of their longer marriages, having more experience navigating both the adversities (e.g., working through problems, dealing with crisis) and joys (e.g., celebrating accomplishments of children and grandchildren) associated with marriage. These collective experiences likely lead to greater shared identification.

Although the relationships between pronoun usage and the emotional qualities of conflictive marital interactions were consistent across both age groups, relations between pronoun usage and marital satisfaction did differ as a function of age and gender. The association between greater use of Separateness words and actor marital satisfaction was found for older wives and the association between greater use of Separateness words and partner marital satisfaction was found for older husbands. Thus, the pattern of results indicates that the association between greater use of Separateness words and greater marital dissatisfaction was most prominent for older couples. Further, for older couples, wives marital dissatisfaction was most strongly associated with both husbands and wives use of Separateness words. We speculate that this result reflects differences in the social worlds of middle-aged and older individuals. In middle-age, social networks are larger, in large part due to the presence of workplace relationships. If middle-aged couples do not forge a collective identity, this can be compensated for by other relationships. As people age, however, social networks contract and the marriage becomes an increasingly important source of social support (Lang, 2000; 2001; Lang & Carstensen, 1994). Older marriages that do not forge a collective identity are less likely to provide critical social support and thus will be experienced as less satisfying.

With regards to gender, the finding of stronger relationship between pronoun usage and marital satisfaction for wives than for husbands are consistent with gender differences in self-construals. Whereas women's self-construals are characterized by relational interdependence in which women incorporate representations of significant others into their self-concept, men's

self-construals tend to be more independent and less relationship driven (Cross & Madson, 1997a, 1997b). Consistently, research has documented that the marital satisfaction of wives has been more strongly associated with the emotional quality of marital interactions than for husbands (Kiecolt-Glaser & Newton, 2001). Wives can be thought to be the barometer of distressed marriages as indicated by findings that wives' autonomic and immunological responses are greater predictors of future marital quality than husbands (Gottman & Levenson, 1992; Kiecolt-Glaser, Glaser, Cacioppo, & Malarkey, 1998). The findings that the relationship between pronoun usage and marital satisfaction is particularly strong for older wives suggest that this sensitivity of wives to the interpersonal structure of the relationship may become even stronger as they age.

Strengths and limitations

This study builds upon and extends prior research on schemas of We-ness and Separateness in a number of ways: (a) operationalizing schemas in terms of pronouns that occur during naturalistic conversations, (b) using text analysis methodology, (c) assessing emotional behavior and physiology, and (d) studying middle-aged and older individuals in long-term marriages. Limitations include the use of cross-sectional comparisons between age groups (which confound age and cohort effects), the exclusive use of couples in long-term first marriages (which confound age of the individual with duration of marriage), and sampling of couples that are representative of a particular community (with associated issues of generalization).

Conclusion

Personal pronouns that convey schemas of We-ness and Separateness that are used during conflictive marital interactions are highly meaningful psychologically. These speech particles reveal important information about the emotional qualities of marital interaction and about marital satisfaction. The use of a particular pronoun marks a natural and almost entirely unconscious representation of the nature of the identification with self and other. Using We-ness language implies a shared identification between spouses, even when the conversation is focused on an area of conflict. Consistent with this, We-ness was associated with more positive and less negative emotion behaviors and with lower cardiovascular arousal. In contrast, Separateness language implies a greater sense of independence and distance in the relationship. Compared with We-ness, Separateness was associated with a very different set of marital qualities including more negative emotional behavior and greater marital dissatisfaction. Thus, it appears that pronouns, a seemingly innocuous part of everyday speech, provide an important window into the inner-workings of intimate relationships, the qualities of the connections between partners, and the ways that emotions are expressed and regulated as couples deal with the inevitable problems that arise in married life.

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Appendix

Me- and You-Words

I
I'D
I'LL
I'M
I'VE
ME
MINE
MY
MYSELF
YOU
YOU'D
YOU'LL
YOU'RE
YOU'VE

YOUR
YOURS
YOURSELF

We-Words

OUR
OURS
OURSELVES
US
WE
WE'D
WE'LL
WE'RE
WE'VE

Table 1

APIM standardized coefficients for Marital Satisfaction, Positive Emotion, Negative Emotion, and Physiology predicting Pronoun categories.

	We			Me and You				
	Marital Satisfaction	Positive Emotion	Negative Emotion	Physio	Marital Satisfaction	Positive Emotion	Negative Emotion	Physio
Gender	.047	.033	.040	.033	-.203***	-.210***	-.204***	-.207***
Age Group	.177**	.177**	.200**	.113	-.012	-.032	-.014	-.001
Actor effect	-.030	.018	-.108*	-.075	-.124*	-.048	.250***	-.040
Partner effect	.052	.123*	-.141**	-.185*	-.119	.022	.257***	-.009
Age X Actor effect	.092	.089	-.013	.052	-.061	.031	.022	.012
Age X Partner effect	.004	-.060	.036	-.049	-.060	.019	.033	-.057
Gender X Age X Actor effect	-.020	-.072	-.091	.035	.296*	-.067	.003	.060
Gender X Age X Partner effect	.008	.034	.134*	.012	-.323*	.006	.039	-.102

Table 2

Descriptive statistics of the pronoun usage by age group presented as the ratio of pronouns relative to total words spoken. Test statistics are standardized coefficients from APIM analyses.

	Middle-Aged		Old		β
	M	S.D.	M	S.D.	
We	.01	.08	.013	.008	.177**
Me and You	.072	.025	.069	.025	-.012
	* <.05;				
	** <.01;				
	*** <.00				