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Asymmetric Partner Pronoun Use and Demand-Withdraw Interaction in Couples Coping with Health Problems

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Abstract

Recent research links first-person plural pronoun use (*we*-talk) by individual romantic partners to adaptive relationship functioning and individual health outcomes. To examine a possible boundary condition of adaptive *we*-talk in couples coping with health problems, we correlated asymmetric couple-level *we/I*-ratios (more *we*-talk relative to *I*-talk by the spouse than the patient) with a concurrent pattern of directional demand-withdraw (D-W) interaction in which the spouse demands change while the patient withdraws. Couples in which a partner who abused alcohol ($n = 65$), smoked cigarettes despite having heart or lung disease ($n = 24$), or had congestive heart failure ($n = 58$) discussed a health-related disagreement during a video-recorded interaction task. Transcripts of these conversations provided measures of pronoun use for each partner, and trained observers coded D-W patterns from the recordings. As expected, partner asymmetry in *we/I*-ratio scores predicted directional demand-withdraw, such that spouses who used more *we*-talk (relative to *I*-talk) than patients tended to assume the demand role in concurrent D-W interaction. Asymmetric *I*-talk rather than *we*-talk accounted for this association, and asymmetric *you*-talk contributed independently as well. In contrast to previous studies of *we*-talk by individual partners, the present results identify dyad-level pronoun patterns that clearly do not mark beneficent processes: asymmetric partner *we/I*-ratios and *you*-talk reflect problematic demand-withdraw interaction.

Keywords

pronouns; close relationships; health problems; text analysis; demand-withdraw

A growing body of research suggests that communal coping – a process in which partners view a problem or stressor as *ours* rather than *yours* or *mine*, and take *we*-based action to address it (Lyons, Mickelson, Sullivan, & Coyne, 1998) – has positive implications for couple relationships and individual health. In the relationship realm, couples' *we-ness* versus separateness is associated with relationship quality and positive relational outcomes (Buehlman, Gottman, & Katz, 1992; Mills, Clark, Ford, & Johnson, 2004), and in some contexts, first-person plural pronoun use (*we*-talk) during couple communication correlates with positive emotional behaviors and effective problem solving (Seider, Hirschberger, Nelson, & Levenson, 2009; Simmons, Gordon, & Chambless, 2005; Williams-Baucom,

Atkins, Sevier, Eldridge, & Christensen, 2010). Research in the health arena also suggests that *we*-talk by individual partners in couples coping with health problems can predict favorable individual health outcomes (Rohrbaugh, Mehl, Shoham, Reilly, & Ewy, 2008; Rohrbaugh, Shoham, Skoyen, Jensen, & Mehl, 2012), but the boundary conditions of this association are not clear.

The present study adopts an interpersonal systems perspective to examine possible adaptive limits of *we*-talk in three samples of couples coping with health problems. If a circumstance exists in which *we*-talk marks *problematic* rather than adaptive patterns of marital interaction, this might be most evident at a dyadic level of analysis, when partners attempting to resolve a conflict use first-person pronouns in discrepant ways. Thus, by shifting the unit of analysis from individuals to dyads and focusing on behavioral sequences (what partners actually say or do when interacting with each other) rather than internal experiences (what they think and feel), we investigated possible associations between asymmetric partner pronoun use and a particular demand-withdraw (D-W) interaction cycle, in which one partner (here, the spouse) demands change while the other resists and withdraws. This D-W pattern may help to maintain some health problems, as it appears to predict poor adherence to medical regimen (Rohrbaugh & Shoham, 2011).

Pronouns as Markers of Relational Processes

Assessing personal pronoun use through automatic text analysis is a relatively new approach to studying close relationships. Pennebaker and colleagues, who developed the Linguistic Inquiry and Word Count (LIWC) software, proposed that speech particles, including personal pronouns, are useful markers of psychological processes such as emotional states, cognitive styles, and social identity because they reflect linguistic style over content and are more impervious than nouns and verbs to conscious word choice (Pennebaker, Mehl, & Niederhoffer, 2003). In this way, automatic text analysis may be less vulnerable to social desirability bias than traditional questionnaire and interview methods, especially for measuring evaluative constructs such as the quality of one's social relationships (Pressman & Cohen, 2007).

While first-person plural pronoun use by individuals appears to be a marker of group identity and social integration (Cialdini et al., 1976; Cohn, Mehl, & Pennebaker, 2004; Gortner & Pennebaker, 2003; Pennebaker & Lay, 2002; Stone & Pennebaker, 2002), research with couples suggests that *we*-talk during marital interaction is often associated with adaptive relationship functioning. For example, studies relating couples' pronoun use to individuals' reports of relationship quality found that *we*-talk associated with increased relational commitment, marital satisfaction, and shared identity as a couple (Sillars, Shellen, McIntosh, & Pomegranate, 1997). Similarly, in observational studies of couple interaction, *we*-talk correlated with concurrent expression of positive emotion (e.g. affection), decreased negative emotional behaviors (e.g. anger), lower physiological arousal, and effective problem solving by relationship partners (Seider et al., 2009; Simmons et al., 2005; Williams-Baucom et al., 2010). Importantly, many of these studies also included measures of second-person pronoun use, and a common finding has been that *you*-talk correlates with

negative or conflictual features of couple interaction such as criticism and blame (Simmons et al., 2005; Williams-Baucom et al., 2010).

Research at the University of Arizona has extended couple pronoun research to the health arena by investigating *we*-talk as an implicit marker of a communal orientation to coping with health problems. In a study with heart failure patients and their spouses, *we*-talk by spouses during a conjoint coping interview predicted a favorable symptom course for patients over the following six months, independent from what the patients' own *we*-talk predicted (Rohrbaugh et al., 2008). A similar finding emerged in an intervention study with health-compromised smokers and their spouses (Rohrbaugh et al., 2012), where *we*-talk by spouses during a baseline conflict discussion and *we*-talk by *both* partners during the couple-focused counseling sessions predicted patients' post-treatment cessation success. Finally, in a recent study of couples coping with breast cancer, *we*-talk by spouses correlated with better dyadic adjustment and marginally lower depressive symptoms for patients (Robbins, Mehl, Smith, & Weihs, 2012). Interestingly, each of these studies found that first-person plural *relative* to singular use (*we/I*-ratio) tended to be a stronger predictor of health outcomes than *we*-talk alone, suggesting that consideration of first-person singular pronouns (*I*-talk) is also important. Nonetheless, virtually all relevant pronoun research to date – including studies of couples – has focused on *we*-talk by individual partners rather than on dyad-level patterns such as total *we*-talk by the couple or asymmetries in which one partner uses more *we*-talk than the other does.

The Present Study: An Interpersonal Systems Approach

While current literature suggests that partners' use of *we*-talk can mark positive relationship functioning and communal coping with health problems, it is unlikely that *we*-talk *always* marks adaptive processes. As noted above, the overarching aim of the present study is to examine possible limits, or boundary conditions, of adaptive *we*-talk by shifting the level of analysis from individuals to dyads and focusing on observable sequences (systems) of interpersonal behavior more than partners' thoughts and feelings. Of interest is whether asymmetry in couples' use of first-person plural pronouns – specifically, more *we*-talk by the spouse relative to the patient – maps onto a particular couple pattern of D-W interaction, in which the spouse pursues, criticizes, or demands change while the patient distances, withdraws, or resists. Such an association would suggest a limit to adaptive *we*-talk, as D-W interaction is not only a well-established marker of poor relationship quality (Christensen & Shenk, 1991; Williams-Baucom et al., 2010), but also appears to correlate with compromised health behavior (Rohrbaugh & Shoham, 2011).

In the context of coping with health problems, it is not uncommon for a spouse to push a patient to make health-related behavior changes more than vice versa. For example, if a spouse views a health problem as “ours” and the patient does not, one could easily imagine a D-W pattern, where persistent pushing for *we*-ness by the spouse (e.g., “Please stop filling *our* lungs with smoke”) leads to an equally persistent individualistic stance by the patient (e.g., “It's *my* body and *I'll* smoke if I want to”), leading to more communal requests by the spouse, more resistance by the patient, and so on. In the health arena, patterns of spouse-demand/patient-withdraw are associated with poor health outcomes, including non-

compliance with the medical regimen among congestive heart failure patients (Rohrbaugh & Shoham, 2005), low readiness to change and decreased retention in treatment among problem drinkers (Shoham, Rohrbaugh, Stickle, & Jacob, 1998), and continued cigarette use among health-compromised smokers (Rohrbaugh, Shoham, & Dempsey, 2009). Interestingly, while most studies have found that D-W tends to be gender-linked, with women more often demanding and men more often withdrawing (Christensen & Heavey, 1993), a rather different picture emerges when a health problem is at stake: Here, a partner's role as patient versus spouse appears to override biological sex in predicting who demands and who withdraws – at least when the topic of discussion is the patient's health (Rohrbaugh & Shoham, 2011).

An interpersonal systems perspective on health problems both connects to and departs from the broader literature on social influence, communal coping, and health-related behavior change (Rohrbaugh & Shoham, 2011). For example, there are clear connections to research on *social control*, concerned with the regulatory role relationships play in encouraging (or sometimes hindering) a healthy lifestyle (e.g. Lewis & Rook, 1999), and also to research on communal coping in an interdependence theory framework (e.g. Lewis et al., 2006; Manne et al., 2004). Thus, rather than aiming to understand an individual's affective and behavioral responses to a partner's influence strategies, an interpersonal systems approach to social control looks for circular redundancies in the interconnected behaviors of *both* participants. Similarly, while an interdependence theory analysis of communal coping would emphasize internal processes like “transformation of motivation” (Lewis et al., 2006), a systemic analysis attaches less importance to what partners think than to what they actually *do* (and say) in observable, repeating sequences of interaction. Ironic cycles of D-W interaction epitomize such circular interpersonal processes, and formulations of problem maintenance based on this idea offer useful directions for strategic intervention – someone must apply less of the same solution to break the pattern (Rohrbaugh & Shoham, 2011).

The present study extends current literature on couples' pronoun use in several ways. First, as mentioned above, it expands the unit of analysis from individual partners to the dyad, creating truly relational data that reflect the behavior of the couple as a unit (Fisher, Kokes, Ransom, Phillips, & Rudd, 1985). Just as D-W is a purely relational variable, the present study utilizes pronoun asymmetry scores for the couple, rather than for the individual partners, to reflect disproportionate pronoun use by one partner relative to the other. Second, the analyses address and control for potential third variables that could explain an association between *we*-talk asymmetry and D-W, including couples' overall level of *we*-talk, couples' total word count, and language style matching (LSM), a linguistic indicator of dyadic synchrony based on function word similarity (Ireland et al., 2011). These control variables are relational, or dyadic, as well.

Third, while most studies of couples and health investigate a single sample of couples coping with a single health problem, this study examines three samples of couples with different types of health problems. The first sample consists of couples in which one partner had problematic alcohol use, the second of couples in which one partner continued to smoke cigarettes despite having heart or lung disease, and the third of couples in which one partner had congestive heart failure. In addition, all three samples have both male and female

identified patients. Fortuitously, video recordings of couple interaction available for each of these samples made linguistic correlates of D-W interaction amenable to examination. Although recordings of couple interaction were available in at least two contexts for each sample, the study focuses only on conflict discussions that followed roughly comparable task instruction across the samples. The main reason we chose to analyze conflict discussions rather than collaborative discussions is that D-W should be most evident in this context, thereby increasing the likelihood of detecting associations between D-W and discrepant partner pronoun use during the same interaction segment.

Also fortuitous was the availability of a common self-report measure of couples' relationship quality for each of the three samples, based on Heavey, Larson, Zumtobel and Christensen's (1996) *constructive communication* scale. This made it possible to examine the specificity of asymmetric partner pronoun use as a possible marker of problematic relationship patterns. In other words, if the hypothesized associations appear, are they limited (specific) to the immediate context of the (demand-withdraw) interaction or do they also correlate with partners' broader perceptions of relationship quality?

To summarize, the main hypothesis is that asymmetrical patterns of pronoun use, where spouses use more *we*-talk (or less *I*-talk) than patients do, will be isomorphic to, and co-occur with, D-W patterns in which the spouse assumes a demand role and the patient a withdraw role. We predict that this association will occur independently from the couple's total (mean) level of *we*-talk, total word count, and language-style matching. A secondary research question concerns the role of *you*-talk in explaining associations with D-W, based on previous findings that *you*-talk correlates with negative features of couple interaction such as criticism and blame (Simmons et al., 2005; Williams-Baucom et al., 2010). Here we predict that *you*-talk asymmetry, in which the spouse uses more *you*-talk than the patient, will also correlate with directional D-W in which the spouse assumes a demand role.

There are also several exploratory research questions – two concerned with possible moderation of these associations by the patient's sex or type of health problem and another with the relationship-quality specificity issue noted above. For example, if the three samples differ in overall levels of D-W, associations between partner *we*-talk asymmetry and directional D-W interaction might be more pronounced when D-W is high (i.e. if D-W floor effects constrain the magnitude of the correlation between D-W and *we*-talk asymmetry.) Also, given that relationship quality appears to have greater consequences for the health of women than men (Kiecolt-Glaser & Newton, 2001; Rohrbaugh, Shoham & Coyne, 2006), associations between pronoun markers and D-W may vary accordingly. Finally, the couple-level pronoun patterns of interest will have more general significance as markers of relationship quality if they prove to correlate with partners' reports of constructive communication in addition to concurrently observed D-W.

Method

Participants

Drawing on three samples totaling 158 couples, we performed study analyses using data from 147 couples for whom suitable transcripts and videos of conflict discussions were

available. The full sample included 65 couples in which one partner abused alcohol (alcohol sample), 24 couples in which one partner continued to smoke in the face of health problems (smoking sample), and 58 couples in which one partner had congestive heart failure (heart sample).

Demographics—The identified patients in the three full samples were predominantly male (72%) and white (86%). Gender distributions varied marginally across samples, $\chi^2(2, N = 158) = 5.57, p = .06$, with a slightly greater percentage of male identified patients in the alcohol sample than the smoking and heart samples. Mean couple age (averaged across partners) varied considerably, ($M = 52.8$, range: 20.5 – 83.0 years), as did relationship duration ($M = 21.7$, range: 1 – 62 years), and there were significant sample differences on these two correlated variables. For example, heart failure couples were older, on average, than alcohol and smoking couples, $F(2, 157) = 153.19, p < .01$, with no difference between alcohol and smoking couples.

Clinical characteristics—Patients in the alcohol sample qualified for a primary DSM diagnosis of alcohol abuse or dependence (American Psychiatric Association, 2000) and scored a 7 or greater on the Michigan Alcohol Screening Test (MAST; Selzer, 1971). The drinkers had a mean MAST score of 31.5 ($SD = 9.2$) and a mean score of 25.0 ($SD = 11.2$) on the Total Alcohol Involvement scale of the Alcohol Use Inventory (AUI; Wanberg, Horn, & Foster, 1977). Responses to a personal history questionnaire revealed that over half (57%) of the drinkers had some form of prior treatment for a drinking problem, 65% reported having been arrested for an alcohol-related problem, and 57% said they had an alcoholic parent. Although 58% reported using marijuana or another illegal drug in the past year, alcohol was the primary drug of abuse for all identified patients, and none met criteria for substance dependence.

Patients in the smoking sample continued to smoke cigarettes despite having diagnosed heart or lung disease, or at least two additional documented risk factors (other than smoking) for coronary heart disease (e.g. hypertension, diabetes). In 8 couples the patient's partner also smoked, and in 18 couples only the patient smoked. Regardless of partner smoking status, the primary-smoker patients had smoked at least 10 cigarettes per day for the previous 6 months, and all had reported multiple unsuccessful prior quit attempts. Clinically, 65% of identified patients (but none of their partners) had a diagnosed heart or lung problem aggravated by smoking. At the time of initial screening, identified patients reported averaging 25.1 ($SD = 9.1$) cigarettes a day. On the Fagerstrom Test of Nicotine Dependence, where scores in the 6–7 range indicate “high dependence” (Heatherton, Kozlowski, Frecher & Fagerstrom, 1991), identified patients had mean scores of 6.2 ($SD = 2.3$). Nearly half of identified patients (45%) had a previous alcohol or drug problem, and 45% had scores in the clinical distress range of an abbreviated Hopkins Symptom Checklist (HSCL-25; Hesbacher, Rickels, Downing, & Stepansky, 1978).

Patients in the heart sample carried a confirmed diagnosis of congestive heart failure with a left ventricular ejection fraction (LVEF), usually documented by echocardiogram during the previous 6 months, less than or equal to 40 ($M = 29.1, SD = 8.7$). The mean New York Heart Association (NYHA) functional class was 2.3 ($SD = 0.8$) on a 1–4 scale, with 13.3%, 55.0%,

20.0%, and 11.6% of the patients in Classes I, II, III, and IV, respectively. (Higher NYHA scores indicate greater severity; Domanski, Garg, & Yusuf, 1994). On average, heart failure had been diagnosed 4.8 years earlier ($SD = 5.1$) and heart problems 11.5 years earlier ($SD = 9.8$). Almost half (42%) of the patients had experienced myocardial infarction, and prevalence rates for diabetes and hypertension were 32% and 25%, respectively.

Procedures

Marital interaction tasks—The main pronoun and D-W measures came from videotaped marital interaction tasks that were roughly comparable across samples. Although instructions for the tasks varied somewhat, all of the discussions concerned a conflict, most were related to health, and all took place without the interviewer present. Partners each identified 2–3 areas of conflict or disagreement in their relationship and the interviewer helped them select a discussion topic on which they both agreed. All couples received instructions “to discuss the topic as they normally would ... and attempt to resolve the issue.” The duration of the interaction tasks did differ somewhat across the samples, with alcohol and heart couples discussing the topic for 10 minutes and smoking couples for 5 minutes. Another difference was that couples in the alcohol and smoking samples completed the interaction tasks in the research laboratory as part of baseline assessments, while heart couples completed the task as part of an in-home assessment.

Measures

Couple-level pronoun measures—Research assistants prepared separate transcripts of the videotaped interaction tasks for the patient and spouse/partner in each couple so that the investigators could subject these transcripts to automatic text analysis using Pennebaker et al.’s (2007) Linguistic Inquiry Word Count (LIWC) software. The LIWC program presented pronoun use scores (*we-talk*, *I-talk*, and *you-talk*) as proportions of each person’s total word count, and we created an additional individual variable representing each partner’s use of first-person plural *relative* to first-person singular pronouns (*we/I-ratio*), with total first-person pronouns as the denominator in the ratio.

To address the main study hypotheses, we then combined the individual-level *we/I-ratio*, *we-talk*, *I-talk*, and *you-talk* scores into couple-level measures of asymmetric partner pronoun use. We did this for each of the pronoun variables by subtracting the patient’s score from the spouse’s, thus yielding indices of *we/I-ratio asymmetry*, *we-talk asymmetry*, *I-talk asymmetry*, and *you-talk asymmetry*, with higher scores reflecting relatively greater use of a pronoun pattern by the spouse than by the patient. As noted above, the initial plan was to take *we/I-ratio asymmetry* as the primary pronoun variable of interest because previous couple pronoun studies had found this indicator most consistently associated with health outcomes; however, these previous studies focused on pronoun use by *individual* partners, which may have limited the relevance of their findings to the couple-level analyses we will report here.

Other couple-level pronoun measures, which served mainly as covariates or control variables in the main analyses, included *total we/I-ratio*, *total we-talk*, *total I-talk*, and *total you-talk* (each computed as the mean of the two partners’ individual scores); *total word*

count (the mean of the two partners' individual word counts); and *language style matching*, a relational index of linguistic synchrony between two partners based on how similarly they use function words such as prepositions and conjunctions (Ireland et al., 2011).

Note again that both the asymmetric and total pronoun variables shift measurement from the level of individuals to the level of couples, to reflect partners' *relative* pronoun use as a couple rather than pronoun use by individual partners. The *we/I-ratio asymmetry* variable is particularly relevant to the main hypothesis – that greater *we*-talk by the spouse relative to the patient would be associated with directional D-W interaction.

Demand-withdraw interaction—As the first step in generating couple-level behavioral measures of concurrent D-W interaction, teams of trained raters observed the same videotaped interactions we used for the linguistic analyses. Raters were trained using the Demand-Withdraw Rating Scale (Christensen & Heavey, 1993). They practiced as a group using interaction tasks from a previous study until they achieved adequate interrater reliability.

At least four raters coded all of the interaction segments for each sample using Christensen and colleagues' Demand-Withdraw Rating Scale (Christensen & Heavey, 1993). The observers made separate (raw) ratings of demand and withdraw behaviors for each partner on five dimensions – three related to demand behavior (pursues discussion, blames, pressures for change) and two related to withdrawal (avoids, withdraws). For example, the dimension *pressures for change* included behaviors such as “requests, demands, nags, or otherwise pressures for changes in partner” and the dimension *withdraws* included “withdraws, becomes silent, or refuses to discuss a particular topic.” We then combined these ratings to produce two couple-level D-W variables: (a) spouse-demand/patient-withdraw, calculated as the sum of the spouse's mean score on the three demand dimensions and the patient's mean score on the two withdraw dimensions; and (b) patient-demand/spouse-withdraw, calculated as the sum of the patient's mean score on the three demand dimensions and the spouse's mean score on the two withdraw dimensions. Across the samples, reliability coefficients revealed acceptable levels of agreement among the judges for spouse-demand/patient-withdraw and patient-demand/spouse-withdraw scores (median *effective reliability* = .90, *range* .85 – .95), as well as for the 10 individual rating dimensions (5 for each partner) comprising the demand and withdraw scores. With dimension ratings collapsed across judges, consistency coefficients for the D-W dimensions were also satisfactory, with Cronbach alphas ranging from .52 to .82.

As with the pronoun measures, we combined the two D-W patterns into higher-order D-W variables germane to testing the central study hypotheses. Of particular interest was a *directional demand-withdraw* variable, similar to what Christensen and colleagues called a *role* variable, the latter capturing gender-related skew toward wife-demand/husband-withdraw relative to husband-demand/wife withdraw (Christensen & Heavey, 1993). Here, however, we defined *role* based on a partner's status as patient or spouse rather than husband or wife, based on evidence that the former appears to override gender in shaping who demands and who withdraws when couples discuss one of the partner's health problems (Rohrbaugh & Shoham, 2011). Accordingly, two higher-order D-W variables were central

to testing the main hypothesis: (a) a *directional demand-withdraw role* variable, calculated as spouse-demand/patient-withdraw *minus* patient-demand/spouse-withdraw, with positive scores indicating greater spouse demand; and (b) a *total demand-withdraw* variable, calculated as the mean of spouse-demand/patient-withdraw and patient-demand/spouse-withdraw. Similar to the asymmetric pronoun variables, the directional D-W role variable reflects skew in a particular direction (greater spouse-demand/patient-withdraw relative to patient-demand/spouse-withdraw) and captures the asymmetry of these patterns in a single score. Most important, it allows for investigating whether directional patterns of D-W do in fact correlate with asymmetrical patterns of patient and spouse pronoun use.

Constructive communication—Participants in all three samples completed the Constructive Communication subscale of the Communication Patterns Questionnaire (CPQ-CC; Heavey, Larson, Zumtobel, & Christensen, 1996), a seven-item measure of the quality of couples' communication. Each sample had at least one additional measure of relationship quality (e.g., Spanier & Thompson's [1982] Dyadic Adjustment Scale; Hendrick's [1988] Relationship Satisfaction Scale), which in most cases correlated highly with constructive communication. Items on the CPQ-CC assess positive and negative communication behaviors, which the scoring procedure combines into a single score for each partner (sum of positive minus sum of negative items). For example, mutual negotiation, in which "both members suggest possible solutions and compromises" assessed positive communication, while mutual blame, in which "both members blame, accuse, and criticize each other" assessed negative communication. The fact that patient and spouse CPQ-CC scores correlated highly in each of the three samples ($r_s > .64$) justified averaging them into a single, dyad-level variable reflecting each couple's perception of the quality of their communication (Mean across samples: $M = .40$, $SD = 6.29$, all $as > .80$).

Other control variables—In addition to pronoun variables described above (e.g., total word count, total we/I-ratio, language-style matching, etc.), other potential control variables for the main analyses included couple-level demographic characteristics such as the patient's sex, mean partner age, and relationship duration.

Data Analysis Plan

Before testing the main hypothesis, we performed preliminary individual-level analyses to investigate (a) correlations between patient and spouse pronoun use, including whether patient-spouse concordance varied by sample; and (b) mean-level differences in individual pronoun use as a function of the partners' role (as patient vs. spouse), patient sex and sample. These preliminary analyses provided a basis for comparing the present results with previous pronoun studies in which the individual partners were the unit of analysis. We next performed preliminary couple-level analyses to examine mean-level differences in asymmetric and total pronoun use, and directional and total D-W interaction as a function of patient sex and sample. Additional analyses examined how the main couple-level pronoun and D-W variables correlated with demographic and linguistic variables that could serve as possible covariates.

Hierarchical regression analyses addressed the hypothesis that asymmetrical couple-level pronoun use would reflect parallel patterns of D-W, in which the spouse assumed a demand role and the patient a withdraw role. The primary regression model included asymmetric *we/I*-ratios as the predictor variable, with total couple *we/I*-ratios and total D-W interaction entered as control variables in step one. Entering additional couple-level covariates (e.g., total word count, LSM) in step 2 then allowed us to determine if these variables influenced the main association of interest. Follow-up analyses for asymmetric *we*-talk, *I*-talk, and *you*-talk similarly attempted to isolate associations between two asymmetrical patterns of behavior from overall levels of the two component variables (e.g., total couple *we*-talk and total D-W). A final set of exploratory analyses examined the relative contribution of *we/I*-ratio and *you*-talk asymmetry and the possible moderating role of patient sex and problem type (sample) in associations between pronoun asymmetry and directional D-W interaction.

Results

Descriptive statistics for the main pronoun variables appear in Table 1. In the top panel, proportions at the individual-level based on each partners' total word count indicate that first-person plural pronouns (*we*-talk) occurred with relatively low frequency for both patients and spouses compared to first-person singular pronouns (*I*-talk), with second-person pronouns (*you*-talk) in between. The bottom panel in Table 1 shows couple-level variables that reflect partner asymmetry and total pronoun use (averaged across partners). Frequencies of individual-level first-person singular and plural pronouns were consistent with previous literature in which plural pronouns were generally less frequent. Total couple *we*-talk was also infrequent but sufficiently prevalent and variable for analysis.

Individual-level Analyses

Associations between individual partners' pronoun scores revealed moderate patient-spouse concordance for *we/I*-ratio ($r = .49, p < .01$), *we*-talk ($r = .55, p < .01$), and *you*-talk ($r = .19, p < .05$), but not for *I*-talk scores ($r = .07, n.s.$). These patient-spouse associations were generally consistent across the three samples, except in the smoking sample, where partners' *we/I*-ratio scores were uncorrelated. In addition, partner *we*-talk and *I*-talk scores correlated negatively and significantly for both patients ($r = -.44, p < .01$) and spouses ($r = -.29, p < .01$).

Mixed model analyses of variance (ANOVAs) with partner role (patient vs. spouse) as a within-couple effect and patient sex (male vs. female) and sample (alcohol, smoking, heart) as between-couple effects revealed main effects of role for *we/I*-ratio, $F(1, 144) = 13.06, p < .01$, *I*-talk, $F = 17.34, p < .01$, and *you*-talk, $F = 12.68, p < .01$. Specifically, spouses had higher *we/I*-ratio and *you*-talk scores than patients, but patients used more *I*-talk than spouses did. There was no effect of role for *we*-talk, $F = 2.56, n.s.$ The same ANOVAs also revealed significant main effects of sample for the *we/I*-ratio, $F(2, 144) = 6.17, p < .01$, and for *we*-talk, $F = 6.30, p < .01$, but not for *I*-talk, $F = .40, n.s.$, or *you*-talk, $F = 2.30, n.s.$ Post-hoc tests confirmed that heart failure couples had greater *we/I*-ratios and used more *we*-talk than alcohol and smoking couples ($ps < .05$), while the latter two groups did not differ. Although there were no main effects of patient sex, there was a significant role x patient sex

interaction for the *we/I*-ratio, $F(1, 144) = 4.40, p < .05$, suggesting that the role difference in communal pronoun use (spouse > patient) was greatest when the identified patient was female rather than male.

Couple-level Analyses

Sample x patient sex ANOVAs for the couple-level pronoun and D-W variables (i.e. asymmetry and total scores) found no significant main effects of sample for the four pronoun asymmetry variables or for directional D-W interaction. On the other hand, some of the dyad *total* scores did vary significantly by sample. This was true for total *we/I*-ratio, $F(2, 144) = 6.17, p < .01$, and *we*-talk, $F = 6.30, p < .01$, where heart couples' communal pronoun scores were higher than those of smoking and alcohol couples, and especially for total D-W interaction, $F(2, 141) = 93.92, p < .001$, where D-W scores among the alcohol couples far exceeded those of smoking and heart couples. The latter finding may to some extent reflect rater calibration differences, as different teams of trained observers coded video recordings from the three samples. Still, our impression from less systematic reviews of these videos is that the alcohol couples did in fact show substantially more D-W than couples in the other two samples. The only notable patient sex effect in the couple-level ANOVAs was for *we/I*-ratio, $F = 4.40, p < .05$, where consistent with the individual-level ANOVA, asymmetric partner pronoun use was more prevalent when the identified patient was female.

Correlations among the couple-level pronoun and D-W variables appear in Table 2. Notable here is that total *we/I*-ratio and total *we*-talk correlate negatively and significantly with total D-W interaction, which essentially replicates the common association between communal pronoun use and adaptive couple interaction. This table also begins to show first-order associations between asymmetrical partner pronoun use and D-W interaction, but tests of the main study hypothesis should await multivariate analyses with statistical models that include other, potentially confounding variables as well. A propos those models, Table 2 shows relatively small correlations between partner asymmetry and total dyad scores for key variables of interest, indicating that multi-collinearity is unlikely to compromise including both scores in the same regression equation.

We calculated additional correlations and partial correlations (controlling for total pronoun use) to identify potential covariates for couple-level analyses involving the pronoun and D-W asymmetry variables. Of particular interest were variables associated with directional D-W interaction, as this was to be the dependent variable in the main analyses. Both relationship duration ($r = .22, p < .01$) and language style matching ($r = -.20, p < .05$) correlated significantly with directional D-W interaction, so we accounted for these variables in the later regression analyses.

Pronoun Predictors of Demand-Withdraw Interaction

Hierarchical regression models addressed the hypothesis that asymmetrical patterns of partner pronoun use, particularly those in which spouses use more *we*-talk (or less *I*-talk) than patients do, would correlate with directional patterns of D-W, in which the spouse assumes a demand role and the patient a withdraw role. Consistent with this hypothesis,

couple asymmetry in *we/I*-ratio scores predicted directional D-W interaction independent of couples' total *we/I*-ratio and total D-W interaction, and adding both relationship duration and LSM to the model as covariates did not reduce the statistical effect of *we/I*-ratio asymmetry (Table 3, model 1). Given that the *we/I*-ratio includes two types of first-person pronouns (*we*-talk and *I*-talk), we next examined asymmetries in these separately, again controlling total dyad scores and other covariates. Surprisingly, asymmetric *we*-talk was *not* a significant predictor of directional D-W interaction, but asymmetric *I*-talk was (Table 3, model 2), such that spouse-demand/patient-withdraw correlated with relatively more *I*-talk by the patient than by the spouse. This suggests that *I*-talk rather than *we*-talk drove the association between *we/I*-ratio asymmetry and directional D-W interaction in the previous model.

To complete the pronoun picture, we examined asymmetric and total *you*-talk in relation to directional D-W interaction, both alone and in combination with *we/I*-ratio (Table 3, model 3). These analyses indicate a fairly strong association between asymmetric *you*-talk (more by spouse than patient) and directional D-W interaction. This association remained strong with asymmetric *we/I*-ratio in the regression model, and the latter effect remained significant as well.

Finally, a different regression analysis (not shown in Table 3) examining the relationship between *total* couple *we*-talk and *total* D-W interaction revealed that total *we*-talk remained significantly associated with total D-W after controlling *we*-talk asymmetry, directional D-W, and two other covariates (*standardized* $\beta = -.31, p < .01$). This confirms that total *we*-talk at the couple level was in fact associated with less problematic couple interaction – a finding consistent with the broader individual-level pronoun literature.

Associations with General Communication Quality

To extend the results beyond direct observation of couple interaction in the laboratory, we correlated the pronoun and D-W variables with self-reported couple-level communication quality, measured by Heavey et al.'s (1996) Constructive Communication subscale. As one might expect, this more trait-like measure of couple-level communication quality correlated negatively with total observed D-W interaction, $r = -.46, p < .001$. It did not, however, correlate with the asymmetric or total *we/I*-ratio variables (all r s $< |.20|$). In stepwise regression models, total scores for *we*-talk, *I*-talk and *you*-talk together accounted for significant variance in couple-level constructive communication, $F(3, 115) = 4.28, p < .001$, while the block of partner asymmetry variables did not. Constructive communication related positively to total partner *I*-talk ($\beta = .34, p < .01$) and negatively to total *you*-talk ($\beta = -.30, p < .01$). Thus, although some types of pronoun use during conflict discussions did predict partners' reports of overall communication quality, the results provide no evidence that pronoun asymmetries associated with concurrent D-W interaction have more general relational significance.

Exploratory Moderation Analyses

To determine if the main findings were consistent across the three samples, we performed separate regressions by sample and found essentially similar patterns of results. Similarly,

tests of moderation involving not only sample (problem type) but also patient sex and relationship duration found no evidence that these variables interacted with asymmetric pronoun use in predicting directional D-W interaction. Nor were there notable interactions between asymmetric and total pronoun variables in relation to directional D-W interaction.

Discussion

The main aim of this study was to explore possible limits, or boundary conditions, of adaptive *we*-talk in couples coping with health problems by examining relational patterns of pronoun use during conflict discussions. To do this, we focused on asymmetries in partners' use of first person pronouns (*we/I*-ratio) and hypothesized that greater communal pronoun use by the spouse relative to the patient would co-occur with spouse-demand/patient-withdraw interaction, a pattern itself associated with compromised patient health behavior and poor relationship functioning (Christensen & Shenk, 1991; Rohrbaugh et al., 2002, 2009; Rohrbaugh & Shoham, 2005). At a broad level, the results supported this hypothesis: Across three samples of couples, asymmetric patient-spouse *we/I*-ratio scores were statistically associated with concurrent ratings of directional D-W interaction, even after controlling the couple's total *we/I*-ratio, total D-W, and language style similarity. Surprisingly, however, follow-up analyses revealed that asymmetries in partner *I*-talk rather than *we*-talk accounted for the association with directional D-W interaction, and asymmetric partner *you*-talk correlated with the spouse-demand/patient-withdraw pattern as well.

Unlike previous work, the present study extends measurement of pronoun use by individual partners to the level of the dyad – and only at a relational (partner discrepancy) level do we find evidence of a possible limit to adaptive *we*-talk in couples coping with health problems. If one sums or averages the individual partners' scores and relates this to the couple's total amount of D-W interaction, the result is consistent with findings in the broader literature (Seider et al., 2009; Simmons et al., 2005; Robbins et al., 2012; Rohrbaugh et al., 2008, 2012; Williams-Baucom et al., 2010), where higher levels of *we*-talk typically reflect better relationship functioning (embodied here in less total D-W interaction). In contrast, linguistic correlates of problematic D-W functioning appeared primarily in dyadic configurations where one partner used a particular pronoun form more than the other did. At the same time, we found no appreciable associations between the same partner pronoun asymmetry variables and a more global self-report measure of constructive communication, even though this same self-report measure correlated negatively and significantly (as expected) with observers' ratings of total D-W interaction. These null associations might to some extent reflect the special nature of the health-related conflict discussions we studied, which may not capture important aspects of how a couple communicates about other topics. In any case, the present results provide little evidence that linguistic asymmetries mark couple relationship problems in any general way.

The most surprising finding is that partner asymmetry in *we*-talk alone was unrelated to directional D-W interaction. Instead, the central finding for *we/I*-ratio appeared primarily due to asymmetrical *I*-talk, and what this means is not immediately obvious. Given that individual-level *we*-talk was less frequent and variable than *I*-talk, one possibility is that distributional properties of *we*-talk may have constrained the likelihood of detecting its

statistical correlation with directional D-W. This is unlikely, however, because proportional frequencies of *we*-talk and *I*-talk in this study are similar to those in previous studies that did find associations between *we*-talk and health-related outcomes (Rohrbaugh et al., 2008, 2012).

A more plausible consideration is that the adaptive significance of *we*-talk, and even *I*-talk, may depend on the relational context in which it occurs. In particular, studies finding positive associations with health variables have typically sampled partner speech during cooperative, coping-focused interviews or therapy sessions (e.g., Rohrbaugh et al., 2008, 2012). Here, we deliberately selected conflict discussions to maximize the possibility of observing D-W interaction. A working hypothesis, therefore, is that communal implications of *we*-talk may be most evident in conversations that have an explicitly collaborative purpose. Still, this does not explain the null correlation between *we*-talk asymmetry alone and directional D-W interaction, although total couple *we*-talk was in fact negatively correlated with total D-W (which presumably reflects more adaptive couple functioning.)

The relational meanings of *I*-talk, on the other hand, may be more pronounced in conflictual interactions than in collaborative ones. For example, some studies suggest that associations between *I*-talk and marital quality tend to be positive when couples are distressed and negative when they are not (Seider et al., 2009; Sillars et al., 1997; Simmons et al., 2005; Williams-Baucom et al., 2010). In interpreting such results, Williams-Baucom et al. suggest that *I*-talk may “mark a need to defend themselves or separate themselves from their partner,” (2010, p. 54), which is consistent with the D-W pattern. Thus, during a health-related disagreement, patient *I*-talk might mark a defensive, individualistic stance amounting to withdrawal or resistance to a spouse’s requests for behavior change (e.g., “It’s *my* body and *I’ll* smoke if *I* want to”). If the “demanding” spouse concurrently uses less *I*-talk than the patient, we have a recipe for the observed correlation between asymmetrical partner *I*-talk and directional D-W.

On balance, it seems likely that partner *we*-talk and *I*-talk in couples coping with health problems do reflect communal and individualistic orientations, respectively, but only in general ways that depend on the context of conversation. Whatever these two pronoun markers may ultimately mean, it is also noteworthy that their correlations with each other, while negative and statistically significant, were only moderate in magnitude ($r = -.42$ for patients, $r = -.29$ for spouses, and $r = -.46$ for couples). Thus, *I*-talk is not the polar opposite of *we*-talk, and these variables do not appear to represent opposite ends of a single construct.

Although the main aim of this study was to investigate asymmetric patterns of first-person pronoun use (*we*-talk and *I*-talk), the strongest correlate of directional D-W turned out to be asymmetrical *second*-person pronoun use. In retrospect, the importance of *you*-talk in conversations characterized by disagreement should not be surprising, given substantial evidence linking this pronoun variable to couple conflict. For example, research has associated *you*-talk in couple interaction with increased blame and negativity (Georgiou, Black, & Narayanan, 2011; Simmons et al., 2005), decreased relationship satisfaction (Sillars et al., 1997; Slatcher, Vazire, Pennebaker, 2008), and poorer adjustment among couples coping with breast cancer (Robbins et al., 2012). Here, while total couple *you*-talk

correlated with total couple D-W interaction as the literature would predict ($r = .40, p < .01$), the strongest independent predictor of directional D-W (spouse-demand/patient-withdraw) in regression analyses was relatively more *you*-talk by the spouse (e.g., “*You* should really cut down on *your* smoking”) than by the patient.

Importantly, when we entered asymmetrical *you*-talk and asymmetrical *we/I*-ratio in the same regression models, both remained unique and significant predictors of directional D-W interaction. Previous literature suggests that, in some cases, spouse *we*-talk may even take the form of a “royal *we*”, in which “*we*” actually means “*you*” (Chung & Pennebaker, 2007; Robbins et al., 2012). In this way, one might conceptualize asymmetric spouse *we*-talk and *you*-talk as alternate forms of demand – one relatively soft or indirect (*we*-talk), the other relatively hard or direct (*you*-talk). Spouses can thus make demands in different ways – with “*we*” or “*you*” statements – while patients defend themselves using “*I*” statements. Interestingly, asymmetric *we/I*-ratios were significantly associated with asymmetric *you*-talk ($r = .31, p < .01$), suggesting that spouses who used more *we*-talk than their patient-partners also tended to use more *you*-talk.

Despite the rather different health problems represented in this study, the main findings were consistent across the three samples. There were a few notable sample differences on the main measures, such that heart couples used more *we*-talk and alcohol couples showed more total D-W interaction and reported lower constructive communication than the other groups, but overall levels of directional D-W and asymmetrical pronoun use did not vary across samples. Associations between directional D-W interaction and patterns of partner pronoun asymmetry were consistent across the samples as well, with no appreciable moderation, suggesting that the present finding can be generalized across health problems and levels of couple functioning related to communal orientation and communication quality. Given the relatively small size of the smoking sample, it is also possible that the lack of sample differences was due in part to the lack of power to detect such differences.

Our study has several important limitations. First, the observed boundary condition of adaptive *we*-talk pertains only to concurrently observed D-W interaction: Asymmetrical partner pronoun use may have little to do with more general aspects of relationship quality, as our null associations with self-reported constructive communication suggest. Second, the results show problematic implications of asymmetrical partner pronoun use only in relation to concurrent couple interaction. Even though D-W interaction seems to predict poor patient adherence and compromised health behavior, the degree to which partner pronoun asymmetry relates to such health outcomes remains to be tested. Finally, automatic text analysis approaches like the ones employed here are unable to disambiguate the contextual meaning of used pronouns. This limitation, though, should be at least to some extent offset by their reduced vulnerability to social desirability bias, which is particularly important in the context of assessing evaluative constructs such as relationship quality and D-W interaction.

If the present results have an implication for practice, this might be that clinicians working with couples could profitably attend to linguistic discrepancies in how partners talk about coping with health problems as observable manifestations of D-W interaction. The clinical

literature describes viable approaches to treating the D-W pattern within frameworks such as integrative behavioral couple therapy (Christensen & Jacobson, 2000), emotion-focused couple therapy (Johnson & Denton, 2002), and strategic/systemic couple therapy (Shoham, Rohrbaugh, & Cleary, 2008).

In conclusion, the present study suggests that asymmetrical partner pronoun use, with relatively more *we*-talk (or less *I*-talk) and more *you*-talk by the spouse and relatively more *I*-talk by the patient, reflects problematic spouse-demand/patient-withdraw interaction patterns. Broadly, it highlights the importance of examining couple-level patterns of pronoun use as markers and correlates of relationship processes that have potentially important implications for relationships and individual health.

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Table 1

Descriptive Statistics for Individual- and Couple-level Pronoun Variables.

Pronoun variables	<i>Individual-level variables</i>					
	Patients			Spouses		
	Mean	SD	Range	Mean	SD	Range
<i>We/I</i> -ratio	19.2	15.3	0 – 68.8	22.9	15.8	0 – 100
<i>We</i> -talk	1.7	1.4	0 – 5.6	1.9	1.3	0 – 6.8
<i>I</i> -talk	7.6	2.6	2.1 – 14.6	6.8	2.5	0 – 12.0
<i>You</i> -talk	4.0	2.0	0 – 9.1	4.9	2.3	0.4 – 12.0

Pronoun variables	<i>Couple-level variables</i>					
	Partner asymmetry			Partner total (mean)		
	Mean	SD	Range	Mean	SD	Range
<i>We/I</i> -ratio	3.7	15.7	-38.3 – 57.1	21.1	13.4	0 – 71.4
<i>We</i> -talk	0.2	1.3	-3.6 – 2.8	1.8	1.2	0 – 6.2
<i>I</i> -talk	-0.8	3.4	-13.2 – 8.4	7.2	1.8	1.9 – 11.8
<i>You</i> -talk	0.9	2.8	-5.3 – 8.7	4.4	1.7	0.3 – 8.6

Table 2

Intercorrelations Between Couple-level Pronoun and Demand-Withdraw Variables.

	We/I-ratio		We-talk		I-talk		You-talk		Demand-Withdraw	
	Asymmetry	Total	Asymmetry	Total	Asymmetry	Total	Asymmetry	Total	Directional	Total
<i>We/I-ratio</i>										
Asymmetry	-	.04	.78**	-.07	-.64**	-.04	.30**	-.07	.30**	-.06
Total	-	-	-.02	.92**	.01	-.69**	-.04	-.57**	-.01	-.31**
<i>We-talk</i>										
Asymmetry			-	-.01	-.21**	.07	-.05	-.07	.06	.01
Total			-	-	.10	-.46**	-.10	-.51**	-.05	-.31**
<i>I-talk</i>										
Asymmetry					-	-.05	-.64**	.02	-.48**	.22**
Total						-	.02	.43**	-.03	.11
<i>You-talk</i>										
Asymmetry							-		.47**	-.02
Total								-	-.21*	.40**
<i>Demand-Withdraw</i>										
Directional									-	-.10
Total										-

**
p < .01,

*
p < .05.

Table 3

Standardized Beta Weights from Hierarchical Regression Models Linking Asymmetric Couple-level Pronoun Patterns to Demand-Withdraw Interaction (N = 150).

	Model 2		Model 3		
Model 1	Step 1	Step 2	Step 1	Step 2	
<i>We/I</i> -ratio asymmetry	.29**	<i>We</i> -talk asymmetry	-.04	<i>We/I</i> -ratio asymmetry	.17*
<i>We/I</i> -ratio total	-.02	<i>I</i> -talk asymmetry	-.49**	<i>You</i> -talk asymmetry	.45**
Demand-withdraw total	-.11	<i>We</i> -talk total	-.03	<i>We/I</i> -ratio total	-.02
		<i>I</i> -talk total	-.06	<i>You</i> -talk total	-.10
		Demand-withdraw total	-.01	Demand-withdraw total	.03
Step 2		Step 2		Step 2	
<i>We/I</i> -ratio asymmetry	.26**	<i>We</i> -talk asymmetry	-.02	<i>We/I</i> -ratio asymmetry	.16*
<i>We/I</i> -ratio total	-.04	<i>I</i> -talk asymmetry	-.44**	<i>You</i> -talk asymmetry	.41**
Demand-withdraw total	.06	<i>We</i> -talk total	-.08	<i>We/I</i> -ratio total	-.04
Relationship duration	.26**	<i>I</i> -talk total	-.10	<i>You</i> -talk total	-.12
LSM	-.16 [†]	Demand-withdraw total	.13	Demand-withdraw total	.14
		Relationship duration	.25**	Relationship duration	.20*
		LSM	-.11	LSM	-.13

Note. LSM = Language style matching. Dependent variable is directional demand-withdraw (spouse-demand/patient-withdraw minus patient-demand/spouse-withdraw). Relationship duration and language style matching, identified in preliminary analyses as significant correlates of directional demand-withdraw, served as additional covariates in the regression models.

** $p < .01$,

* $p < .05$,

[†] $p < .10$.