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Observed Communication in Couples Two Years After Integrative and Traditional Behavioral Couple Therapy: Outcome and Link With Five-Year Follow-Up

Katherine J. W. Baucom
University of California, Los Angeles

Mia Sevier
California State University–Fullerton

Kathleen A. Eldridge
Pepperdine University

Brian D. Doss
University of Miami

Andrew Christensen
University of California, Los Angeles

Objective: To examine changes in observed communication after therapy termination in distressed couples from a randomized clinical trial. ***Method:*** A total of 134 distressed couples were randomly assigned to either traditional behavioral couple therapy (TBCT; Jacobson & Margolin, 1979) or integrative behavioral couple therapy (IBCT; Jacobson & Christensen, 1998). Videotaped samples of each couple's interactions were coded from pre-therapy, post-therapy, and 2-year follow-up assessments. At these 3 time points, each partner chose 1 current relationship problem to discuss. Relationship satisfaction was assessed at 2-year follow-up, and clinically significant treatment response and marital status were assessed 5 years after treatment. ***Results:*** Observed negativity and withdrawal decreased from therapy termination through the 2-year follow-up as expected, but problem solving did not change, and observed positivity *decreased*. IBCT produced superior changes from post-therapy to the 2-year follow-up assessment compared with TBCT. Post-therapy levels and changes in communication over follow-up were associated with wife satisfaction at 2-year follow-up; only post-therapy to 2-year follow-up changes in communication were associated with husband satisfaction at 2-year follow-up. Post-therapy levels of problem solving and changes in wives' positivity from pre-therapy to post-therapy were associated with 5-year relationship outcomes. We found some counterintuitive results with positivity, but they were no longer significant after controlling for withdrawal. ***Conclusions:*** We found support for improvements in observed communication following treatment termination, with IBCT demonstrating greater maintenance of communication improvement over follow-up. We found limited evidence of associations between communication and relationship outcomes at 5-year follow-up.

Keywords: behavioral couple therapy, couple communication, long-term treatment response

One of the central tenants of behaviorally based couple therapy is that improvements in relationship satisfaction result from improvements in how couples communicate. Consistent with this idea, previous studies have documented decreases in negative behavior (D. H. Baucom, 1982; D. H. Baucom, Sayers, & Sher, 1990; Halford, Sanders, & Behrens, 1993; Jacobson, 1977) and increases in positive behavior (e.g., D. H. Baucom, 1982; Hahlweg, Revenstorf, & Schindler, 1984; Jacobson, 1977; Sevier, Eldridge, Jones, Doss, & Christensen, 2008) over the course of therapy. Thus, there is empirical support for the notion that behavioral couple therapies are able to change communication in the manner intended. Unfortunately, no known study of behavioral couple therapy has observed communication after the post-therapy assessment. Available evidence from psychoeducational relationship education is encouraging; it suggests continued declines in observed negativity and stability in observed positivity (e.g., Lau-

Katherine J. W. Baucom and Andrew Christensen, Department of Psychology, University of California, Los Angeles; Mia Sevier, Department of Human Services, California State University–Fullerton; Kathleen A. Eldridge, Graduate School of Education and Psychology, Pepperdine University; Brian D. Doss, Department of Psychology, University of Miami.

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Correspondence concerning this article should be addressed to Katherine J. W. Baucom, Department of Psychology, University of California, Los Angeles, 1285 Franz Hall, Box 951563, Los Angeles, CA 90095-1563. E-mail: kwilliams@ucla.edu

renceau, Stanley, Olmos-Gallo, Baucom, & Markman, 2004). However, given that there is an increase in relationship distress from termination through subsequent follow-up in 30%–60% of couples who undergo couple therapy (Snyder, Castellani, & Whisman, 2006), it is important to establish whether couples evidence similar declines in observed communication after therapy.

Although researchers have consistently found that observed communication changes in desired directions over the course of therapy, links between it and relationship outcomes remain largely unclear (Snyder et al., 2006). On the one hand, some studies have found that reductions in negative behavior (e.g., Sayers, Baucom, Sher, Weiss, & Heyman, 1991; Sevier et al., 2008) and increases in positive behavior (e.g., Sevier et al., 2008) are linked with improvements in relationship outcomes, consistent with behavioral theory. On the other hand, a number of studies have failed to find associations between changes in communication and changes in relationship satisfaction (Halford et al., 1993; Iverson & Baucom, 1990), and one study of behavioral couple therapy found that higher observed positivity in both husbands and wives at the end of treatment was associated with greater likelihood of separation 6 months later (D. H. Baucom & Mehlman, 1984).

Consistent with this finding in couple therapy, one study of Prevention and Relationship Enhancement Program (PREP; Markman, Stanley, & Blumberg, 2001) found that increases in women's positive behavior increased the chances that a couple would be distressed 5 years later (Schilling, Baucom, Burnett, Allen, & Ragland, 2003). These findings were replicated in a second sample that participated in a similar prevention program in Germany (D. H. Baucom, Hahlweg, Atkins, Engl, & Thurmaier, 2006). Although the latter results concerning positive communication in women are surprising and counterintuitive, Schilling et al. (2003) found that links between changes in women's positive communication and subsequent distress were no longer significant when controlling for wives' reported mutual avoidance, suggesting that wives who increased their positive behavior over the course of the workshop may have been avoiding discussion of important problems. Critics of this literature have argued that there are potential statistical and methodological issues (e.g., influential cases and very complex and difficult to interpret models) that cannot be ruled out as explanations for such findings (Stanley, Rhoades, Olmos-Gallo, & Markman, 2007). However, if Schilling et al.'s (2003) and D. H. Baucom et al.'s (2006) interpretations of these results are accurate—that some women may have misinterpreted instruction in the PREP workshop to mean that positive communication is good and negative communication is bad regardless of the context of the behavior—these findings may highlight a problem with purely behavioral approaches to relationship distress, as we discuss in more detail below.

Most of the aforementioned intervention research, including PREP, used traditional behavioral couple therapy (TBCT; Jacobson & Margolin, 1979) or some derivative of it to create change in couples. TBCT increases the frequency of positive behavior (reinforcement) and decreases the frequency of negative behavior (punishment) to improve relationship satisfaction. TBCT brings about these changes through direct instruction (e.g., encouragement to engage in positive behavior that has been identified) as well as communication and problem-solving training. In the latter, partners are taught appropriate ways to communicate, such as the use of "I" statements, active listening, and problem solving. TBCT therapists use "rule-governed" methods throughout, encouraging couples to deliberately engage in desired behavior by following a set of guidelines for better communication and more constructive behavior.

In contrast to the rule-governed change methods used in TBCT, integrative behavioral couple therapy (IBCT; Jacobson & Christensen, 1998) relies on "contingency-shaped" change in promoting better communication and in fostering emotional acceptance. Instead of teaching couples rules of good communication, IBCT therapists explore partners' emotional reactions to each other's messages. IBCT assumes that a focus on these reactions, through the help of a skilled therapist, will shape more sensitive and effective communication between partners. However, these changes in communication may not be as obvious or as dramatic as the changes induced by TBCT, and they are not likely to be as affected by demand characteristics (e.g., if you teach couples specific ways of communicating and then videotape them after this training, they may demonstrate the new ways of talking even if they do not ordinarily use them). However, an assumption in IBCT is that these, perhaps more subtle, contingency-shaped changes within each partner's natural communication styles may be more enduring in the couple. Thus, TBCT may induce more dramatic short-term changes, but IBCT may engender more long-term changes. Interestingly, however, associations between changes in observed behavior and satisfaction are similar during the active phase of treatment in IBCT and TBCT (Sevier et al., 2008).

The Present Study

The present study makes two important contributions to the current body of literature. First, we examine trajectories of change in couples' communication through a 2-year follow-up and test whether these changes differ between two behavioral couple therapies. Specifically, we hypothesize that IBCT couples will continue to improve from post-therapy to 2-year follow-up (i.e., increase in positivity and problem solving and decrease in negativity and withdrawal) but that TBCT couples will have less improvement than IBCT couples (Hypothesis 1). Our previous findings (i.e., Sevier et al., 2008) demonstrated TBCT's superiority in changing communication from pre- to post-therapy, and we expect that the reverse will be true in this examination of communication from post-therapy through 2-year follow-up.

Second, we examine links between changes in observed communication across three time points (i.e., pre-therapy, post-therapy, and 2-year follow-up) and relationship outcomes 2 and 5 years after treatment. We further hypothesize that improvements in communication, as well as higher overall levels of communication at the post-therapy assessment, will be associated with greater relationship satisfaction at 2-year follow-up (Hypothesis 2) as well as with response to treatment and relationship stability (i.e., divorce) at 5-year follow-up (Hypothesis 3). Given mixed findings with regards to positivity, we make predictions about links between positivity and relationship outcomes with some misgivings. If our results suggest a similar odd pattern of findings, we analyze them while controlling for withdrawal, as was done with the earlier studies.

Method

Participants

Participants were 134 seriously and chronically distressed married couples from the University of California, Los Angeles (71 couples) and the University of Washington (63 couples). Couples were recruited through newspaper ads, radio ads, and flyers promoting free therapy.

Couples included in the study scored in the distressed range on three measures of relationship satisfaction at three different time points, and they were excluded from the study if they were not married, did not speak English, or reported moderate to severe domestic violence. On the basis of the combination of pretreatment relationship satisfaction scores from two self-report measures, couples were classified as either moderately or severely distressed. Within each level of distress, couples were randomly assigned to participate in either TBCT (68 couples) or IBCT (66 couples; see Christensen et al., 2004, for a more detailed description of recruitment, screening, and stratification procedures). The mean ages of husbands and wives were 43.5 years (SD = 8.8) and 41.6 years (SD = 8.6), respectively. Mean monthly income for husbands and wives was \$4,453 (SD = \$3,822) and \$3,019 (SD = \$3,958), respectively. The mean number of years of education was 16.97 (SD = 3.23) for wives and 17.03 (SD = 3.17) for husbands. The mean years of marriage was 10.0 (SD = 7.6), and the mean number of children that couples had was 1.1 (SD = 1.0). The sample was 77.6% Caucasian, 7.5% African American, 5.2% Asian American/Pacific Islander, 5.2% Latino, 0.6% Native American/Alaskan Native, and 4.1% other.

Measures

Relationship satisfaction. The Dyadic Adjustment Scale (DAS; Spanier, 1976) was used to measure relationship satisfaction across a number of time points in the current study. Scores on the DAS range from 0 to 151, with higher scores indicating higher levels of dyadic adjustment. Within this sample, Cronbach's alphas were high for both husbands and wives (.89 and .87, respectively). The sample represented couples that were seriously and chronically distressed (husbands' DAS M = 84.49, SD = 14.96; wives' DAS M = 84.70, SD = 13.98).

Treatment response. We calculated clinically significant change in relationship satisfaction at 5-year follow-up using Jacobson and Truax's (1991) "cutoff c" criterion, which is the midpoint between the normative DAS mean and the pre-therapy DAS mean in the sample (96.8 or about one standard deviation below the normative mean). We defined two outcome categories by collapsing the four outcome categories previously used in Christensen, Atkins, Baucom, and Yi (2010): treatment nonresponders (i.e., couples who divorced or separated, showed reliable deterioration, or did not change) and treatment responders (reliable improvement or movement into the nondistressed range). Of participants that were in the study through 5-year follow-up, 62 couples were nonresponders to treatment (46%; 33 TBCT and 29 IBCT), 57 couples were responders to treatment (43%; 28 TBCT and 29 IBCT), and we did not have data on 15 couples (11%; Christensen et al., 2010).

Relationship stability. We were able to ascertain relationship stability (i.e., whether a couple divorced) for all couples at 5 years after treatment, at which point 98 out of 134 (73.1%) couples were still married (49 TBCT couples, 49 IBCT couples), and 36 out of 134 (26.9%) couples were divorced or legally separated (19 TBCT couples, 17 IBCT couples; Christensen et al., 2010).

Observational rating. Communication during the 10-min interactions was rated using the Couple Interaction Rating System (CIRS; Heavey, Gill, & Christensen, 1998) and the Social Support Interaction Rating System (SSIRS; Jones & Christensen, 1998). The CIRS is a 13-item observational rating system (Heavey et al., 1998) designed to capture problem-solving and communication behaviors, and the SSIRS is an 18-item observational rating system designed to capture emotional features of the interaction (Jones & Christensen, 1998). Both systems are global coding systems that capture overall impressions of behaviors in context, rather than specific counts of behaviors. Items were rated on a Likert scale ranging from 1 (*none*) to 9 (*a lot*).

Separate groups of undergraduate coders were trained on one of the two coding systems (the SSIRS or the CIRS). All were instructed to focus on one spouse at a time and to make judgments about the extent to which the target spouse demonstrated the behavior specified by the codes during the interaction. Coders considered the frequency, context, and intensity of total interaction behavior in their overall ratings. Coders were blind to all hypotheses, and they coded pre-therapy, post-therapy, and 2-year follow-up interactions in a random order. They coded both distressed and nondistressed couples' behavior in both personal and relationship problem-solving discussions, so each interaction was coded by 3–5 coders on each of the two teams. See Sevier et al. (2008) for a more detailed description of rating procedures and controls. In the previous article on pre- and post-therapy data, principal component analyses of observational data revealed four components: negativity, withdrawal, positivity, and problem solving (Sevier et al., 2008).[1] We computed Cronbach's alphas at each time point and found the average subscale reliabilities to be as follows: negativity (.88), withdrawal (.74), positivity (.71), and problem solving (.72). Interobserver reliability Cronbach's alphas were negativity (.86–.95), withdrawal (.79–.88), positivity (.81–.95), and problem solving (.66–.92). Table 1 presents descriptive statistics of these four observed communication scales.

Procedure

All couples participated in up to 26 sessions (M = 22.9, SD = 5.35) of either IBCT (Jacobson & Christensen, 1998) or TBCT (Jacobson & Margolin, 1979). More information on these treatments can be found in Christensen et al. (2004). As part of a larger assessment battery, at each of three time points (pre-treatment,

[1] Codes included in the scales were negativity (belligerence/domineering, contempt/disgust, anger/frustration, blame, defensiveness, and pressures for change), positivity (affection, emotional support offered, and use of humor), withdrawal (discussion [reversed], withdraws, defines problem [reversed], and avoidance), and problem solving (negotiates, makes agreements, offers solutions, and instrumental support received). A thorough review of observational codes (Weiss & Heyman, 2004) suggests the items composing each scale are similar to other coding systems.

Table 1
Descriptive Statistics of Observed Communication Over Time

	Pre-therapy		Post-therapy		2-year follow-up	
Scale	*M*	*SD*	*M*	*SD*	*M*	*SD*
Negativity						
Husband	3.25	1.45	2.54	1.36	2.03	1.08
Wife	3.79	1.69	3.12	1.59	2.44	1.19
Positivity						
Husband	1.91	0.99	2.18	1.16	1.79	0.85
Wife	1.85	0.99	2.02	1.02	1.61	0.85
Withdrawal						
Husband	2.81	0.87	2.78	0.77	2.05	0.66
Wife	2.58	0.63	2.64	0.78	2.01	0.60
Problem solving						
Husband	2.04	1.01	2.51	1.22	2.73	1.19
Wife	2.00	0.93	2.49	1.29	2.57	1.22

Note. Descriptives presented in this table are untransformed.

post-treatment,[2] and 2-year follow-up), couples completed questionnaires and two videotaped 10-min relationship problem discussions; each spouse picked a topic for discussions, which was counterbalanced across couples. Additionally, at 5 years after therapy, information on relationship satisfaction (for couples that remained together) or relationship stability (i.e., divorce/separation) was collected.

Relationship problem discussions included 133 couples at pre-therapy, 117 couples at post-therapy, and 84 couples at 2-year follow-up. See Figure 1 for a flow chart of observational assessments and details of missing data.

Data Analysis

We used Hierarchical Linear Modeling (HLM) Version 6.04 (Raudenbush, Bryk, Cheong, & Congdon, 2007) for all analyses in the current article.[3] We averaged communication for a particular individual across husband's and wife's topics. Distributions of the four scales were nonnormal, so we used natural log transformations for all analyses in which communication was the outcome variable.

Modeling changes in observed communication over time. Our first hypothesis was that behavior would change from post-therapy to 2-year follow-up, and that these changes would depend on therapy type (Hypothesis 1). To test this hypothesis, we ran a series of two-intercept multilevel models in HLM, which yields separate estimates for husbands and wives (Raudenbush, Brennan, & Barnett, 1995). The following is the within-couple model (Level 1):

$$\begin{aligned}\text{Behavior}_{ij} = {} & \beta_0(\text{Husband})_{ij} + \beta_1(\text{Wife})_{ij} + \beta_2(\text{Husband} \\ & \times \text{Pre–Post})_{ij} + \beta_3(\text{Husband} \times \text{Post-2year})_{ij} \\ & + \beta_4(\text{Wife} \times \text{Pre-Post})_{ij} + \beta_5(\text{Wife} \\ & \times \text{Post-2year})_{ij} + r_{ij},\end{aligned}$$

where *i* indexes individuals and *j* indexes couples. The time variables were dummy coded such that the intercepts, β_0 and β_1, represented expected behavior in the post-therapy assessment for husbands and wives, respectively (pre–post was coded *pre-therapy* = –1, *post-therapy* = 0; post-2year was coded *post-therapy* = 0, *2 year* = 1). At Level 2, random effects were included on the husband and wife intercepts. In Hypothesis 1, we also included several Level 2 (couple-level) predictors: therapy type (*TBCT* = –.5, *IBCT* = .5), pre-therapy distress stratification (*severely distressed* = –.5, *moderately distressed* = .5), and their interaction.

Associations between observed communication and long-term relationship outcomes. Our second and third hypotheses were that levels of observed communication and changes in observed communication would be associated with relationship satisfaction at 2-year follow-up and with relationship outcomes at 5-year follow-up, respectively.[4] For both sets of models, we included therapy type and pre-therapy distress stratification (see above) at Level 2 to control for differences between treatments and stratification levels that we examined in Hypothesis 1. To test Hypothesis 2, we also included both husband and wife relationship satisfaction at 2-year follow-up at Level 2. We centered relationship satisfaction separately for husbands and wives prior to including these variables. To test Hypothesis 3, we added either treatment response (*nonresponse* = –.5, *response* = .5) or relationship stability (*divorced* = –.5, *intact* = .5) at Level 2 in addition to our control variables (therapy type and distress stratification).

[2] Although we refer to this assessment point as "post-therapy," a number of couples, although near to the end of treatment, were still participating in sessions at this time. This treatment outcome study sought to maintain equal spacing of time between assessments for all couples rather than equal number of therapy sessions between assessments.

[3] There were a number of significant differences in observed communication between couples who did and did not participate in the 2-year observational assessment. Because the majority of these couples did not participate because they had separated or divorced, we were not surprised to find that partners who did not participate in the 2-year assessments were significantly more negative at post-therapy ($p < .01$ for wives, $p < .10$ for husbands) and evidenced less decrease in negativity from pre-therapy to post-therapy ($p < .01$ for wives, $p < .10$ for husbands). There were no significant differences in post-therapy levels of positivity or pre-therapy to post-therapy changes in positivity between couples who participated in the 2-year observational assessment and those who did not ($ps > .10$). Partners who did not participate in the 2-year assessments displayed significantly more withdrawal at post-therapy ($p < .01$ for wives, $p < .001$ for husbands), and those husbands evidenced less decrease in withdrawal from pre-therapy to post-therapy ($p < .01$). Finally, husbands who did not participate in the 2-year observational assessment displayed significantly less problem-solving behavior at post-therapy ($p < .001$).

[4] Links between communication and relationship outcomes were very similar at 2-year follow-up to links between these variables at 5-year follow-up. Treatment response and relationship satisfaction are highly correlated with each other at both 2-year and 5-year follow-ups ($.46 < rs < .70$; $ps < .001$). We chose to use individual relationship satisfaction at 2-year follow-up because it is a more precise measure than treatment response. However, we have more data on treatment response at 5-year follow-up because all divorced couples were classified as "nonresponders," but we could not have obtained relationship satisfaction data, as they were not together. For this reason, we chose to use treatment response and relationship stability as measures of outcomes at 5-year follow-up.

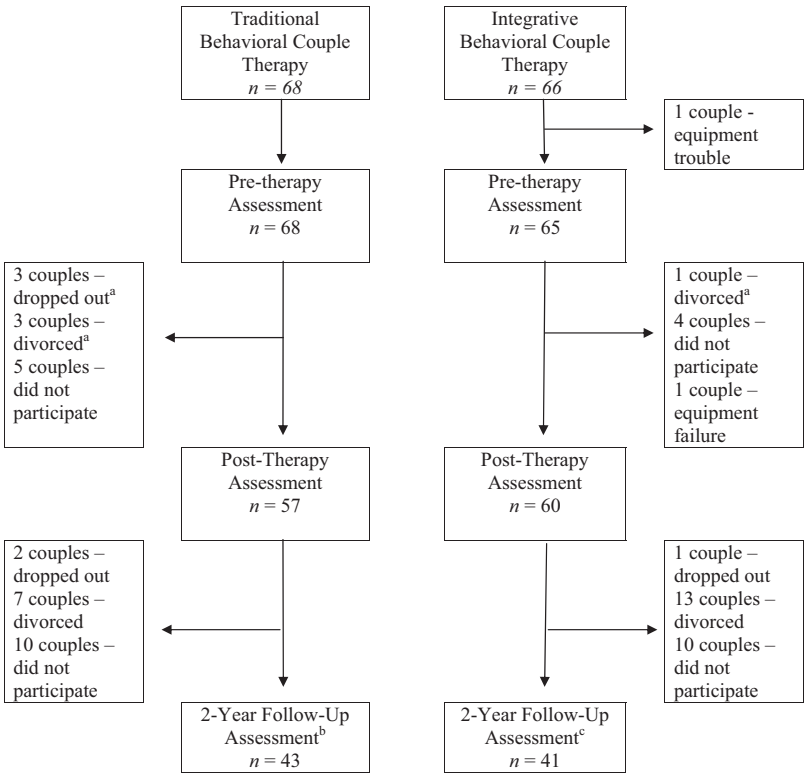

Figure 1. Two-year observational assessment flowchart—by therapy. n = number of couples with observational data at the respective time point. [a]Not included in subsequent assessments. [b]$n = 3$ traditional behavioral couple therapy couples participated in the 2-year follow-up assessments but did not provide self-report data for treatment response at 5-year follow-up. [c]$n = 6$ integrative behavioral couple therapy couples participated in the 2-year follow-up assessments but did not provide self-report data for treatment response at 5-year follow-up.

Results

Changes in Observed Communication Over Time (Hypothesis 1)

There were a number of significant changes in behavior from post-therapy to 2-year follow-up (see Table 2). As hypothesized, partners' negativity (ps $< .001$) and withdrawal (ps $< .001$) continued to decrease from post-therapy to 2-year follow-up. However, contrary to our expectations, partners' positivity *decreased* from post-therapy to 2-year follow-up (ps $< .01$), and problem solving did not significantly change over this period of time (Figure 2 presents trajectories of communication that significantly changed).

Consistent with our first hypothesis, some of these changes in behavior depended on treatment condition. There was a significant effect of treatment on changes in wives' negativity from post-therapy to 2-year follow-up ($d = -0.48$, $p < .05$). IBCT wives' negativity continued to decrease from post-therapy to 2-year follow-up ($\chi^2 = 24.08$, $p < .001$), whereas TBCT wives' negativity did not significantly change ($\chi^2 = 1.44$, *ns*). There was also a significant effect of treatment on changes in husbands' positivity from post-therapy to 2-year follow-up ($d = 0.57$, $p < .05$). IBCT husbands' positivity did not significantly change from post-therapy to 2-year follow-up ($\chi^2 = 0.48$, *ns*), whereas TBCT husbands' positivity decreased ($\chi^2 = 10.62$, $p < .01$). There were no significant effects of treatment on withdrawal or problem-solving communication.

Although not a primary focus of this study, we also examined treatment differences in levels of communication at 2-year follow-up. There were not significant differences between treatments on any measures of communication at 2-year follow-up (see Figure 2).

Associations Between Observed Communication and Relationship Satisfaction at Two-Year Follow-Up (Hypothesis 2)

Post-therapy levels of communication and trajectories of change in communication were associated with relationship satisfaction at 2-year follow-up (see Table 3). Wives with lower levels of post-therapy negativity were significantly more satisfied at 2-year follow-up ($p < .01$), as were wives whose husbands had lower levels of post-therapy negativity, although this effect was marginal ($p < .10$). Wives with higher levels of post-therapy positivity and wives whose husbands had higher levels of post-therapy positivity were also significantly more satisfied at 2-year follow-up ($p < .01$ and $p < .05$, respectively). Interestingly, wives with greater *reductions* in positivity from post-therapy to 2-year follow-up were significantly more satisfied, although their husbands were signif-

Table 2
Modeling Post-Therapy Levels of Observed Communication and Communication Change From Post-Therapy Through Two-Year Follow-Up

	Negativity		Positivity		Withdrawal		Problem solving	
Partner	*B* (*SE*)	*d*	*B* (*SE*)	*d*	*B* (*SE*)	*d*	*B* (*SE*)	*d*
Modeling post-therapy levels of behavior								
Husband								
Intercept	0.82 (0.04)***		0.70 (0.05)***		0.99 (0.02)***		0.86 (0.04)***	
Therapy	0.14 (0.09)	0.31	−0.14 (0.09)	−0.34	0.08 (0.05)†	0.28	−0.05 (0.08)	−0.12
Stratification	−0.14 (0.09)	−0.31	0.28 (0.09)**	0.69	−0.08 (0.05)†	−0.28	−0.13 (0.08)†	−0.31
Tx × Strat	0.06 (0.18)		−0.24 (0.18)		0.17 (0.09)†		0.06 (0.16)	
Wife								
Intercept	1.02 (0.05)***		0.63 (0.04)***		0.96 (0.02)***		0.84 (0.04)***	
Therapy	0.22 (0.10)*	0.47	−0.14 (0.09)	−0.33	0.03 (0.05)	0.12	−0.07 (0.08)	−0.17
Stratification	−0.13 (0.10)	−0.27	0.24 (0.09)**	0.59	−0.02 (0.05)	−0.09	0.01 (0.08)	0.03
Tx × Strat	0.38 (0.20)†		−0.08 (0.18)		0.01 (0.10)		0.32 (0.16)†	
Modeling changes in behavior from post-therapy to 2-year follow-up								
Husband								
Intercept	−0.21 (0.05)***		−0.17 (0.06)**		−0.31 (0.03)***		0.09 (0.05)†	
Therapy	−0.11 (0.10)	−0.24	0.23 (0.12)*	0.57	−0.05 (0.06)	−0.17	0.14 (0.10)	0.34
Stratification	0.14 (0.10)	0.31	−0.30 (0.12)**	−0.75	0.14 (0.06)*	0.50	−0.17 (0.10)†	−0.42
Tx × Strat	−0.03 (0.20)		−0.05 (0.02)		−0.08 (0.12)		−0.20 (0.20)	
Wife								
Intercept	−0.21 (0.05)***		−0.23 (0.06)***		−0.29 (0.03)***		0.01 (0.05)	
Therapy	−0.23 (0.11)*	−0.48	0.21 (0.11)†	0.50	−0.02 (0.06)	−0.10	0.01 (0.10)	0.01
Stratification	0.17 (0.11)	0.37	−0.15 (0.11)	−0.35	−0.01 (0.06)	−0.06	−0.02 (0.10)	−0.04
Tx × Strat	−0.41 (0.22)†		0.08 (0.23)		0.04 (0.12)		−0.22 (0.20)	

Note. *d* = Cohen's *d*; Tx = therapy type; Strat = pre-treatment distress level; Tx × Strat = Therapy Type × Pre-Treatment Distress Level interaction. Unstandardized regression coefficients for interactions with Therapy and Stratification represent the magnitude of the difference between the two levels (because for Tx, *traditional behavioral couple therapy* = −.5, *integrative behavioral couple therapy* = .5; for Strat, *severely distressed* = −.5, *moderately distressed* = .5).
† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

icantly less satisfied at 2-year follow-up (*p*s < .05). Wives whose husbands had greater reductions in withdrawal from pre-therapy to post-therapy were significantly more satisfied at 2-year follow-up ($p < .05$), and there was a marginal effect in the same direction for the satisfaction of wives whose own withdrawal decreased from pre-therapy to post-therapy ($p < .10$).

Finally, there were several associations between problem solving and relationship satisfaction. Wives with higher levels of post-therapy problem solving and wives whose husbands had higher levels of post-therapy problem solving were significantly more satisfied at 2-year follow-up ($p < .001$ and $p < .05$, respectively). Similarly, wives with greater increases in problem solving and wives whose husbands had greater increases in problem solving from pre-therapy to post-therapy were significantly more satisfied at 2-year follow-up ($p < .001$ and $p < .05$, respectively). Finally, husbands with greater increases in problem solving and husbands whose wives had greater increases in problem solving from post-therapy to 2-year follow-up were significantly more satisfied at 2-year follow-up (*p*s < .05).

Associations Between Observed Communication and Relationship Outcomes at Five-Year Follow-Up (Hypothesis 3)

Post-therapy levels of communication as well as trajectories of change in communication were associated with response at 5-year follow-up (see Table 4). Wives who showed greater increases in positivity from pre-therapy to post-therapy demonstrated significantly better outcomes at follow-up ($d = 0.44$, $p < .05$). Specifically, wives' positivity increased significantly in couples who were classified as treatment responders at follow-up ($\chi^2 = 7.16$, $p < .01$) but did not significantly change in couples who were nonresponders ($\chi^2 = 0.46$, *ns*). Both husbands and wives who used higher levels of post-therapy problem-solving communication had better outcomes at follow-up (for husbands, $d = 0.46$, $p < .05$; for wives, $d = 0.52$, $p < .01$). Finally, wives who showed greater increases in problem-solving behavior from pre-therapy to post-therapy had better outcomes at 5-year follow-up ($d = 0.37$, $p < .10$), although wives in both the responder and nonresponder groups used significantly more problem-solving behavior at post-therapy relative to pre-therapy (responders, $\chi^2 = 26.77$, $p < .001$; nonresponders, $\chi^2 = 5.34$, $p < .05$). There were no significant associations between behavior change from post-therapy to 2-year follow-up and treatment response at 5-year follow-up.

Post-therapy levels of communication and trajectories of change in communication were also associated with relationship stability at 5-year follow-up. Wives with higher levels of post-therapy positivity were somewhat more likely to remain married ($d = 0.32$, $p < .10$), as were wives who displayed greater increases in positivity from pre-therapy to post-therapy ($d = 0.46$, $p < .05$). Wives' positivity increased significantly in couples who remained

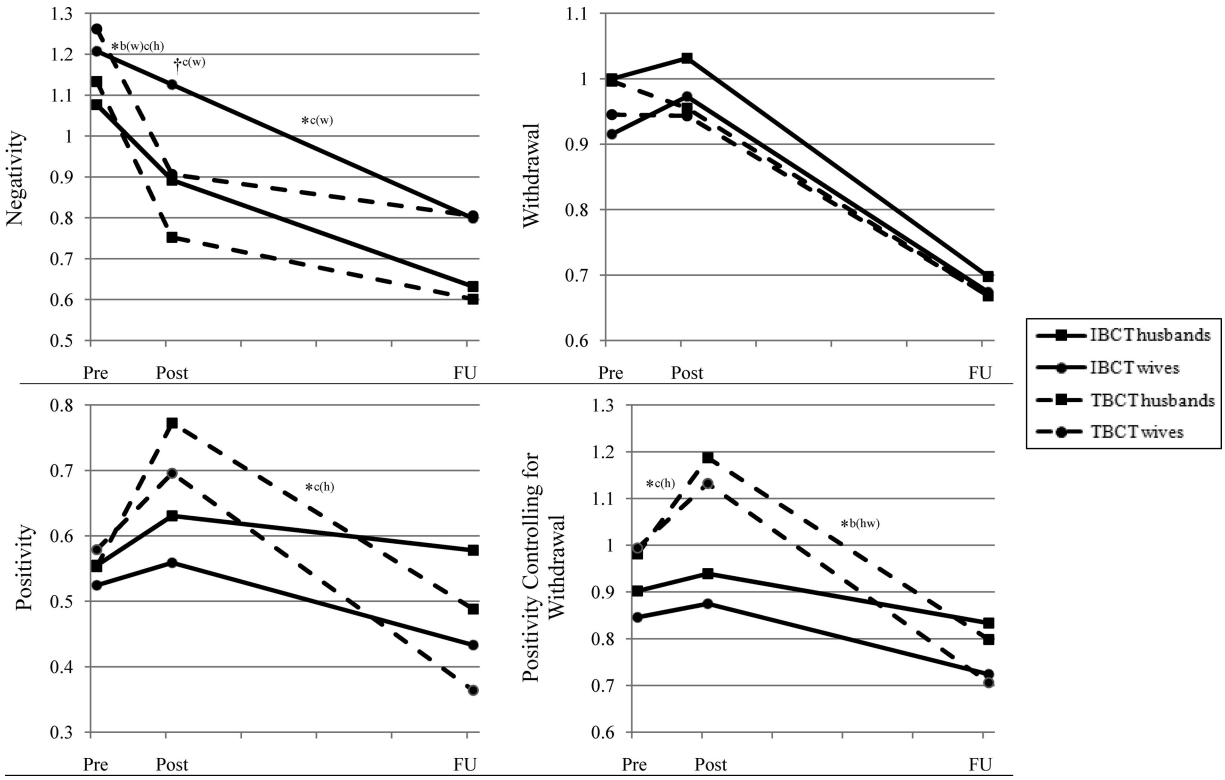

Figure 2. Predicted regression scores of observed communication in husbands and wives. IBCT = integrative behavioral couple therapy; TBCT = traditional behavioral couple therapy; FU = follow-up. * Significant within-gender difference between treatments in communication change. † Significant within-gender difference between treatments in level of communication. [b] $p < .01$; [c] $p < .05$ (in [h]husbands and [w]wives).

married ($\chi^2 = 8.91$, $p < .001$) but did not significantly change in couples who divorced ($\chi^2 = 0.73$, *ns*). Surprisingly, husbands who displayed greater *reductions* in positivity from post-therapy to 2-year follow-up were somewhat more likely to remain married ($d = -0.54$, $p < .10$). Husbands' positivity decreased significantly in couples who remained married ($\chi^2 = 14.74$, $p < .001$) but did not significantly change in couples who divorced ($\chi^2 = 0.06$, *ns*). Wives who had lower post-therapy levels of withdrawal were more likely to remain married ($d = -0.33$, $p < .1$). Finally, wives who had higher levels of post-therapy problem solving behavior were more likely to remain married ($d = 0.57$, $p < .05$), and there was a trend in the same direction among husbands ($d = 0.41$, $p < .10$).

Post Hoc Tests

In light of our replication of previously documented findings in Hypothesis 2 linking greater wife increases in positivity to lower wife relationship satisfaction (e.g., D. H. Baucom et al., 2006; D. H. Baucom & Mehlman, 1984; Gottman & Krokoff, 1989; Karney & Bradbury, 1997; Schilling et al., 2003), as well as the marginally significant finding in Hypothesis 3 that husbands with greater decreases in positivity were more likely to remain married at 5-year follow-up, we ran series of post hoc tests to better understand these effects. Because Schilling et al. (2003) found that controlling for self-reported mutual avoidance in a follow-up assessment eliminated deleterious effects of wives' increases in positive communication on subsequent distress, we controlled for observed withdrawal in all models in which positivity was the outcome.[5]

The trajectory of positivity over time after controlling for withdrawal was generally consistent with our Hypothesis 1 findings: Positivity decreased from post-therapy to follow-up in both husbands ($B = -.25$, $SE = .05$, $p < .001$) and wives ($B = -.29$, $SE = .05$, $p < .001$). However, the effect of therapy on this change was more pronounced in both husbands ($B = .28$, $SE = .10$, $d = 0.69$, $p < .01$) and wives ($B = .28$, $SE = .11$, $d = 0.68$, $p < .01$) when we controlled for withdrawal. Tests of simple effects revealed that while IBCT wives' positivity significantly decreased from post-therapy to 2-year follow-up ($\chi^2 = 4.53$, $p < .05$), TBCT wives' positivity decreased significantly more ($\chi^2 = 30.08$, $p < .001$) when we controlled for withdrawal. Consistent with Hypothesis 1 models, IBCT husbands' positivity did not significantly change from post-therapy to 2-year follow-up ($\chi^2 = 2.32$, *ns*), whereas TBCT husbands' positivity decreased ($\chi^2 = 28.60$, $p < .001$). Figure 2 presents the trajectory of change in positivity controlling for withdrawal.

Although the trajectory of positivity over time was largely consistent with initial findings when we included withdrawal in the

[5] We would like to thank the team of reviewers at the *Journal of Consulting and Clinical Psychology* for this suggestion.

Table 3
Associations Between Observed Communication and Relationship Satisfaction Two Years Post-Therapy

	Negativity		Positivity		Withdrawal		Problem solving	
Partner	*B* (*SE*)	*SC*	*B* (*SE*)	*SC*	*B* (*SE*)	*SC*	*B* (*SE*)	*SC*
Associations between satisfaction and post-therapy levels of communication								
H behavior								
H satisfaction	−0.02 (0.01)	−0.17	0.01 (0.01)	0.07	0.00 (0.01)	0.05	−0.01 (0.01)	−0.15
W satisfaction	−0.02 (0.01)†	−0.21	0.02 (0.01)*	0.29	0.00 (0.01)	−0.06	0.02 (0.01)*	0.28
W behavior								
H satisfaction	0.00 (0.01)	−0.03	0.00 (0.01)	0.01	0.00 (0.01)	−0.07	−0.01 (0.01)	−0.12
W satisfaction	−0.03 (0.01)**	−0.33	0.03 (0.01)**	0.32	0.00 (0.00)	−0.07	0.03 (0.01)***	0.35
Associations between satisfaction and changes in communication from pre-therapy to post-therapy								
H behavior								
H satisfaction	−0.01 (0.02)	−0.04	0.01 (0.01)	0.07	0.01 (0.01)	0.09	0.00 (0.01)	−0.03
W satisfaction	−0.02 (0.01)	−0.10	0.01 (0.01)	0.10	−0.01 (0.01)*	−0.14	0.02 (0.01)*	0.14
W behavior								
H satisfaction	0.00 (0.01)	−0.01	0.01 (0.01)	0.06	0.00 (0.01)	0.02	−0.01 (0.01)	−0.06
W satisfaction	0.02 (0.01)	−0.12	0.02 (0.01)	0.11	−0.01 (0.01)†	−0.11	0.03 (0.01)***	0.24
Associations between satisfaction and changes in communication from post-therapy to 2-year follow-up								
H behavior								
H satisfaction	0.00 (0.01)	−0.01	0.02 (0.02)	0.12	−0.01 (0.01)	−0.08	0.03 (0.01)*	0.16
W satisfaction	0.01 (0.01)	0.07	−0.02 (0.02)	−0.16	0.00 (0.01)	0.04	−0.02 (0.01)	−0.11
W behavior								
H satisfaction	0.00 (0.02)	−0.01	0.03 (0.01)*	0.20	0.00 (0.01)	−0.04	0.03 (0.01)*	0.18
W satisfaction	0.02 (0.01)	0.11	−0.03 (0.01)*	−0.22	0.00 (0.01)	−0.02	−0.02 (0.01)	−0.11

Note. *SC* = standardized regression coefficient (calculated as unstandardized coefficient times standard deviation of predictor over standard deviation of behavior); H = husband; W = wife. Unstandardized regression coefficients represent effects of relationship satisfaction on observed communication. Therapy type and pre-treatment distress level were also included as Level 2 covariates.
† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

model, this was not the case for links between positivity and relationship outcomes. When we included withdrawal in these models, we did not find any significant associations between positivity or changes in positivity and relationship satisfaction. In fact, only one significant association between changes in positivity and relationship outcomes remained: Wives who showed greater increases in positivity from pre-therapy to post-therapy demonstrated significantly superior response to treatment at 5- year follow-up ($B = .16$, $SE = .08$, $d = 0.39$, $p < .05$). Consistent with initial models, wives' positivity increased significantly in couples who were classified as treatment responders at 5-year follow-up ($\chi^2 = 7.27$, $p < .01$) but did not significantly change in couples who were nonresponders ($\chi^2 = 0.11$, *ns*). There was a marginally significant association in the same direction between wives' pre-therapy to post-therapy increases and stability at 5-year follow-up ($B = .18$, $SE = .10$, $d = 0.45$, $p < .10$).

Discussion

Couples continued to improve in some areas of communication and maintained gains in others even after they had been out of therapy for 2 years. As predicted in Hypothesis 1, both husbands' and wives' negativity and withdrawal declined from post-therapy to 2-year follow-up. Although there was no significant change in problem solving, our findings that partners not only maintained their treatment gains in problem solving but continued to improve following termination in negativity and withdrawal is very exciting for clinicians and researchers alike, particularly given the well-documented relapse in relationship distress following treatment termination (Snyder et al., 2006). Still, this excitement should be tempered by our finding of change in the opposite direction expected for positivity (it decreased rather than increased). Decline in positivity from post-therapy to 2-year follow-up is perplexing. One explanation for the drop in observed positivity from post-therapy to 2-year follow-up is that partners are becoming generally less emotionally reactive. Negativity, positivity, and withdrawal all decrease from the post-therapy assessment to the 2-year follow-up assessment. Previous research using the current sample found that couples with wives who were more emotionally aroused in the pre-treatment relationship problem interactions were more likely to be nonresponders to treatment 2 years after therapy (this effect was stronger in TBCT couples), whereas couples with wives who were less emotionally aroused were more likely to be recovered 2 years later (B. R. Baucom, Atkins, Simpson, & Christensen, 2009). It could be that our findings on communication suggest that couples are showing greater engagement in the task (decreases in withdrawal and no change in problem solving) but reductions in emotional arousal (less negativity and positivity) in general. An alternative explanation for our findings related to positivity, however, is that the reverse pattern of change from post-therapy to 2-year follow-up (i.e., decreases) relative to pre-therapy to post-therapy (i.e., increases) may simply be regression to baseline. If this were the case for all communication, however, we would expect negativity and withdrawal to increase from post-therapy to 2-year follow-up because they decreased from pre-therapy to post-therapy.

Table 4
Associations Between Observed Communication and Relationship Outcomes Five Years Post-Therapy

Association type	Negativity		Positivity		Withdrawal		Problem solving	
	B (*SE*)	*d*	*B* (*SE*)	*d*	*B* (*SE*)	*d*	*B* (*SE*)	*d*
Associations between treatment response and observed communication								
Associations with post-therapy levels of communication								
Husband behavior	−0.06 (0.08)	−0.13	0.13 (0.08)	0.32	0.01 (0.02)	0.04	0.19 (0.08)*	0.46
Wife behavior	−0.08 (0.09)	−0.17	0.11 (0.08)	0.27	−0.02 (0.05)	−0.08	0.21 (0.08)**	0.52
Associations with changes in communication from pre-therapy to post-therapy								
Husband behavior	−0.05 (0.08)	−0.11	0.10 (0.09)	0.25	0.02 (0.05)	0.07	0.11 (0.09)	0.27
Wife behavior	−0.07 (0.08)	−0.15	0.18 (0.08)*	0.44	−0.04 (0.05)	−0.16	0.15 (0.08)†	0.37
Associations with changes in communication from post-therapy to 2-year follow-up								
Husband behavior	0.11 (0.08)	0.24	−0.10 (0.10)	−0.25	−0.01 (0.06)	−0.04	−0.05 (0.11)	−0.12
Wife behavior	0.07 (0.11)	0.15	−0.14 (0.12)	−0.34	0.08 (0.06)	0.33	−0.14 (0.12)	−0.35
Associations between relationship stability and observed communication								
Associations with post-therapy levels of communication								
Husband behavior	−0.15 (0.10)	−0.33	0.11 (0.08)	0.27	−0.05 (0.05)	−0.19	0.17 (0.09)†	0.41
Wife behavior	−0.17 (0.10)	−0.36	0.13 (0.08)†	0.32	−0.08 (0.05)†	−0.33	0.23 (0.09)*	0.57
Associations with changes in communication from pre-therapy to post-therapy								
Husband behavior	−0.11 (0.08)	−0.24	0.08 (0.11)	0.20	−0.01 (0.05)	−0.04	0.08 (0.10)	0.19
Wife behavior	−0.12 (0.09)	−0.25	0.19 (0.10)*	0.46	−0.06 (0.04)	−0.25	0.14 (0.09)	0.35
Associations with changes in communication from post-therapy to 2-year follow-up								
Husband behavior	0.08 (0.16)	0.17	−0.22 (0.13)†	−0.54	0.08 (0.07)	0.30	0.10 (0.17)	0.24
Wife behavior	0.13 (0.15)	0.27	−0.10 (0.11)	−0.24	0.01 (0.06)	0.04	−0.03 (0.11)	−0.07

Note. *d* = Cohen's *d*. Unstandardized regression coefficients for effects of treatment response and stability represent the magnitude of the difference between the two levels (because for treatment response, *nonresponder* = −.5, *responder* = .5; for stability, *divorced* = −.5, *intact* = .5). Therapy type and pre-treatment distress level were also included as Level 2 covariates. Results of post hoc tests are reported in the text of the Results section.
† $p < .10$. * $p < .05$. ** $p < .01$.

An important consideration when interpreting these general results is the partial support we found for hypothesized treatment differences: Whereas IBCT wives' negativity decreased from post-therapy to 2-year follow-up, TBCT wives' negativity did not significantly change. Similarly, IBCT husbands' positivity did not significantly change from post-therapy to 2-year follow-up, whereas TBCT husbands' positivity actually decreased, and after controlling for withdrawal, we found a similar pattern in wives. These treatment differences are similar to findings in a series of published outcome articles that examined trajectories of change in relationship satisfaction in these two treatments. Specifically, in the 2 years following therapy, IBCT couples started to improve in relationship satisfaction more quickly than did TBCT couples, and IBCT couples who remained together were significantly more satisfied than their TBCT counterparts at 2-year follow-up (Christensen, Atkins, Yi, Baucom, & George, 2006). In the most recent examination of treatment outcome, data on satisfaction from repeated 6-month follow-up assessments for 2 years after therapy termination significantly favored IBCT over TBCT, but these differences evaporated over the course of 5-year follow-up (Christensen et al., 2010). Thus, the current study is consistent with previous ones in offering some support for IBCT's statistical but not dramatic superiority over TBCT during at least the first 2 years of follow-up.

One explanation for these treatment differences is the ways in which the respective therapies create change. Whereas TBCT focuses on specific behaviors to increase and decrease and instructs partners in how to do so, IBCT has an added focus on general themes, emotional reactivity, and change in behavior that is evoked and then naturally reinforced (i.e., contingency-shaped change). These differences may lead to greater changes in communication in TBCT in the short run as was found in Sevier et al. (2008). When therapy is no longer available to help reinforce the "rules" and when demand characteristics are lessened 2 years after the end of treatment, TBCT couples may lapse in their use of positive behavior and resort to higher level of negative behavior. IBCT couples, on the other hand, may be better at maintaining or enhancing their improvements in communication, as found in the current study, because they may be shaped more by natural reinforcers. Although clearly speculative, the possibly greater impact of contingency-shaped versus rule-governed change is a potential explanation for these treatment findings. That being said, the impact of treatment on communication was more similar between TBCT and IBCT than different. We found no significant effects of treatment on post-therapy levels of, or changes in, observed withdrawal or problem solving, and no significant differences between treatments in the levels of our four communication variables at 2-year follow-up.

In addition to changes in communication, we found some links between communication and relationship satisfaction 2 years after therapy termination (Hypothesis 2). These links were in the expected direction (i.e., decreases in withdrawal and increases in problem solving associated with greater relationship satisfaction), with one important exception. Although reductions in wives' positivity from post-therapy to 2-year follow-up were associated with lower levels of relationship satisfaction in husbands at 2-year follow-up, these reductions were associated with *higher* levels of relationship satisfaction in wives. Although they were in the opposite direction of one another, the effect sizes for these associations were almost identical (0.20 for husbands and −0.22 for wives). The findings for wives are similar to the findings of D. H. Baucom and Mehlman (1984), in which higher levels of positivity at TBCT termination were associated with separation 6 months later. Although these findings are contrary to what we expected, they are consistent with other odd positivity findings in research with couples (e.g., D. H. Baucom et al., 2006; Gottman & Krokoff, 1989; Karney & Bradbury, 1997; Schilling et al., 2003). However, our post hoc tests clarify this finding and support the explanation that positivity may mask unassertiveness and may function as avoidance. Just as Schilling et al. (2003) found increases in women's positivity no longer predicted greater distress when controlling for mutual avoidance, we found the odd associations between positivity and subsequent outcomes were no longer significant after controlling for concurrent observed withdrawal. In light of these findings, we suggest that the link between decreases in wives' positivity and better subsequent outcomes represents the benefits of a more direct approach to solving problems (i.e., being more assertive/direct and less appeasing). We think these findings underscore the importance that positivity be considered in the context of other communication, namely avoidance/withdrawal.

Our Hypothesis 3 findings of links between relationship outcomes 5 years later and positivity were consistent with theory and predictions; increases in wives' positivity from pre-therapy to post-therapy were significantly associated with relationship stability and treatment response 5 years later. In fact, these were the *only* significant associations between changes in communication and 5-year couple outcome. After controlling for withdrawal, the association between increased positivity and treatment response remained, as did a marginally significant association with stability. However, there were few other links between communication and 5-year outcomes, suggesting that there are a number of other factors to be considered in discriminating between couples who improve following behavioral couple therapies and those who do not. Other factors that presumably influence long-term outcome are individual differences, internal processes including attribution and emotion, external factors such as stress, and interactions between these factors (Karney & Bradbury, 1995).

Of note is the extent to which our significant effects were found for wives but not husbands. Relationship researchers have demonstrated that both wives' behavior and wives' interpretations of husbands' behavior discriminates between distressed and nondistressed couples (Floyd & Markman, 1983), and that links between affect and subsequent relationship satisfaction are stronger in wives (Gottman, 1990), which has led them to describe wives as a "barometer" of a distressed relationship. Consistent with this, we found that communication levels at post-therapy and communication change over therapy and follow-up were associated with wife satisfaction at 2-year follow-up but that only husbands' and wives' improvements in problem solving after termination were associated with husband relationship satisfaction at 2-year follow-up—and these latter effect sizes were quite small. Similarly, associations between communication and couple outcomes at 5-year follow-up were stronger and more consistent for wives than for husbands.

An important limitation of this study is that the couples that presumably would have performed worst in the communication assessment (i.e., those that separated/divorced before the 2-year follow-up) did not participate in interactions in the 2-year follow-up assessment. Although we controlled for initial level of relationship distress in all analyses, our results are likely somewhat

biased nonetheless, and we likely have a limited range of communication at 2-year follow-up. It is likely that if all couples were included in the 2-year follow-up observational assessment, the maintenance of and improvements in communication that we found would be smaller, and the links with relationship outcomes larger, than those we found. Also, it is important to note that one set of analyses did not necessarily include the same group of couples as another. Although we were able to determine relationship stability on all 134 couples in this sample, we were missing observational data on some couples at each time point (see Figure 1), we were unable to get in contact with some couples who remained married at 5-year follow-up to collect their reports of relationship satisfaction (which determined treatment response), and we did not collect relationship satisfaction data from couples who separated or divorced. Although each of the relationship outcomes (i.e., relationship satisfaction, treatment response, and relationship stability) offers us unique information relevant to treating couples, it is important to remember that each hypothesis includes a slightly different subsample from our total sample.

Another limitation of this study and observational research of couples in general is the specificity of the observed behavior and neglect of context when coding the behavior. It is certainly possible for a couple to have a constructive discussion that includes negativity, or a *de*structive discussion that includes quite a bit of positivity. We think our findings with regard to positivity speak to this: If one partner is upset with the other it is not necessarily helpful to hide these feelings and exclusively express positivity. Likewise, one partner offering solutions to a problem when the other wants to be listened to and understood could leave one partner unsatisfied and upset about the interaction. Thus, although researchers often make assumptions about the function of these behaviors, these assumptions are based solely on the topography of the behavior rather than the functional role they actually play in the relationship.

There are a number of strengths to this study. As previously mentioned, it is the first study of behavioral couple therapy that has examined changes in observed communication after the post-therapy assessment. The categories of behavior included in this study are both theoretically meaningful and empirically derived, as has been recommended by leading researchers in the field (e.g., Heyman, 2001). This study offers encouraging findings, in that couples on average continued to improve in targeted communication even after therapy completion. On the basis of these findings, there are a number of future directions that can be taken. One next step will be to examine whether distressed couples who respond to couple therapy are similar in their communication to nondistressed couples. Also, previous studies have found different patterns of communication in relationship problem-solving versus personal problem-solving (i.e., social support) interactions (e.g., Eldridge, Sevier, Jones, Atkins, & Christensen, 2007). Given basic research findings about the predictive power of social support behaviors (Pasch & Bradbury, 1998) and the importance of social support to key relationship processes (Reis & Shaver, 1988), another extension of this research is an examination of changes in personal problem interactions—and whether these changes account for additional variance in relationship outcomes when considered with the changes in relationship problem-solving interactions we have examined. Finally, given our findings related to positive communication in couples, future examination of its role in relationship functioning in combination with avoidance/withdrawal is important, as well as greater consideration of the context in which the communication occurs.

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