Generating Hypotheses After 14 Years of Marital Followup; Or, How Should One Speculate? A Reply to DeKay, Greeno, and Houck*

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Gottman and Levenson (2002), for the purpose of post hoc speculation, developed a number of ordinary least squares regressions to model the length of marriage of divorcing couples in a 14-year longitudinal study. We believe that our analyses are appropriate for our purpose. We do not agree with DeKay, Greeno, and Houck (2002) that a duration-model approach would have been more appropriate, and instead argue that the analyses used are more powerful and generate more interesting speculations. When speculating, one makes an important contribution just by being interesting, not necessarily by being right. The purpose of post hoc speculation is to generate discussion, and we are pleased that even at the outset we have accomplished this goal. In this reply to DeKay et al., we argue that the two-process model for earlier versus later divorc-ing that we propose is both interesting and clinically useful.

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I N a series of articles and books (Buehlman, Gottman, & Katz, 1992; Gottman & Levenson, 1992; Gottman, 1993, 1994; Gottman, Coan, Carrere, & Swanson, 1998; Gottman & Silver, 2000) we demonstrated that, across studies, we can predict whether or not a couple will divorce. In the Gottman et al. (1998) article, we also reported that the number of seconds of positive affect during a 15-minute conflict discussion will predict not only divorce and stability, but also whether the stable couples will be happily or unhappily married. These repeated results on divorce prediction are among the most replicated phenomena in basic research on marriages.

In the current admittedly speculative post hoc study (Gottman & Levenson, 2002), we examined the question of whether we can also "predict," from our Time-1 data how long the marriage will last for couples who did divorce. Of course, we did not yet know at Time-1 who would divorce, so this was not really a "prediction." DeKay et al. (2002) suggested that we examine all marriages in our analysis, but that simply makes no

conceptual sense, given our research question. The length of the marriage for the couples who *stayed married* has no conceptual meaning in this question. That is why we did not include all the couples in our analysis. However, in this reply, we report the result of some analyses using all couples that does make sense to us.

The distribution of this dependent variable, how long the marriage lasted for couples who divorced, no matter how we graph the figure, suggests to us that it is *not* a dichotomous variable; people are clearly divorcing at all times from 3 years to 26 years. Nonetheless, simply eyeballing this distribution, it does appear that there may be peaks before 10 years and after 10 years of marriage. Furthermore, there is some credibility to the idea that marriages may be at risk for divorce both earlier in the marriage (we know that half of all the divorces in the life course occur within the first 7 years, see Cherlin, 1981) and again later in the marriage, near midlife (Orbuch, House, Mero, & Webster, 1996; Steinberg & Silverberg, 1987).

It is not every day that we do a 14-year longitudinal study. Replication hopefully will occur, but it clearly will not occur for some time. Given these facts, it makes sense to ask, for the purposes of speculation should we collapse this variable and treat it as dichotomous? We think not. We have very little on which to base our speculation. Why lose information in our analyses?

Should we generate hypotheses from these data that may have clinical relevance? We think it is a good idea, as long as it is taken with a grain of salt, or even with a box of salt. Are such speculations useful to clinicians? Only if they help organize our clinical experiences, and suggest something we might not have already thought of. That is the ultimate test

for the utility of speculations. We propose that such is the case.

The first concept in our article is that different Time-1 processes may predict earlier versus later divorcing. The data support the idea that what Wile (1993) calls an "attack-defend mode" predicts early divorcing, while what we call an "emotionally disengaged mode" predicts later divorcing. Is this a potentially useful concept? We think it is. Why is this pattern clinically useful? These two types of couples, described only by the style with which they approach their most serious marital disagreements, the attack-defend and the emotionally disengaged couples are the ones most commonly discussed in the clinical literature. They are the systemic relational equivalent of externalizing and internalizing disorders in individual psychopathology. Hence, it does make some sense to describe them and to understand what other patterns may accompany these conflict styles. Fundamentally, what we did suggest is that earlier versus later divorcing may be the patterns that accompany attack-defend and emotionally disengaged conflict styles, respectively.

The regressions we conducted take the length the marriage lasted as a dependent variable, and the analyses are indeed based on a small number of couples ($N = 21$), and small samples are indeed sensitive to outliers. However, perhaps "outliers" are important under-sampled sub-populations. For this reason, we choose to leave in what some may call our outliers and present scatter diagrams so that readers may judge our data for themselves.

What about whether regression models are appropriate for these analyses? Are our data so wildly non-normal that we should not use ordinary least squares regression? Even though we speculated that a two-factor model (early and late divorcing) could describe these data, the actual

distribution we plotted is not significantly different from a normal distribution. Also, it is well known that the analysis of variance and regression (indeed any analysis based on the general linear model) are robust to variations from normality. The central limit theorem comes in to help create this robustness.

We can endlessly debate the adequacy of particular statistical analyses proposed, and tediously counterattack with reasons why the event-history analyses are not the correct analysis of choice. Instead, we would like to use this reply as an opportunity to address some of DeKay and his colleagues (2002) points and to present additional analyses to speculate further about our 14-year longitudinal data.

Re-analyses and Additional Analyses

In this longitudinal study, we have available to us *two* observational coding systems. The Specific Affect Coding System (SPAFF) is uniquely suited to focus on positive affect codes, and hence we can use it to code not only our conflict discussion, but also our events of the day discussion. In addition to the SPAFF codes, in this study we also have data from our Rapid Couples Coding System (RCISS; Gottman, 1996). The RCISS *focuses entirely on the conflict discussion* and it gives a very detailed perspective on negative affect. In our re-analyses, we will use conflict data from the RCISS to focus on early divorcing, *and* data from the SPAFF from both the events of the day discussion and the conflict discussion to focus on later divorcing. We will test the hypothesis that it is the presence of Time-1 negative affect during conflict that predicts early divorcing, and the absence of Time-1 positive affect during *all* our conversations that predicts later divorcing.

Description of RCISS Coding

The divorce prediction data presented in Gottman and Levenson (1992) and in Gottman (1993, 1994) involved coding the video tapes of a marital conflict discussion with the Rapid Couples Interaction Coding System (RCISS). The RCISS employs a checklist of 13 behaviors that are scored for the speaker, and nine behaviors that are scored for the listener on each turn at speech. A turn at speech is defined as all utterances by one speaker until that speaker yields the floor to vocalizations by the other spouse (vocalizations that are merely back-channels, such as "mm-hmm," are not considered as demarcating a turn). In the present study, only codes assigned to speakers were used. These codes consisted of five positive codes (neutral or positive problem description, task-oriented relationship information, assent, humor-laugh, other positive) and eight negative codes (complain, criticize, negative relationship issue problem talk, yes-but, defensive, put-down, escalate negative affect, other negative). The average number of positive and negative speaker codes per turn of speech, and the average of positive minus negative speaker codes per turn was computed. The following summary codes were calculated: Criticism, Defensiveness, Contempt, Stonewalling (listener withdrawal from marital interaction), and the total positive minus negative interactions. While the speaker codes are based upon specific behaviors and represent the tone of what was said, the summary codes are the total number of specific codes within a category checklist within a turn at speech and represent more global categories. Tapes were coded by a team of coders using verbatim transcripts. Using Cohen's kappa, reliability for all RCISS subcodes taken together was .72. For the individual speaker codes kappas ranged from .70 to .81. The four summary codes that emerge from the

RCISS are Criticism, Defensiveness, Contempt, and Stonewalling.

We also then transformed our dependent variable as follows: early divorcing (divorced by 1987? yes or no), and later divorcing (divorced after 1987, using the subsequent data? yes or no), and the conducted discriminant function analyses. All the couples could be used in these analyses. The discriminant function analysis is summarized by the canonical correlation, which is the correlation between the best weighting of the prediction variables and the criterion variable; its statistical significance is assessed by the chi-square statistic.

Early Divorcing

We found that, using: the total wife and husband RCISS scores on positive-minus-negative RCISS codes, and Criticism, Defensiveness, Contempt, and Stonewalling on the conflict conversation, the canonical correlation was .51, with $\chi^2(10) = 21.26$, $p < .05$, with 83.5% accuracy in prediction. This means that the focus on negative affect was warranted in predicting early divorcing. Again using all the couples, with the early divorce variable dichotomized, we assessed the contribution of specific negative RCISS codes, by computing the univariate F-ratios (df = (1, 77)). They were: husband positive minus negative RCISS codes $F = 10.27$, $p < .01$ wife positive minus negative RCISS codes $F = 12.71$, $p < .001$; husband criticism $F = 1.46$, ns; husband defensiveness, $F = 16.08$, $p < .001$; husband contempt, $F = 4.26$, $p < .05$; husband stonewalling, $F = 7.57$, $p < .01$; wife criticism, $F = 4.03$, $p < .05$; wife defensiveness, $F = 12.69$, $p < .001$; wife contempt, $F = 9.32$, $p < .01$; and wife stonewalling, $F = 2.00$, ns. Thus, the negative codes that contributed to this prediction were the husband's defensiveness, contempt, and stonewalling, and the wife's criticism, contempt, and defensiveness.

Later Divorcing

The positive SPAFF codes for our two conversations resulted in a canonical correlation of .50, with $\chi^2(4) = 13.99$, $p < .01$, with 75.0% accuracy in prediction. This means that the positive SPAFF codes were able, on their own, to predict later divorcing. To determine which specific positive SPAFF codes are doing the work in this discrimination, we computed the univariate F-ratios with df = (1, 50). They were: for wife positive during events of the day, $F = 3.33$, $p = .074$; husband positive during events of the day, $F = .03$, ns; wife positive during conflict, $F = 9.10$, $p < .01$; and husband positive during conflict $F = 4.90$, $p < .05$.

Summary and Conclusions

The DeKay et al. critique (2002) has given us the opportunity to re-suggest, *as speculation,* that, in terms of longitudinal outcome, there are two dysfunctional modes of marital interaction, a later-divorcing emotionally disengaged mode that is devoid of positive affect (either during conflict or when discussing the events of the day), and an earlier divorcing attack-defend mode during conflict. We speculate that both modes are likely to lead to eventual dissolution of the marriage. Subsequent research needs to test the idea that these two kinds of couples can be identified through the observational coding of their nonconflict and conflict interaction, and that these are indeed stable modes of interaction.

What are the clinical implications of these two modes? These are two ways to be dysregulated with respect to interaction, either with runaway negative affect, or no negative affect, but also with no positive affect. We suspect that these two couples require very different clinical marital therapy interventions. The attack-defend mode is due to a constriction of social processes available to the couple.

It requires a kind of "opening up" of the conflict discussion so that other processes (e.g., humor, affection, interest, neutral affect) can "flow in" and become available to the couple. It is a dysregulation of negative affect, and requires couples to be able to de-escalate their conflict by physiological self-soothing (see Gottman, Coan, Carrere, & Swanson, 1998) and the management of such emotions as contempt, disgust, sadness, anger, and fear. However, the emotionally disengaged pattern is about the absence of any affect, particularly positive affect, a dysregulation that we think represents a defeated retreat into a world of non-emotion.

There is one major strategy that seems to us to be most helpful in therapy with the attack-defend mode. The therapist would do well to investigate the "anatomy" of attack-and-defend. Within the initial strike of attack and within the reply of defensiveness there are narratives with a history that taps internal working models that create these negative cycles. This anatomy needs to become public parlance in the therapy so that the couple can learn to truncate, avoid, or eventually process these negative cycles in a recovery conversation. In our work the use of video playback and processing the attack-defend pattern in a recovery conversation (see Wile, 1993) using our "aftermath of a fight questionnaire" has been most helpful with these couple (see Gottman, 1999). With the emotionally disengaged couple, the deadness of both the conflict and the events-of-the-day discussions may be due to the conversation the couple never had but needed to have (Wile, 1993). There may be obstacles to having these needed conversations in their everyday nonconflict interaction. We suggest then that for this emotionally disengaged mode the emotional disengagement is a result of a failure to connect emotionally in everyday interaction. Possibly this dramatic failure of the marital friendship has led to the existential and emotional vacuum that characterizes these couples (see Gottman & DeClaire, 2001).
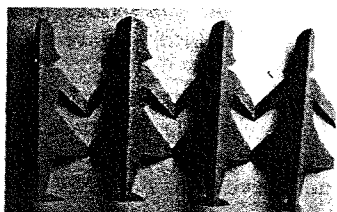
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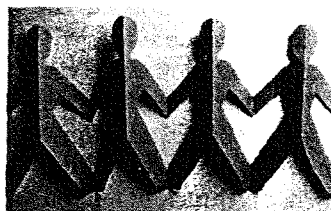
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