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PSYCHOLOGY AND THE STUDY OF MARITAL PROCESSES

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ABSTRACT

The divorce rate in the United States is extremely high. It is estimated that between 50% and 67% of first marriages end in divorce. For second marriages, failure rates are even higher. There are strong negative consequences to separation and divorce on the mental and physical health of both spouses, including increased risk for psychopathology, increased rates of automobile accidents, and increased incidence of physical illness, suicide, violence, homicide, significant immunosuppression, and mortality from diseases. In children, marital distress, conflict, and disruption are associated with depression, withdrawal, poor social competence, health problems, poor academic performance, and a variety of conduct-related difficulties. Though intervention techniques might be expected to reduce these grim statistics, our best scholars have concluded that marital therapy is at a practical and theoretical impasse. This article discusses the progress of research on the study of marriage.

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WHY STUDY MARRIAGE?

The divorce rate remains extremely high in the United States. Current estimates of the chances of first marriages ending in divorce range between 50% and 67% (Martin & Bumpass 1989). Failure rates for second marriages are about 10% higher than for first marriages.

We now know that separation and divorce have strong negative consequences for the mental and physical health of both spouses. These negative effects include increased risk for psychopathology; increased rates of automobile accidents including fatalities; and increased incidence of physical illness, suicide, violence, homicide, significant immunosuppression, and mortality from diseases (for a review, see Bloom et al 1978, Burman & Margolin 1992). Marital distress, conflict, and disruption are also associated with a wide range of deleterious effects on children, including depression, withdrawal, poor social competence, health problems, poor academic performance, and a variety of conduct-related difficulties (Cowan & Cowan 1987, 1990; Cowan et al 1991; Cummings & Davies 1994; Easterbrooks 1987; Easterbrooks & Emde 1988; Emery 1982, 1988; Emery & O'Leary 1982; Forehand et al 1986; Gottman & Katz 1989; Hetherington 1988; Hetherington & Clingempeel 1992; Hetherington et al 1978, 1982; Howes & Markman 1989; Katz & Gottman 1991a,b; Peterson & Zill 1986; Porter & O'Leary 1980; Rutter 1971; Shaw & Emery 1987; Whitehead 1979). There is evidence from two US national probability samples that adults who experienced a divorce as a child are under considerably more stress than those who did not (Glenn & Kramer 1985, Kulka & Weingarten 1979). These adults report less satisfaction with family and friends, greater anxiety, that bad things more frequently happen to them, and that they find it more difficult to cope with life's stresses in general. In a recent report based on the Terman longitudinal study of gifted children (Friedman et al 1995), survival curves show that the combination of one's parents having di-

vorced and one's own divorce reduced longevity by an average of approximately eight years.

Intervention techniques such as marital therapy might be expected to reduce these grim statistics. Our best scholars have concluded that, unfortunately, marital therapy is at a practical and a theoretical impasse (Jacobson & Addis 1993). Outcome results suggest the following. 1. Most couples (75%) report improvement in marital satisfaction immediately following marital therapy. 2. All therapies are about equally effective in this regard, regardless of the "school" of therapy, once replication studies have been done. 3. There is a strange effect that separate "components" of an intervention are often equally effective, and about as effective as the combined treatment; thus, it has proven difficult to build a theory of change based on dismantling a complex intervention. 4. There is a large relapse effect. In general, after long-term follow-up, only between 30% and 50% of couples stay improved. In fact, the relapse data are probably much more grim than these conclusions suggest. As far as we know, long-term follow-up is likely to yield evidence of even greater relapse.

PSYCHOLOGY'S EARLY YEARS IN STUDYING MARRIAGE

Psychology was a latecomer to the study of marriage. Sociologists had been studying marriages for 35 years before psychologists became interested in the topic, although the first published study on marriage was by a psychologist—Louis Terman—in 1938 (Terman et al 1938). What psychologists initially brought to the study of marriage was the use of observational methods, the design and evaluation of intervention programs, and an unbridled optimism that changing marriages was going to be easy and quick work. These contributions have had an enormous impact on the study of marriage. Psychologists were initially skeptical about studying marriage, in part because personality theory was facing a severe challenge in the 1970s from the work of Walter Mischel. In *Personality and Assessment* (Mischel 1968), Mischel reviewed research on personality and suggested that personality theory had come far short of being able to predict and understand behavior. He concluded that correlations were quite low on the whole, that the field was plagued with common method variance (mostly self-reports predicting self-reports), and that the best predictors of future behavior were past behavior in similar situations. This book was a great stimulus to many researchers. It encouraged a new look at personality measurement, validity, and reliability (Wiggins 1973) and stimulated new kinds of research in personality. It contributed, however, to a pessimistic view that research in interpersonal psychology would have very little payoff. In hindsight, however, this view was wrong. We are in fact learn-

ing that much of the order in individual personality exists at the interpersonal level. For example, Patterson (1982), in his conclusion that there is a great deal of consistency across time and situations in aggression, suggested that the aggressive trait should be rethought in interpersonal terms as the aggressive boy's recasting people in his social world to play out dramatic coercive scenes shaped in his family. The same is true of gender differences: They appear to emerge primarily in the context of relationships (Maccoby 1990).

The use of self-report measures, including personality measures, had initially dominated the field of marriage research. Unfortunately, even with the problem of common method variance, the self-report paper-and-pencil personality measures yielded relatively weak correlations of marital satisfaction (Burgess et al 1971). As an example, psychoanalysis initially embraced Winch's complementarity of need theory (Winch 1958), which proposed that happy marriage would be associated with spouses who have complementary needs (such as she needs to dominate and he needs to be dominated). No other theory in this field has ever been as soundly rejected as Winch's. Not until studies asked spouses to fill out questionnaires about their spouse's personality were substantial correlations discovered with marital satisfaction. Unhappily married couples were found to endorse nearly every negative trait as characteristic of their spouses (the negative halo effect), whereas happily married spouses were found to endorse nearly every positive trait as characteristic of their spouses (the positive halo effect) (Nye 1988).

THE GLOP PROBLEM AND REFUSING TO LIVE WITH GLOP

Bank et al (1990) wrote an important paper subtitled "Living with Glop." Glop refers to high correlations among variables obtained using a common method of measurement, usually with just one reporter. In the marital field, this usually refers to self-report data obtained from a single reporter. The point to be made about glop is an old one. Bank et al noted that reviews by Rutter (1979) and Emery (1982) showed consistent correlations between marital discord and child adjustment problems, but that Emery & O'Leary (1984) pointed out that, in most of these studies, both variables come from one person (usually the mother), who uses self-report measures. It was the experience of Emery & O'Leary and other investigators that the correlations between parents' and teachers' reports of child behaviors were essentially zero. Structural Equations Modeling (SEM) was developed in part to deal with the problem of increasing reliability and validity in measurement of constructs. The SEM methods hark back to a classic paper in measurement by Campbell & Fiske (1959), in which they argued for the use of a multitrait-multimethod matrix. It is quite common

to be able to create beautiful SEM models when all the data are collected by the same agent and self-report data are employed. However, once the issue of validity is introduced to the model (just adding the requirement that the data correlate with measurement of the same construct using a different reporter or different method), the models typically fall apart.

In studying marriage, the glop problem is also of great theoretical concern. For example, it is commonly observed that measures of neuroticism are correlated with marital satisfaction (Kurdek 1993). It is, however, difficult to demonstrate that one is really measuring neuroticism rather than distress associated with being unhappily married. It is well known that unhappily married people are more depressed, more anxious, more distressed, less optimistic, and so on. Is the personality measure assessing an enduring trait or a state of wellness, distress, or the current quality of life, which is essentially the same thing that the marital satisfaction measure taps?

The glop problem also occurs when one uses different reporters, as Kelly & Conley (1987) did when they had friends and acquaintances of the couple fill out the personality measures. Clearly, friends are likely to be familiar with the general dysphoria of their unhappily married friends, and they are likely to use the items of the personality tests they are given to report this fact. The conclusion we must reach from these studies is clear: *We should refuse to accept constructs as explanatory if they have not dealt adequately with the glop problem.* It is absolutely critical that any theory of marriage be very careful about how a construct was measured in drawing conclusions. This is an admonition that all studies of marriage employ multiple methods to operationalize constructs.

THE RELUCTANCE TO OBSERVE COUPLES

Researchers have been reluctant to use systematic observation to study couples, primarily because it is very costly and frustrating. In addition, it takes lots of time and experience to develop a good coding system for marital interaction, and then more time to obtain actual numbers from tapes of the interaction. The researcher must persistently deal with issues of reliability of measurement and problems with defining categories and interobserver reliability drift and decay (Reid 1970). It is so much easier to hand out a packet of questionnaires. In addition, observational measures are often somewhat atheoretical. They usually are designed to exhaustively describe all the behavior within a particular framework that can be observed in a particular situation. In contrast, a questionnaire measures a specific set of constructs, such as egalitarianism in the marriage, paranoid ideation in each partner, and so on. After an observation, it is often unclear what has been measured. Consequently, a purely descriptive,

hypothesis-generating phase of research is required to validate the observational measures—an added time-consuming phase that is often skipped. While observational data are often a richer source of hypotheses and are more satisfying to the truly voyeuristic researcher, they also require much more psychometric work to know what one has actually measured.

Moreover, underlying the selection of categories for any observational system are a set of assumptions and some rudimentary theory about what behaviors are important to observe. For example, the Marital Interaction Coding System (MICS) emerged from behavioral marital therapy in which it was considered important to "pinpoint" the marital issue; as such, for example, vague statements of the problem were considered "negative," whereas specific statements were considered "positive." Only recently have Heyman et al (1995) been able to conduct an important study of the structure of the MICS and provide an empirically based guide about what it may measure. They used an archival data set of 995 couples' interactions coded with the Marital Interaction Coding System–IV (MICS). Their factor analysis yielded four factors: hostility, constructive problem discussion, humor, and responsibility discussion.

Furthermore, observational approaches to the study of families in the 1960s by General Systems theorists failed miserably. (The General Systems theorists were a group of researchers and clinicians who began to view the family as an interactive system and to emphasize communication patterns as a potential etiology of psychopathology.) The story of this failure is very dramatic. First, a few maverick psychologists, psychiatrists, and anthropologists in the 1950s observed a strange pattern of interaction between adult schizophrenics and their mothers when they visited them in the hospital. The mothers would greet their children with warmth and then stiff coldness, all packaged in one embrace. The researchers called this the "double bind" theory of schizophrenia (Bateson et al 1956), which maintained that the mother sent a mixed message to her child and that this message put the child in a "double bind," meaning that he was damned if he responded to one part of the message and damned if he responded to the other (contradictory) part of the message. The General Systems theorists thought that the resulting double bind created the emotional withdrawal we have come to associate with schizophrenia. The way out of the double bind was to "meta-communicate," that is, to raise the communication to a new level through commenting on the communication itself.

In 1964, a new journal, *Family Process,* was formed and was dedicated to research on possible family origins of mental disorders. A lot of this research was observational, because the theories focused on communication. Unfortunately, this early quantitative observational research was very weak. Not a single hypothesis of these General Systems theorists received clear support from research, except for the finding that the communication of families with a

schizophrenic member was more confusing than that of normal families (see Jacob 1987). This hardly encouraged others to do observational research on families.

In the early 1970s, however, several psychology laboratories did begin to use direct observation to study marital interaction.[1] These investigators were motivated by the idea that marriages could be helped with a behavioral approach that essentially taught couples new social skills for resolving conflict. Because these researchers all came from a behavioral perspective, observational methods were part of the assumed assessment battery. The historical reason for this is worth noting. Early in the intervention research on families with children who had problems, researchers (Robert Weiss, Hyman Hops, JR Patterson) at the Oregon Social Learning Center had noted that even if the children did not improve, the parents' claimed that their children were greatly improved in self-reports of their satisfaction with treatment. These outcomes bred a distrust among researchers of parental reports of child status and a reliance on direct observation. They also decided to design an intervention for marriages in distress and naturally employed observational methods to help distressed couples resolve their conflicts. Thus, from a classic book chapter published by Weiss et al (1973), observational research on marriage was born.The chapter was titled "A Framework for Conceptualizing Marital Conflict: A Technology for Altering It, Some Data for Evaluating It." It was an optimistic attempt to define an entire field in one paper. It did just that.

The first question that marital researchers tackled was the same question raised by Terman: "What makes some marriages happy and others miserable?" Although it continues to be criticized today, marital satisfaction had shown itself to be a venerable criterion variable, and so the search began for the observational correlates of marital satisfaction. There was a faith that an adequate theoretical background would be provided by social learning theory—broadly conceptualized and coupled with principles of communication that had been described by General Systems theorists and by behavior exchange theorists (Thibaut & Kelley 1959). The hope was that by bringing precision to the study of marriage, a superior theory would emerge and lead the way to effective marital therapies. Two paths were simultaneously pursued: the attempt to answer Terman's question with psychological constructs, and the design and evaluation of new therapies.

[1]Only a handful of laboratories have consistently included observational methods in their study of couples. These researchers include J Alexander, D Baucom, S Beach, G Birchler, T Bradbury, A Christensen, F Fincham, FJ Floyd, M Fitzpatrick, WC Follette, M Forgatch, H Hops, G Howe, N Jacobson, G Margolin, H Markman, C Notarius, KD O'Leary, J Vincent, R Weiss, C Schaap (in Holland), the Max Planck group (in Germany, including L Schindler, K Hahlweg, and D Revenstorf), HB Vogel, K Halford (in Australia), and P Noller.

LABORATORY OBSERVATION OF COUPLES START GETTING CONSISTENT RESULTS

New Methods, New Concepts

In the 1970s, developmental psychology converged methodologically with the psychological study of marriage, and a common approach to the study of social interaction began to emerge. Important works included Lewis & Rosenblum's (1974) *The Effect of the Infant on Its Caregiver,* and RQ Bell's (1968) paper on the bidirectionality of effects between parent and child. These works led researchers to view interaction as sequences of behavior unfolding over time. In 1974, the landmark *Communication, Conflict, and Marriage* appeared; the authors, Raush et al, had followed a cohort of newlyweds completing the transition to parenthood. Raush et al introduced the use of Markov models of sequential interaction and an idea they called "adaptive probabilism." They claimed that marriages and families should be studied as systems, and suggested how this could be done mathematically using "information theory" (Shannon & Weaver 1949) for the study of sequential patterns of interaction, showing that the mathematics were a new approach to interaction. Instead of this systems concept remaining a vague metaphor, or a mathematical procedure for analyzing data, Raush et al realized that it was a whole new way of thinking. It was their intention to introduce the idea of stochastic models, which are uniquely designed for thinking in terms of systems rather than individual behavior. Stochastic models refer to the conceptualization of behavior sequences in terms of probabilities and the reduction of uncertainty in predicting patterns of interaction. (For a systematic development of these concepts and their mathematics, see Bakeman & Gottman 1986, Bakeman & Quera 1995, and Gottman & Roy 1990.)

New Findings

Because of space limitations, only a sampler, some general conclusions, and a flavor of the findings are presented. Focusing on studies that included some sequential analyses of the data, this review is restricted to the research of Weiss (Oregon), Raush (Massachusetts), Gottman (Washington), Schapp (Holland), Ting-Toomey (New Jersey), the Max Planck group (Revenstorf, Hahlweg, Schindler, and Vogel in Munich), and Fitzpatrick (Wisconsin). What were the results of various laboratories that investigated the Terman question, and in particular, what were the results of sequential analyses?

Of the many studies that have observed marital interaction, few have employed sequential analyses. There are only two such studies that use the MICS. Margolin & Wampold (1981) reported the results of interaction with 39 cou-

ples, combined from two studies conducted in Eugene, Oregon, and Santa Barbara, California. Codes were collapsed into three global categories: positive (problem-solving, verbal and nonverbal positive), negative (verbal and nonverbal negative), and neutral. Distressed couples showed negative reciprocity through Lag 2, whereas nondistressed couples did not demonstrate this effect to any significant extent. For positive reciprocity, Margolin and Wampold found that, "whereas both groups evidenced positive reciprocity through Lag 2, this pattern appears to continue even into Lag 3 for distressed couples" (p. 559). Thus, reciprocating positive acts were more likely between distressed than for nondistressed couples. Gottman (1979) had reported similar results, suggesting that distressed couples showed greater rigidity and interactional structure than nondistressed couples.

Margolin & Wampold also defined a sequence called "negative reactivity," which involves a positive response to a negative antecedent by one's spouse. They proposed that there is a suppression of positivity following a negative antecedent in distressed couples. They found this for all four lags for distressed couples, but they found no evidence for this suppression of positivity by negativity for any lag for nondistressed couples.

Revenstorf et al (1980), studying 20 German couples, collapsed the MICS categories into six summary codes. These codes were positive reaction, negative reaction, problem solution, problem description, neutral reaction, and filler; interrupts, disagrees, negative solution, and commands were considered negative. They employed both lag sequential analyses that allowed them to examine sequences out for four lags and the multivariate information theory that Raush et al (1974) had employed. From the multivariate information analysis, Revenstorf et al (p. 103) concluded that

> In problem discussions distressed couples respond differently from nondistressed couples....In particular [distressed couples] are more negative and less positive following positive (+) and negative (−) reactions. At the same time they are more negative and more positive, that is more emotional, following problem descriptions (P) of the spouse. Above all distressed couples are more negative and less positive in general than nondistressed couples.

They also found 17 sequences that differentiated the two groups. There is some inconsistency in the group differences for sequences with similar names (e.g. "reconciliation"), so I summarize only their clearest results. For what might be called constructive interaction sequences, they found that nondistressed couples engaged in more validation sequences (problem description followed by positivity) and positive reciprocity sequences (positive followed by positive). On the destructive side, they found that distressed couples engaged in more devaluation sequences (negative follows positive), negative

continuance sequences (which they called "fighting on" or "fighting back" in three-chain sequences), and negative startup sequences (which they called "yes-butting," meaning that somewhere in the four-chain sequence, negative follows positive) than nondistressed couples. After an analysis of the sequences following a problem description, Revenstorf et al (p. 107) concluded that

> It appears as if the distressed couples would interact like nondistressed—had they only higher positive response rates following a problem description of the spouse. And vice versa. The nondistressed would react equally detrimentally as the distressed—were they to respond more negatively to problem description of their spouse. The way they handle problems [problem description statements] seems to be the critical issue—not the sheer number of problems stated.

Revenstorf et al also continued their sequential analyses for five lags and found that these reciprocity differences held across lags. They wrote (p. 109):

> In summary, different patterns of response tendencies emerge for distressed and nondistressed couples. After a positive statement the partner continues to reciprocate it positively in nondistressed, whereas no immediate response is likely in distressed couples. After a negative statement no immediate response is most likely in nondistressed, whereas in distressed couples both partners continue to reciprocate negatively. A problem description finally is repeatedly followed by a positive response in nondistressed. In distressed couples, negative statements follow repeatedly.

Revenstorf et al then described four types of sequences. The first type of sequence is continued negativity (they called it "distancing"). This sequence measures the extent to which negativity becomes an absorbing state. The second sequence type was positive reciprocity (which they called "attraction"). This sequence measures the extent to which positivity becomes an absorbing state. The third sequence consisted of alternating problem descriptions and negativity (they called it "problem escalation"). The fourth type of sequence consists of validation sequences—sequences of alternating problem descriptions and positive responses to them (they called it "problem acceptance"). In most instances (e.g. for positive reciprocity), the differences between the groups were not very great. The evidence, however, was very clear that negativity represented an absorbing state for distressed couples but not for nondistressed couples. By Lag 2, nondistressed couples begin to escape from the negativity, but distressed couples could not escape. Graphs of the data provide dramatic information of group differences reflected in sequential patterning of MICS codes. The consistent findings in these two studies and other studies that have employed sequential analysis (Fitzpatrick 1988, Gottman 1979, Raush et al 1974, Schaap 1982, Ting-Toomey 1982; for a review, see Gottman 1994)

are that (*a*) unhappily married couples appear to engage in long chains of reciprocated negativity, and (*b*) there is a climate of agreement created in the interaction of happily married couples.

Most of these studies collapsed their codes into a global positive or negative. However, using a new method developed by Sackett (see Bakeman & Gottman 1986) called "lag sequential analysis," Gottman, Notarius, and Markman (see Gottman 1979) examined sequences using specific codes of their Couples Interaction Scoring System (CISS). These analyses revealed the anatomy of distressed and nondistressed marital interaction, both in the laboratory and at home. In a series of studies that combined observation with behavior exchange principles (using a "talk table" device in which spouses rated each exchange), and individual assessments of social competence, Gottman and his students developed an empirically based intervention, which they evaluated. In three separate studies significant results were obtained on marital satisfaction and interaction (Gottman 1979).

NEGATIVE AFFECT RECIPROCITY AS THE FAILURE OF REPAIR ATTEMPTS

The basic sequential result that held across laboratories was that greater reciprocated negative affective interaction is an absorbing state for dissatisfied couples. This result has profound implications for interaction process. The result means that negativity becomes an absorbing state for dissatisfied couples, that is, it is a state that is difficult to exit once entered.

We need to know two additional facts about marital interaction to understand the implications of this finding. Vincent et al (1979) studied the interaction of distressed and nondistressed couples in the Inventory of Marital Conflicts, a problem-solving task. The two groups could be discriminated from each other on five out of six MICS summary codes, positive problem solving, and verbal and nonverbal positive and negative codes. Vincent et al then asked the couples to try either to fake good or to fake bad during the next 10 minutes. Both groups of couples were unable to fake their nonverbal behaviors. Hence, nonverbal behavior may be a better discriminator of distressed and nondistressed groups than verbal behavior alone. Second, Gottman (1979) found that most couples express the most negative affect during the middle arguing phase of the conflict resolution, and their major attempts at repair of the interaction are usually delivered in this phase as well. Attempts at interaction repair are often delivered with negative affect. For example, statements like "Stop interrupting me!" or "We're getting off the subject" may be accompanied by irritation, tension, sadness, or some other form of distress. Thus, repair attempts

usually have two components, a negative affective nonverbal component and a metacommunicative content component attempting to repair the interaction.

The implication of greater negativity being an absorbing state for dissatisfied couples is that they may attend primarily to the negative affect component of repair attempts, whereas satisfied couples attend primarily to the repair component. Thus, it can be concluded that repair processes do work very well in dissatisfied marriages. Instead, what predominates in dissatisfied couples' attempts to use these social processes is the negative affect. Hence, in various sequential analyses of the stream of behavior, if one spouse attempts a repair mechanism with negative affect, the other spouse is more likely to respond to the negative affect component with reciprocated negative affect in a dissatisfied marriage than in a satisfied one. The usual social processes present during conflict that repair the interaction (such as metacommunication) do not work in unhappy marriages. These processes are the mechanisms used by satisfied couples for exiting a negative state (Gottman 1979). They include metacommunication, feeling probes that explore feelings, information exchange, social comparison, humor, distraction, gossip, finding areas of common ground, and appeals to basic philosophy and expectations in the marriage. What goes hand in glove with this phenomena is a constriction of social processes in distressed couples. The constriction of available social processes is the fascinating structural dynamic that maintains the absorbing state.

How does this constriction work? For example, assume that a message has two parts, one positive and one negative, such as "Stop interrupting me," which is an attempt to repair the interaction, but may have also been said with some irritation. In a happy marriage, there is a greater probability that the listener will focus on the repair component of the message and respond by saying, "Sorry, what were you saying?" In an unhappy marriage, there is a greater probability that the listener will respond only to the irritation in the message and say something like, "I wouldn't have to interrupt if I could get a word in edgewise." In this case the attempted repair mechanism does not work. The response to the negativity now continues for long chains of reciprocated negative affect in dissatisfied marriages. Negativity as an absorbing state implies that all these social processes have less of a chance of working because what people attend to, and respond to, is the negativity. An interesting side effect of this analysis is that the interactions of dissatisfied couples show a higher degree of interaction structure, more predictability of one spouse's behaviors from those of the other, and less statistical independence than is found in the interactions of satisfied couples. The interaction of happy married couples is more random than that of unhappily married couples. This is precisely what Raush et al (1974) predicted. One finding that may be related to this phenomenon is that greater structure may come to pervade positive as well as negative

interaction. This latter result is not as consistently found across laboratories, but this may not be so much a failure to replicate as the inconsistency across laboratories in conceptualizing, generating, and measuring "positivity" and in the lack of studies that do sequential analyses of data.

WHAT IS DYSFUNCTIONAL IN AILING MARRIAGES?

Research on the correlates of marital satisfaction represents only one way to address the Terman question. The second approach is to ask the longitudinal question about which marital interaction patterns and other variables predict marital stability and eventual happiness. There have been many suggestions about what is dysfunctional about ailing marriages. For example, Lederer & Jackson's (1968) book *Mirages of Marriage* spelled out what is dysfunctional about ailing marriages and how therapists should go about fixing them. They said that the sine qua non of marriage was the quid pro quo, that in good marriages there was a reciprocal exchange of positive behaviors, and that in bad marriages there was for various reasons (like romanticism) the breakdown of these agreements, these contracts. This point of view was consistent with an economically based behavior exchange theory recommended 10 years earlier by Thibaut & Kelly. (Romanticism, they argued, sets up false expectations that lead to the quid pro quo being violated.) The Lederer & Jackson book had an enormous impact. In marital behavior therapy, for example, it led to the method of contingency contracting.

The claim about quid pro quo turned out to be totally wrong (Murstein et al 1977). Not only were happy marriages not characterized by the quid pro quo, but it actually characterized unhappy marriages! This erroneous and untested assumption not only spawned a new marital therapy, even when it was confirmed it continued on as a major ingredient of marital therapy.

Marital therapy must be guided by a theory of both what is dysfunctional in ailing marriages and what is functional in marriages that are working. This knowledge helps spell out the objectives of the treatment and the assessment of the marriage, although not necessarily the methods for producing change. Two important hypotheses about what is dysfunctional in ailing marriages were suggested by Raush et al (1974). In their book, they raised two critical questions. The first was why in some marriages do minor conflicts "escalate far beyond their apparent triviality" (p. 2). Raush et al's question was also more broadly about what makes conflict constructive or destructive in marriages. Raush et al gave the example of a couple given the task of deciding about which television show to watch. They were impressed by the fact that many couples got quite involved with the role-play improvisations. One wife became extremely upset and said, "Damn it, you always watch what you want to

see. You're always drinking beer and watching football. Nothing else seems important to you, especially my wishes." The seemingly small discussion of which TV show to watch had led her to escalate and to express her complete exasperation with her partner and with the marriage. Raush et al's second question was whether the avoidance of conflict in marriage was functional or dysfunctional. They concluded that conflict avoidance is dysfunctional and that conflict or bickering about trivial issues is also dysfunctional (indicative of what they called "symbolic conflict").

Many other hypotheses have been proposed, most of them stated as if they were, without much empirical backing. In addition to the two proposed by Raush, a baker's dozen have been suggested: 1. a dominance structure is dysfunctional (Gottman 1979); 2. the lack of a dominance structure is dysfunctional (Kolb & Straus 1974); 3. a "demand-withdraw" pattern or a "pursuer-distancer" pattern is dysfunctional (e.g. Heavey et al 1995); 4. not being able to change each other's behavior is dysfunctional (Jacobson & Margolin 1979); 5. a good marriage is characterized by acceptance, in which spouses accept each other as they are and do not try to get behavior change (Jacobson & Christensen 1997); 6. poor problem solving is dysfunctional (Jacobson 1989); 7. "mindreading," or attributing motives or behaviors to one's spouse is dysfunctional (Watzlawick et al 1967); 8. not metacommunicating is dysfunctional (Bateson et al 1956); 9. need complementarity is functional (Winch 1958); 10. healthy marriage is not possible unless neuroses in one's primary family are resolved (Scharff & Scharff 1991); 11. most marital conflict is projection (Meissner 1978); first the marriage needs to become "conscious" (Hendrix 1988); 12. marriages start off happy, but over time reinforcement erosion occurs and that is the source of marital dysfunction (Jacobson & Margolin 1979); 13. only equalitarian marriage is functional (Schwartz 1994).

The questions we must ask are, first, are any of these contentions supportable, and second, are these results fundamental or epiphenomenal? It will be important to consider this latter question when discussing the construction of theory. As to the first question, the two primary approaches taken to date involve finding the correlates of marital satisfaction and the predictors of long-term stability and satisfaction.

The Criterion of Correlates with Marital Satisfaction

Gottman (1979) defined a dominance structure as asymmetry in predictability of one partner's behavior compared with the other's and used time-series analysis to assess its existence. Distressed couples had significantly greater asymmetry in predictability, with husbands being dominant. A study of 122 societies by Gray (1984) showed that female power is related to more positive sexual relations; however, a review by Gray & Burks (1983) concluded that

wife-dominant marriages are the least happy. However, because of the difficulty of operationalizing dominance and the lack of agreement among various measures of power and dominance (Rushe 1996), it cannot be concluded that the lack of a dominance structure is dysfunctional. The "demand-withdraw" pattern or a "pursuer-distancer" pattern as characteristic of unhappy marriage has been replicated a number of times (Gottman & Levenson 1988, Heavey et al 1995). In this pattern, it is the wife who raises and pursues the issues and the husband who attempts to avoid the discussion and tends to withdraw. A few results must qualify this conclusion. First, the pattern is also, to some degree, characteristic of happy marriages. Second, the pattern depends to some degree on whether the issue is the husband's or the wife's (Christensen & Heavey 1990). To date, there has been no research on the hypothesis that not being able to change each other's behavior is dysfunctional or that a good marriage is characterized by acceptance in which spouses accept one another as they are and do not try to get behavior change. The hypothesis that poor problem solving is dysfunctional has yet to be tested independent of other processes of communication, such as negative affect. In therapeutic interventions, the two aspects of interaction are also confounded. Mindreading is a frequent way that couples begin discussing an event or probing feelings (Gottman 1979). There is no evidence that mindreading by itself is dysfunctional. However, a potentially related process of negative trait attributions to one's spouse is characteristic of unhappily married couples. The simple leap from mindreading to negative trait attributions is manifested in phrases such as "You always" or "You never." The genesis of the transformation from simple, specific complaints to these global complaints is unknown and unexplored, but Fincham & Bradbury (1992) offered a clue when they reported that attributions of responsibility were correlated with the amount of anger displayed by wives during a problem-solving interaction and the amount of whining by both husbands and wives. There is no evidence that not metacommunicating is dysfunctional; Gottman (1979) found that the amount of metacommunication was the same for happily and unhappily married couples. However, sequential analyses showed that happily married couples used short chains of metacommunication often with agreement in the chain, whereas unhappily married couples used reciprocated metacommunication with metacommunication. This latter sequence shows that metacommunication in distressed couples was an ineffective repair technique. There has been little support for the other hypotheses of what is dysfunctional in ailing marriages.

The Longitudinal Criterion: Divorce Prediction Research

Gottman (1994) reported that there were three types of stable couples. One type of stable couple, called "volatile," was very much like Raush's bickering

couple, another type of stable couple was very much like Raush's conflict avoiding couples, while a third type of stable couple, called "validators," was like Raush's harmonious couples. That is, all three types of couples Raush et al had identified turned out to be stable. The three types of couples differed most dramatically in the amount and timing of persuasion attempts: Volatile couples had the most persuasion attempts and began them almost immediately; validators waited to begin their persuasion attempts until the middle of the conversation; and conflict avoiders avoided all persuasion attempts. The three types of couples also differed in how emotionally expressive they were, with volatile couples highest, validators intermediate, and avoiders lowest in emotionality. The three stable types of couples differed from couples on a trajectory toward divorce in many ways. First, using a balance theory of marriage, Gottman (1994) reported that the ratio of positive to negative codes during the conflict discussion was about 5.0 for the three types of stable marriages, while it was 0.8 for the unstable marriage. Second, couples headed for divorce were high on four behaviors that Gottman (1994) called the "Four Horsemen of the Apocalypse"; they are criticism, defensiveness, contempt, and stonewalling (or listener withdrawal). Consistent with the demand-withdraw pattern, women were significantly more likely than men to criticize, whereas men were more likely than women to stonewall.

WHAT WE HAVE LEARNED: THE PSYCHOLOGY OF MARRIAGE

The View from Observing

Only a few patterns seem to be consistently characteristic of ailing marriages. The first is negative affect reciprocity, which this review has suggested is a result of the failure of repair processes. Second is the demand-withdraw pattern. Third is a greater amount of negative than positive behaviors. Fourth is the presence of particular forms of negativity, namely criticism, contempt, defensiveness, and stonewalling.

The View from Cognitive Psychology

A thorough review of this productive area in the study of marriage is not possible here (see Fincham et al 1990). There is a universal phenomenon in marriage that has to do with how spouses in happy and unhappy marriages think about positive and negative actions of their partner. In a happy marriage, if one partner does something negative, the other partner tends to think that the negativity is fleeting and situational. For example, the thought might be something like, "Oh, well, he's in a bad mood. He's been under a lot of stress lately and

needs more sleep." So the negativity is viewed as unstable, and the cause is viewed as situational. In an unhappy marriage, however, the same behavior is likely to be interpreted as stable and internal to the partner. The accompanying thought might be something like, "He is inconsiderate and selfish. That's the way he is. That's why he did that." On the other hand, in a happy marriage, if someone does something positive, the behavior is likely to be interpreted as stable and internal to the partner. The accompanying thought might be something like, "He is a considerate and loving person. That's the way he is. That's why he did that." But in an unhappy marriage, the same positive behavior is likely to be seen as fleeting and situational hence as unstable. The accompanying thought might be, "Oh, well, he's nice because he's been successful this week at work. It won't last and it doesn't mean much." Holtzworth-Munroe & Jacobson (1985) used indirect probes to investigate when a couple might spontaneously search for causes of events and what they conclude when they do search for causes. They found evidence that distressed couples engaged in more attributional activity than nondistressed couples, and that attributional thoughts primarily surrounded events with negative impact. Nondistressed couples engaged in relationship-enhancing attributions while distressed couples engaged in distress-maintaining attributions. Distress-maintaining attributions maximize the impact of negativity and minimize the impact of positivity of the partner's behavior.

Moreover, there was an important gender difference. Distressed husbands generated more attributions than nondistressed husbands, but the two groups of wives did not differ. They suggested that, normally, males may not engage in much attributional activity but that they outstrip women once relationship conflict develops. Relationship-enhancing attributions were responses to positive partner behavior in both groups of couples. Relationship-enhancing attributions minimize the impact of negative and maximize the impact of positive behaviors of the partner. In an experimental study by Jacobson et al (1985b), distressed and nondistressed couples were randomly instructed to "act positive" or to "act negative." They found that distressed couples were likely to attribute their partner's negative behavior to internal factors, whereas nondistressed couples were likely to attribute their partner's positive behavior to internal factors. Thus, these attributions, once established, make change less likely to occur. Behaviors that should disconfirm the attributional sets tend to get ignored, whereas behaviors that confirm the attributional set receive attention. Attributional processes may tap the way couples think in general about the marital interaction as it unfolds in time. For example, Berley & Jacobson (1984) noted that Watzlawick et al (1967) were referring to attributional processes when they discussed the punctuation fallacy. The punctuation fallacy is that each spouse views himself or herself as the vic-

tim of the partner's behavior, which is seen as the causal stimulus. Attributions and general thought patterns about negative behaviors may thus be theoretically useful in providing a link between the immediate patterns of activity seen in behavioral interaction and physiological response and more long-lasting and more global patterns that span longer time periods. It might be the case that these more stable aspects of the marriage are better for predicting long-term outcomes such as divorce than can be obtained from behavioral observation.

The content dimensions of negative attributions that have been studied include locus (partner, self, relationship, or outside events), stability (e.g. due to partner's trait, or a state that is situationally determined), globality (how many areas of the marriage are affected), intentionality (negative intent—selfish versus unselfish motivation), controllability, volition, and responsibility (e.g. blameworthiness). For attributions about negative events, all of the studies reviewed supported differences between happily and unhappily married couples on the two dimensions of globality and selfish versus unselfish motivation. It is likely that these attributional phenomena are what make the self-report measurement of any aspects of the quality of the marriage so strongly related. It is also what becomes problematic in attaching any specificity to the measurement of marital satisfaction or marital quality (see Fincham & Bradbury 1987).

Another important cognitive dimension, called "sentiment override," was introduced by Weiss (1980). Weiss suggested that reactions during marital interaction may be determined by a global dimension of affection or disaffection rather than by the immediately preceding valence of the stimulus. Notarius et al (1989) evaluated the validity of this hypothesis in a remarkably creative study in which they employed a sequential stream of behavior and cognitions to operationalize a number of hypotheses linking behavior and cognition. They found that distressed wives were more negative, were more likely to evaluate their partner's neutral and negative messages as negative (suggesting the operation of a negative sentiment override), and, given a negative evaluation of their partner's antecedent message, were more likely to offer a negative reply than were all other spouses. Vanzetti et al (1992) reported that distressed couples have more negative and less positive expectations. They measured "relational efficacy," which is a shared belief that a couple can solve its problems, and found that couples high in relational efficacy choose relationship-enhancing attributions more often than do low-efficacy couples. Low-efficacy marriages showed strong preferences for distress-maintaining attributions.

To assess a larger cognitive unit than attributions, Buehlman et al (1992) coded interviews with couples to assess the shared beliefs and narratives of

couples about the history of their marriage and their philosophy of marriage. A few simple variables (such as the husband's fondness for his wife) were able to predict divorce or marital stability over a three-year period with a great degree of accuracy (100% for the divorcing couples, and 94% overall).

The View from Psychophysiology

A recent and productive approach to studying marriages has been a social psychophysiological procedure. Beginning with Kaplan et al (1964), simultaneous psychophysiological recording was taken of two conversing individuals. The initial finding was that the galvanic skin responses of the two interacting people were correlated only when they disliked each other. Levenson & Gottman (1983) later extended this finding to the construct of physiological linkage, i.e. predictability of one person's physiology (across channels) from the other's (controlling for autocorrelation), and reported greater physiological linkage for unhappily married compared with happily married couples. The linkage variable accounted for over 60% of the variance in marital satisfaction. Levenson & Gottman (1985) later reported that measures of physiological arousal in cardiovascular channels and in skin conductance were able to predict drops in marital satisfaction over three years, controlling for the initial level of marital satisfaction. The pattern was later used by Gottman (1990) to suggest that diffuse physiological arousal, that is, arousal in more than one physiological channel (but not necessarily more than one physiological system, e.g. increased heart rate as well as contractility, or blood velocity) would be associated with decreased information processing capability and a reliance on overlearned patterns of behavior and cognition, particularly those associated with fight or flight. Brown & Smith (1992) studied 45 married couples and found that husbands attempting to persuade their wives showed the greatest increase in systolic blood pressure before and during the discussion. In males, physiological effects were accompanied by increased anger and a hostile and coldly assertive interpersonal style. Although wives showed behavior patterns that were similar to husbands to some degree, they displayed neither elevated systolic blood pressure nor anger. In addition, Fan2) found that both the size of the systolic blood pressure responses of husbands during marital conflict and their recovery times exceeded those of their wives. Malarkey et al (1994) simultaneously studied the secretion of stress-related hormones in five samples of blood taken during the conflict interactions of 90 newlywed couples. Hostile behavior (coded with the MICS) correlated with decreased levels of prolactin and increases in epinephrine, norepinephrine, ACTH, and growth hormone, but not cortisol.

Physiological approaches have added something important theoretically. The general contribution they provide is in directing the organization and search for patterns of behavior and cognition within *balance theories,* in which positivity and negativity are in a state of dynamic balance around a steady state, or set point (for a mathematical model, see Cook et al (1995). In the body, many systems are in a state of dynamic homeostatic balance around a steady state through the action of opponent processes (e.g. the regulation of the heart's rate through the parasympathetic and sympathetic branches of the autonomic nervous system).

Three additional concepts are discussed here. First, negative affect reciprocity may exist as a function of spouses' inability to soothe themselves and each other. Second, this variable of soothing may be the basis for the large relapse effect in marital therapy. In therapy the therapist plays the role of soother instead of the spouses, and when therapy ends the spouses are unable to soothe each other, and old patterns of behavior and cognition reassert themselves. Third, Gottman & Levenson found that the husband's stonewalling (withdrawal as a listener) was related to his physiological arousal (reported in Gottman 1994). In addition, Levenson et al (1995), in a study of older long-term marriages, reported that the husband's but not the wife's physiological arousal was related to his self-report of feeling negative (in a video recall paradigm); they speculated that the husband's withdrawal in the demand-withdraw pattern may be related to his physiological arousal, since it is known that males are more aware of their own physiology than women. Thus, physiological measures suggest a biological basis for the gender effect in the demand-withdraw pattern. This observation is not intended to mean that such a biological basis is unrelated to socialization.

The View from Intervention

A major contribution by psychologists to the study of marriage was the idea of systematically evaluating marital therapy. Unfortunately, as is typical of psychotherapy in general, new therapies emerged in this field largely from speculative writings by therapists instead of from careful empirical work. There have been a number of reviews of the marital therapy literature to date (e.g. Baucom & Hoffman 1986, Bray & Jouriles 1997, Dunn & Schwebel 1995, Hahlweg & Markman 1983, Jacobson & Addis 1993, Pinsof & Wynne 1995, Prince & Jacobson 1997). Their major conclusions are summarized here. Meta-analytic studies of marital therapy outcome appear at first blush to present a more optimistic picture than the one presented here, but meta-analytic studies tend to ask a very global question about "effectiveness" relative to a control group, which obscures issues of which therapies are successful on which outcome measures (e.g. only self-report?), issues of clinical versus sta-

tistical significance, and issues of longitudinal follow-up and relapse. In addition, meta-analyses tend to lump good and bad studies together and examine effect sizes; as is well known, studies with the best control groups necessarily have the smallest effect sizes because they attempt to control everything except what they suppose to be the active ingredients of the intervention.

The most frequently evaluated marital intervention is behavioral. Baucom & Hoffman (1986) noted that the skills usually taught by behavioral marital therapy (BMT) are communication and problem solving, and contingency contracting (based on the quid pro quo assumption). They distinguished these communication skills as problem solving in nature, as opposed to communication skill programs oriented toward the expression of emotions and listening skills. Baucom & Hoffman concluded that (*a*) couples receiving BMT (compared with a wait-list control group) improve significantly in negative communication and self-reports of problems (Jacobson's program was the only one to report improvements in positive communication); (*b*) BMT is superior to nonspecific and attention control groups; and (*c*) there are no major differences in the effectiveness of two components of BMT, nor in their order of administration. However, Jacobson et al (1985b, 1987) reported some evidence that the communication/problem-solving (CO) training was superior to the behavior exchange (contingency contracting) (BE) condition. Upon two-year follow-up, couples in the CO condition were most likely to be happily married and least likely to be separated or divorced. They also noted, however, that while statistically significant changes were obtained by BMT compared with a waiting list (and other) control group, "60–65% of the couples either remained somewhat distressed or failed to change during treatment" (p. 605). In a more recent review, Jacobson & Addis (1993) reached similar conclusions to those of Baucom & Hoffman (1986). They estimated that about 50% of couples cannot be considered successes. They are considerably more pessimistic than Baucom & Hoffman about the long-term effectiveness of BMT. Recently, Snyder et al (1991) reported that the insight-oriented and BMT groups were equivalent at termination. At four-year follow-up, however, they found that the divorce rate was 38% for the BMT group and only 3% for the insight-oriented group. Jacobson (1993), however, challenged the meaning of the Snyder et al results; in a comparison of treatment manuals for the two groups, he concluded that their BMT manual was 10 years out of date and that the insight-oriented manual was far closer to current BMT treatments. Regardless of how one labels the intervention, the Snyder et al four-year follow-up results are quite encouraging.

Summary

First, if one requires replicated effects, treatment gains are not generally maintained over time. Second, it does not seem to matter very much what one does

in treatment. In general, the effect sizes are roughly the same, regardless of the exact nature of the intervention. This latter fact is remarkable when "dismantling" studies done in BMT are considered. Rather than having identified an active ingredient of BMT, they suggest the conclusion that any of the parts equals the whole. Furthermore, it appears possible that all parts may be as effective as contingency contracting, an approach based on an erroneous assumption about what makes marriages work. If this remarkable conclusion were true, almost all marital treatment effects to date would be due to nonspecifics such as trust in the therapist, hope, the existence of a structured program, all of which could be considered to be placebo effects.

SUMMARY: AN INTEGRATIVE MODEL OF HOW MARRIAGES MAY DYSFUNCTION AND FUNCTION

The Stable Phenomena of Marital Process and Outcomes

To date, research on marriage by psychologists has been remarkably productive. We can identify seven consistent patterns across laboratories. These patterns are (*a*) greater negative affect reciprocity in unhappy couples, which may be related to the failure of repair; (*b*) lower ratios of positivity to negativity in unhappy couples and couples headed for divorce (this includes a greater climate of agreement in happily married couples); (*c*) less positive sentiment override in unhappy couples; (*d*) the presence of criticism, defensiveness, contempt, and stonewalling in couples headed for divorce; (*e*) greater evidence of the wife demand–husband withdraw pattern in unhappy couples (though it is probably also there to some extent in happily married couples); (*f*) negative and lasting attributions about the partner and more negative narratives about the marriage and partner in unhappy couples; and (*g*) greater physiological arousal in unhappy couples. What is needed at this juncture is a theoretical model of how these various patterns may fit together. The search for a theory needs to be guided by two questions, the question of what is dysfunctional in marriages (i.e. how the seven negative patterns are related and the ontogeny of the seven negative patterns in ailing marriages), and the question of what is functional, that is, what couples whose marriages are doing well are doing (thinking, feeling, etc) differently. Both questions are necessary—identifying negative dysfunctional patterns does not imply that one has also simultaneously identified positive functional patterns.

What Is Dysfunctional in Unhappy, Unstable Marriages?

Gottman (1994) proposed a theory of dysfunction based on longitudinal research and the correlates of marital satisfaction. Unstable marriages are likely

to be unable to work out over time one of three stable adaptations Gottman discovered: volatile, validating, conflict avoiding. In their attempts to accomplish a stable adaptation, some couples fall into a pattern that does not maintain the balance of positivity to negativity at a high level. Spouses tend to formulate their complaints as criticisms and contempt; they tend to respond defensively and eventually withdraw from each other. At the core of this formulation is a balance theory, an ecology of marital behaviors in which a ratio of positivity to negativity that is highly tilted toward positivity needs to be maintained. This ratio is suggested as the quantity that needs to be regulated at a high level, approximately 5.0. Related to marital interaction is the subtext of how the interaction is perceived by each partner. If the ratio of 5.0 is significantly violated, the perception of well-being is replaced by one of distress, which is some combination of hurt and anger (fight, or the "righteous indignation" perception) and/or hurt and perceived attack (flight, or the "innocent victim" perception). The length of time in a state of distress, in turn, determines feeling flooded by one's partner's negative affect, with accompanying diffuse physiological arousal (DPA), negative subjective affective states, and negative attributions of the partner. Flooding begins the Distance and Isolation Cascade, which entails perceiving one's marital problems as severe, as better worked out alone rather than with the spouse, arranging one's lives so that they are more in parallel than they used to be, and loneliness within the marriage. Eventually, even one's perception of the entire relationship is affected, and the couple's narratives change. In the oral history interview, people (particularly husbands) express disappointment with the marriage, declare little fondness for the partner, and present themselves as separate entities who do not see the past the same way or share a common philosophy of marriage. They also tend to see their lives as chaotic and out of control, and they see all the marital conflict as pointless and empty. This grim formulation is balanced by the reverse results that couples whose marriages are stable use positive affect and persuasion in very different ways—ways that buffer them from the physiological stresses of DPA and from the perception of their partner's negative emotions as horrible, disgusting, terrifying, overwhelming, disorganizing, and impossible to predict.

An Intergrative Account: the Bank Account Model

What is the etiology of these dysfunctional patterns, which are predictive of unhappiness and divorce? This review introduces a new theory, called the Bank Account Model (BAM). The first premise of the BAM is that the answer to the question of the ontogeny of the seven negative patterns in ailing marriages lies in asserting that psychologists have been looking in the wrong place. They have studied almost exclusively the resolution of conflict, and BAM suggests that the seven dysfunctional patterns reviewed here reflect the endpoint of the

failure of three related processes. The first process is the couple's ratio of fairly low-level positivity to negativity in nonconflict interaction. Nonconflict interaction consists primarily of the mundane, everyday interactions of married life, each of which holds the possibility of what might be called either "turning toward" or "turning away" from one's partner. An example follows: One spouse is in the bathroom in the morning, in a hurry getting ready for the day, when the partner comes into the bathroom and says, "I just had a disturbing dream." An example of turning away would be, "I don't have time for this right now," while an example of turning toward would be, "I'm in a real hurry, but tell me about your dream." A greater balance of turning away compared with turning toward implies that there will be many moments of what could be called "unrequited interest and excitement," in which one person's interest and excitement is not responded to by the partner, and many moments of "unrequited irritability," in which one person's low-intensity anger is not responded to by the partner. This lack of responsiveness leads to the presence of the first of the Four Horsemen, criticism. Criticism leads to the other horsemen.

The theory proposes that a greater proportion of turning toward compared with turning away leads to positive sentiment override (Weiss 1980), whereas a greater proportion of turning away compared with turning toward leads to negative sentiment override. Physiological soothing of one's partner using a variety of positive affects (e.g. interest, affection, validation, empathy, humor) during everyday stress reduction interactions (typically events-of-the-day discussions and errand talk) is central to contributing to positive sentiment override, and this is accomplished through the simple mechanism of escape conditioning. The second process is the amount of cognitive room that couples allocate for the relationship and for their spouse's world. We call this the "love map." The husband's love map is particularly predictive of the longitudinal course of marriages. This process has to do with knowing one's partner's world and continually updating that knowledge. The third process, which is another contributor to positive sentiment override is the existence of what we call the Fondness and Admiration System (tapped by the oral history interview). Admiration is the antidote for contempt. Couples who are on a stable and happy trajectory express spontaneous admiration and affection for their partner much more than couples on the trajectory toward divorce. The Fondness and Admiration System affects and is affected by both cognition and behavior.

The existence of either positive or negative sentiment override determines the success or failure of repair processes (Gianino & Tronick 1988 discussed these in mother-infant interaction) in conflict interaction. The success of repair minimizes negative affect reciprocity. Positive sentiment override, however, also leads to the presence of three other processes (in addition to successful re-

pair) during conflict interaction. The first has been called "editing." Part of breaking the chain of negative-affect reciprocity, editing is assessed as a lowered conditional probability of becoming a negative-affect speaker after one has been a negative-affect listener. There is a fair amount of evidence that happily married couples are more likely to edit than unhappily married couples (Gottman 1979, Notarius et al 1989). Editing is responsible for decreasing the probability of what the Patterson group has called "negative startup," which means moving from one's partner's neutral affect to one's own negative affect. It is related to the beginning of the demand-withdraw pattern, and it is more characteristic of wives than husbands (Gottman 1994, 1996). The second process is one we call "respectful influence." Respectful influence involves using positive affect in the service of the de-escalation of conflict while attempting to influence one's partner without using the Four Horsemen, and it also involves accepting influence from one's partner. Rushe (1996), in a detailed analysis of persuasion and influence tactics during marital conflict resolution, found that assertive means of persuasion during conflict resolution was the one discriminator between happily married and distressed nonviolent couples. Coan et al (1997) described rejecting influence as characteristic of violent couples. The third process is positive affect, which this theory hypothesizes is used carefully to avoid one's partner's defensiveness and to reduce physiological arousal. Our laboratory has evidence that among newlyweds the Time-1 positive affects of interest, affection, humor, and validation predict and discriminate whether couples will eventually divorce, be stable and happily married, or stable and unhappily married (in a five-year follow-up). These processes affect the couple's narratives, the stories they tell themselves and each other about the marriage and the partner. The current evidence is that these narratives are quite powerful predictors of marital trajectory (Buehlman et al 1992). Narratives may guide cognition and attributions even when the couple is not together.

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