

TRANSTHEORETICAL MODEL OF CHANGE WITH COUPLES

A Dissertation

by

WILLIAM JOEL SCHNEIDER

Submitted to the Office of Graduate Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 2003

Major Subject: Psychology

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## ABSTRACT

Transtheoretical Model of Change with Couples. (August 2003)

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The Transtheoretical Model of Change is intended to be a general model of change that can be applied to many populations and domains of change. However, most of the studies that have investigated this model have focused on addiction-related topics or on individual psychotherapy. The current study explored whether this model's predictions applied to couples and their readiness to change their relationship. Data from two samples were collected. The first sample consisted of 65 volunteer couples recruited from the community. The second sample consisted of 55 couples that participated in a 9-week relationship enhancement seminar. Factor analyses of questionnaires designed to measure the stages of change and processes of change predicted by the Transtheoretical Model of Change did not produce the hypothesized factors. In general, use of change processes did not predict change in relationship satisfaction. However, there was some evidence that wives' use of change processes had more impact on relationship satisfaction than did husbands' use of change processes. Couples at higher stages of change tended to experience greater improvements in marital satisfaction than did couples at lower stages of change. Couples with partners at similar levels of readiness to change did not experience greater improvements in marital satisfaction than did couples at dissimilar levels of readiness to change. In general, couples using the processes of

change that matched their stage of change did not experience greater changes in marital satisfaction. However, as predicted by the Transtheoretical Model of Change, use of consciousness raising processes was less helpful for couples at higher stages of change than for couples at lower stages of change. Reasons for the failure to support many of the claims of the Transtheoretical Model of Change are explored and suggestions for future research are provided.

## DEDICATION

This dissertation is dedicated to my wife, Renée M. Tobin. I am ready to change anything but her.

## ACKNOWLEDGMENTS

In my attempts to see further by standing on the shoulders of scientific giants, I must acknowledge that many times I was carried along and hoisted to those heights by fellow climbers.

My chair and advisor, Douglas Snyder, inspired the original idea for this dissertation and has been unfailingly enthusiastic about my efforts. His astute guidance and support made this dissertation possible.

Mary Oxford and I spent hundreds of hours together preparing for and running the relationship enhancement seminar that is described in this dissertation. An unlikely duo, we were able to synergistically augment our strengths and cover each other's weaknesses. I found myself constantly amazed by her wisdom, wit, and natural talent for psychotherapy. I am indebted to her for many things, including the gentle tenacity with which she was able to encourage reluctant couples to complete their questionnaires after the seminar ended.

"A gentleman and a scholar" is not a cliché when applied to Bill Graziano, my "advisor-in-law." I will not forget his gracious support over these past years and his wise and timely counsel.

David and Cathy Tobin went way beyond the call of duty in their efforts to recruit participants while we lived in New York. I could not ask for better in-laws. Fortunately, I did not have to.

I am immensely grateful for the direct and indirect support that my parents, Max and Marilyn Schneider, provided during my graduate training and during the preparation

of this dissertation. However, the gift I value most from them was their example of a deep, abiding curiosity about every conceivable topic. Their loving care sparked in me the desire to love what they love, including the love of learning.

I cannot believe how extraordinarily fortunate I am to have married Renée Tobin. Some people can thank their spouse for loving support, constant devotion, encouragement, and inspiration during the struggle to finish a doctoral degree. It is no small thing to be able to count myself as a member of that lucky group. I, however, have received so much more. Having completed her doctorate in school psychology a year before me, Renée was also able to share with me her razor-sharp intelligence, her uncanny and uncommonly good sense, her practical guidance, her deep insight, and her genuine, experience-laden empathy for the difficulties of completing a dissertation. Of all my fellow climbers, she was most responsible for saving me from nasty falls, encouraging me when the climb seemed impossible, and showing me where to put my hands and feet when I did not know the way.

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## CHAPTER I

### INTRODUCTION

The arrival of the Transtheoretical Model of Change has been credited with creating a new *Weltanschauung* (Davidson, 1992) if not a Kuhnian paradigm shift (Orford, 1992) in addiction research and treatment. However, the Transtheoretical Model was never intended to be relegated only to explaining addiction-related phenomena, but was to apply to all types of self-initiated change (Prochaska, 1984). Although most of the empirical validation studies related to the Transtheoretical Model of Change have been conducted with people attempting to stop smoking, the Transtheoretical Model of Change has been applied to understanding alcohol and substance abuse, eating disorders, spousal abuse, cancer prevention, exercise, public health promotion, and more general psychological problems (Prochaska & Prochaska, 1999).

Although Prochaska and DiClemente (1984) considered the Transtheoretical Model of Change to be relevant to couple therapy, couple therapy researchers have paid little attention. Even Prochaska's own couple therapy research makes only passing reference to the Transtheoretical Model of Change (Hefner & Prochaska, 1984). However, given its promise, expanding influence, and staying power in other fields, couple therapy researchers would do well to investigate its claims.

Prochaska and DiClemente's ideas crystallized after their first major study of self-changing smokers (DiClemente & Prochaska, 1982) revealed that their processes of

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This dissertation follows the style and format of *Journal of Personality and Social Psychology*.

change were identical to those used in the major therapeutic systems (Prochaska, 1979). With one exception, the model has undergone little modification since then. The following points summarize the basic message of the Transtheoretical Model of Change:

- No single theory can explain all aspects of change. A comprehensive model of change is likely to come only from an integration of major theories.
- There are many theoretical models of the *mechanisms* of change but there are relatively few *processes* of change.
- Processes of change transcend theoretical models.
- People use the same set of processes whether or not they are in therapy.
- People tend to use different processes of change depending on their readiness for change.
- Readiness for change fits a stage model rather than a continuum.
- Interventions are differentially effective at promoting change at different stages.

### *Processes of Change*

Although there have always been theoretically integrative thinkers in clinical psychology (e.g., Dollard & Miller, 1950; French, 1933; Rosenzweig, 1936; Sears, 1943, 1992), competition has been the modal form of interaction between theoretical systems. The field's "ideological cold war" (Norcross & Newman, 1992) began to thaw at an accelerated pace in the late 1970's and early 1980's (Goldfried & Newman, 1992). Prochaska and DiClemente (1992b) and many others acknowledge the influence of the call for integration by Marvin Goldfried. In distinguishing among the therapeutic intervention techniques, processes of change, and theoretical mechanisms of change,

Goldfried (1980) argued that the most fruitful attempts at theoretical integration are likely to occur at the level of processes of change. Processes of change are a middle level abstraction (between technique and theory) representing the kinds of activities that a person initiates or experiences that have a causal role in changing a problematic behavior (Prochaska & DiClemente, 1992c).

Prochaska (1979), with the help of his students, attempted to identify and categorize the processes of change that have been used by 18 major theoretical systems of psychotherapy. The second edition expanded its scope to include 24 major systems (Prochaska, 1984). In a three-dimensional classification scheme, Prochaska identified 6 basic processes of change. Consciousness raising, catharsis, choosing, and cognitive restructuring are verbal processes whereas conditional stimuli and contingency management are behavioral processes. Each process of change can occur at the experiential and the environmental levels, making 12 processes. (See Table 1.) The helping relationship was added later to the list of change processes.

After administering a measure of these processes of change to a large number of self-changing smokers, a principle components analysis revealed 10 statistically independent processes. The consciousness raising processes of feedback and education loaded on a single factor. Self-reevaluation and corrective emotional experiences also loaded on a single factor, suggesting that the kind of self-reevaluation that results in change rarely occurs without a significant affective component. Self and social management also loaded on a single factor. The results were cross-validated on a

Table 1

*Change Processes of Transtheoretical Therapy*

Therapies	Basic Process	Level	
		Experiential	Environmental
Awareness	Consciousness Raising	Feedback	Education
	Catharsis	Corrective Emotional Experiences	Dramatic Relief
	Choosing	Self-liberation	Social-liberation
	Reevaluation	Self-reevaluation	Social-reevaluation
Action	Conditional Stimuli	Counter-conditioning	Stimulus Control
	Contingency Management	Self-management	Social-management
	Helping Relationship		Helping Relationship



separate sample of self-changers with the same 10 factors emerging. The 10 factors are briefly defined below:

1. Consciousness raising – Raising one’s awareness about the person’s actions (feedback) or about the person’s environment (education).
2. Self-reevaluation – Affectively and cognitively reappraising the impact of one’s problems on the self.
3. Social reevaluation – Reappraising the impact of one’s problems on others.
4. Self-liberation – Increasing one’s ability to choose between alternatives.
5. Social liberation – Changing the environment so that more alternatives are open.
6. Counter-conditioning – Changing one’s responses to conditional stimuli.
7. Stimulus control – Restructuring one’s environment so that the probability of a particular conditional stimulus occurring is reduced.
8. Contingency management – Changing the contingencies that control the problematic behavior.
9. Dramatic relief – Being motivated to change after witnessing an emotionally charged event.
10. Helping relationship – Being in a helping relationship provokes changes that are independent of the other processes. The mechanism by which this occurs varies according to different theories. The helping relationship as a process of change is distinct from the helping relationship as a precondition of change.

In a critique of the five-factor model of personality, Westen (1995) questioned the validity of favoring the aggregated judgments of thousands of college sophomores

over the life's works of brilliant personality theorists. Likewise, it is uncertain why Prochaska and DiClemente (1984) reify these 10 principle components when there are clear theoretical and pragmatic reasons for distinguishing between processes such as feedback and education. Exploratory factor analysis is a powerful tool but when unchecked by theory often will lead to silly conclusions. For whatever reason, Prochaska and DiClemente have decided to use the 10 processes of change as the units of analysis for most of the Transtheoretical Model of Change validation studies.

### *Stages of Change*

If Prochaska and DiClemente had only delineated their 10 transtheoretical processes of change, it is likely that their names would have remained relatively unknown. The aspect of the Transtheoretical Model of Change that has garnered the most attention, interest, and scrutiny has been the stages of change. Some researchers talk about the stages of change as if they *are* the entire Transtheoretical Model of Change (e.g., Bandura, 1997; Farkas et al, 1996). Prochaska and Velicer (1996) have taken pains to remind their critics that the stages of change are simply one component of the Transtheoretical Model of Change and are not sufficient to explain change on their own. The stages of change do not cause change but rather describe processes associated with it.

Retrospective studies of people who successfully stopped smoking suggested that they could distinguish among four distinct stages of change: contemplation, decision (later called preparation), action, and maintenance (DiClemente & Prochaska, 1982).

The period before contemplating change was termed precontemplation. Each stage was marked by a different set of activities.

At the precontemplation stage, people are either unaware of the problem or are not seriously thinking about changing. Contemplation occurs when a person thinks about changing but is not committed to action. In the contemplation stage, negative consequences of the problematic behavior and the cost of changing may not “outweigh” the perceived benefits of change. Contemplators may want to change but are unsure of their ability to do so. If people’s self efficacy rises or the balance of costs and benefits of changing tips in the right direction, they may commit themselves to change but may delay their action until adequate preparations are made and they solidify their intentions to change. The preparation stage may last for a few weeks or may last a few hours. In the action stage, people put their plans into effect. They spend less time deliberating about the pros and cons of changing and focus on their goals. After change has occurred, people enter a new stage called maintenance in which they consolidate the gains they have made. For some problems this stage lasts only several months, for others it can last indefinitely. When no further effort is needed to maintain the change, people are said to have terminated the change process.

Successful change usually involves passing through each stage in the proper sequence. Skipping stages can occur but is likely to result in relapse. For example, moving directly from precontemplation to action is likely to result in a brief, poorly planned change attempt. Such people may find themselves with insufficient motivation

to persist in the face of difficulty. They probably have not yet made a “solid, realistic commitment to change” (DiClemente, 1991, p. 197).

It should be noted that the stages of change are not irreversible like Piagetian stages (Bandura, 1997). People may go back and forth between precontemplation and contemplation. They may relapse from maintenance but spend no time in precontemplation. Successful self-changers are likely to cycle through the stages several times before terminating (Prochaska & Prochaska, 1999).

The idea of intentional change occurring in stages is not new. In discussing personal and group change in the context of his field theory, Lewin (1947) described change as a three-stage process of “unfreezing” existing habits and attitudes, changing behavior, and “refreezing” the new attitudes and behaviors in place. Lewin’s “unfreezing” corresponds to the movement from precontemplation to contemplation. His middle stage corresponds to the action stage. “Refreezing” roughly corresponds to maintenance. To my knowledge, Prochaska, DiClemente, and colleagues have never acknowledged Lewin’s elegant model as a precursor to the Transtheoretical Model of Change’s stages of change (Many times I have thought that I had a good idea only to find that Lewin had proposed a much more sophisticated version of it 60 years before me!). They trace their stages of change ideas to Horn and Waingrow (1966), Cashdan (1973), and Egan (1975).

#### *Integration of the Stages and Processes of Change*

The most useful aspect of the Transtheoretical Model of Change is that it predicts which processes of change are likely to be effective at different stages. The relationships

between the stages have a straightforward logical relationship with the processes of change. The self-changers and people in therapy are likely to engage in different processes of change depending on their stage of change. The results have been highly consistent across samples (Prochaska & Prochaska, 1999). Interventions that mismatch processes and stages of change are likely to be ineffective.

*Moving from precontemplation to contemplation.* The precontemplator does not wish to change or is unaware of the problem. Inducing a precontemplator to engage in contingency management, counterconditioning, and stimulus control is likely to fail. A precontemplator who is forced to attend therapy may go through the motions but is likely to return to problematic behavior as soon as freedom is obtained. These are action-oriented techniques that tend to work much better when the participant is motivated to change.

Precontemplators are most likely to be influenced by the process of consciousness raising (Prochaska & DiClemente, 1992c). The precontemplator who is unaware of the problem needs to be educated about the problem (e.g., an uninformed battered wife needs to know that there are resources that can help her leave safely) or needs to be given feedback about his or her role in the problem (e.g., a husband who wished his dependent wife to take on more responsibilities may benefit from feedback from a therapist about his paternalistic demeanor's effect on his wife). A precontemplator who is aware of the problem but does not want to change may need to see the risks of not changing and the benefits of changing in a clearer light. Reviewing their own list of pros and cons of persisting with the problem behavior may tip the

balance just enough to move them into the contemplation stage. In general, precontemplators are less likely to respond to confrontational forms of consciousness raising.

Former precontemplators often talk about the power of dramatic relief (Prochaska & Prochaska, 1999). For example, one husband who had been discovered having an affair was profoundly moved by the depth of his wife's emotional suffering. Recognizing that her distress signaled a deep attachment to him awakened his own dormant feelings of tenderness for his wife that had long been absent from their devitalized marriage.

In the same situation as the example above, a different precontemplator may have been provoked to consider changing because he could empathize with his wife and did not like the impact he was having on her. Social reevaluation (reappraising one's impact on others) is often the process that moves people into contemplation. Another example of social reevaluation is a mother who observed her young teenage daughter cling desperately to her verbally abusive boyfriend and began to consider changing her submissive stance toward her domineering husband.

*Moving from contemplation to preparation.* People in the contemplation stage are also likely to be influenced by consciousness raising techniques. They are more likely to respond to more confrontational methods of consciousness raising without becoming as defensive as precontemplators (Prochaska & DiClemente, 1992c). For example, a man with a high opinion of his listening skills was moved to contemplation about the need to improve his relationship with his daughter when he noticed that she consistently sought

her mother's listening ear when she wanted to discuss her problems. When he asked his wife why she thought their daughter never came to him, she said that his listening "skills" were so formal that they impeded intimacy. She told him that he seemed to approach his role as a father as if it were a solemn duty but never seem to enjoy his contact with the children. Although he still was uncertain how to change his behavior, this feedback prompted him to commit to learning to relate to his children with greater spontaneity and affection.

Contemplators also make considerable use of self-reevaluation. In this process they examine their problematic behavior and compare it to their self-concept and values. Sometimes competing values are placed beside each other and examined so that the person can decide which value is more central. In self-reevaluation, contemplators examine the effects of their problematic behaviors on their long-term goals.

People stalled in the contemplation stage are likely to remain there if they have low self-efficacy with respect to their ability to change the problematic behavior. There is no reason to commit to changing a problem that one believes one cannot overcome. The change process most likely to help stalled contemplators is that of self-liberation (Prochaska & DiClemente, 1992c). Self-liberation involves all processes that increase one's ability to choose alternative methods of coping. Self-improvement, networking, planning, encouraging oneself, and the use of willpower are common methods of self-liberation. For example, a woman who worried about the effect on her marriage of working the graveyard shift at a food processing plant began to buy books about breeding dogs. As she became more interested, she made it a hobby. Eventually, her

confidence in her abilities allowed her to make the decision to start her own business and thus work more flexible hours and spend more time with her husband.

*Moving from preparation to action.* In the preparation stage, people continue to use self-liberation and start to decrease their use of consciousness raising and self-reevaluation. Although a helping relationship can be important at any stage, it becomes particularly important in the preparation stage as people solidify their commitment and prepare to take action. It is at the preparation stage that supportive relationships are most helpful in keeping people focused on their goal and providing encouragement and resources. During the preparation stage, many people begin to take small steps toward more action-oriented processes. These steps can be understood as testing whether change is truly within their grasp.

Many people can declare their intention to change, but take few steps to realize change. The guilt-ridden husband may promise himself that he will end his clandestine affair but delays until he is discovered. The alcoholic wife may promise sincerely that she will control her drinking but soon relapses. The violent man may, with real tears, vow to change but bruises his wife in their very next argument. The critical woman may resolve to be more accepting but flies off the handle so often that her husband fails to notice any difference. Gollwitzer (1999) cites research that these kinds of commitments or “goal intentions” are poor predictors of outcome unless accompanied by “implementation intentions” which specify when, where, and how the goal intention will be carried out. Goal intentions have the structure “I intend to reach X!” Implementation intentions take the form “When situation X arises, I will perform response Y!” One of



the primary techniques of “solution-focused” therapies (de Shazer, 1985) is that after the desired change has been verbalized, the therapist stimulates the client to generate a verbal or visual fantasy of how he or she will react to various situations after the solution has already been implemented. Solution-focused therapists do not use the terms but they ensure that no goal intention is unaccompanied by implementation intentions. In terms of the Transtheoretical Model of Change, the therapist stimulates the client’s use of self-liberation so that moving to the action stage is more likely to meet with success.

*Moving from action to maintenance.* In the action phase, people take direct action to correct their problematic behavior. Action-based processes tend to produce rapid changes if applied properly. However, their effects are short-lived unless they are applied consistently over a long period of time, often as long as 6 months (Prochaska & Prochaska, 1999). Sometimes the most important factor in moving through action and into maintenance is to continue to apply the change processes for some time after the problematic behavior has been eliminated or reduced to a more acceptable level. This period allows new habits to replace the problematic behavior and thus prevents relapses.

Counter conditioning is a common process of stage used at this stage. For example, a man battling impotence caused by performance anxiety began to avoid his wife’s caresses and hugs because they served as a discriminative stimulus for a lovemaking attempt. After several consciousness raising discussions, they decided to use sensate focus exercises to eliminate the association of intimate touch and performance anxiety.

Contingency management is changing the contingencies that control the problematic behavior. For example, a woman's abuse of alcohol was partly maintained by her husband cleaning her up after she passed out and calling in sick for her at work. When they agreed that he would no longer help her in this way, she missed several days of work, was frequently late, and eventually was fired. This incident precipitated the woman to prepare to take more direct action to control her drinking.

Stimulus control is the attempt to restructure one's environment to reduce contact with stimuli that tend to provoke the problematic behavior. For example, after much heartache, a couple decided to stay together after the husband admitted to having an affair with a co-worker. In order to reduce temptation and provide the wife with something of a sense of security, he quit his job and sought employment elsewhere.

*Moving from maintenance to termination.* Some problems require lifelong maintenance (e.g., bipolar disorder). Others require no effortful maintenance after they have been eliminated. The most effective change processes at the maintenance stage are the same processes that were in effect in the action stage but at a lower dose. Continuing to apply action-based processes seems to be most effective when such efforts are seen as something to be proud of by oneself and by at least one significant person in one's support network (Prochaska & DiClemente, 1992c).

*Process x stage mismatches.* Some processes used during some stages are associated with poorer outcome in the Transtheoretical Model of Change. Action-based processes are less likely to be helpful for precontemplators than for people in later stages. Consciousness raising and self-reevaluation processes are helpful until the action

stage, at which point they become predictive of relapse if relied upon exclusively (Prochaska & Prochaska, 1999).

### *Levels of Change*

The Transtheoretical Model of Change recognizes a hierarchy of 5 interrelated domains in which psychological problems can occur. The problems of a hypothetical couple are presented at each level to illustrate the rising level of complexity.

The most visible level is that of symptoms and situational problems. Symptoms and situational problems are usually the most responsive to change processes. Unless contraindicated by clinical judgment, the symptom and situational level is the preferred starting point in the transtheoretical approach. At this level, a couple may present for therapy complaining that they argue frequently, he feels depressed and irritable, and she reports that he is withdrawn and refuses to talk to her. Their most recent crisis occurred when she taped over an old videotape without consulting him. He flew into a rage and she responded in kind. The argument escalated until she left the room, fearing that his rage might lead to physical violence. Interventions at this level might include time-outs (contingency management), date nights (counter conditioning), and communication skills training (education).

The second level is that of maladaptive cognitions. This is the preferred option when the change attempts at the first level are unsuccessful because there is ample evidence that changing maladaptive cognitions is possible in relatively short periods of time and provide considerable relief of psychological suffering. Furthermore, reducing maladaptive cognitions allows interventions at higher levels of change to be more

productive. At this level, the couple introduced in the preceding paragraph may attribute each positive action (e.g., greeting her with a smile when she arrived home) initiated by the other as situationally determined and each negative action (e.g., taping over an 18 year-old videotape without consulting him) as a manifestation of enduring personality flaws. Interventions at this level might include identifying automatic thoughts (education) and countering cognitive distortions (self-reevaluation).

The third level of change is that of current interpersonal conflicts. Couple therapists are likely to intervene at this level first if the couple is physically violent. Our hypothetical couple's most recent conflict occurred because she used an old videotape to record a television miniseries she was excited about. The penciled title on the tape had faded to near invisibility but read "Peter Pan, 1982." He said that she never thought about him but took care only of herself. She said that he was overreacting to a stupid Disney movie they could rent any time. Interventions at this level might include time-outs (contingency management) or problem-solving skills (education).

The fourth level of change is that of family systems conflicts. At this level, the couple may be in conflict because he resents her presenting him with an ultimatum five years ago to choose between getting a divorce and sending his defiant, drug abusing teenage son from his first marriage back to his first wife. The son held his stepmother responsible for seducing his father away from his mother. His mother's tacit approval of his antics at his father's house facilitated the escalating conflict. The day the husband sent his son away, they exchanged bitter words and his son shoved him against a wall. They have not spoken since. Interventions at this level might include pointing out the

processes in the family (feedback) and presenting alternative responses to the battles they have locked themselves into (self-liberation).

The fifth level of change is intrapersonal conflicts. This level usually requires more time and is least amenable to change but is sometimes the key to resolving extremely persistent and resistant problems. The complexity of problems and change processes at this level has made systematic research on these topics nearly impossible. At this level, the couple's conflicts may represent inner conflicts being played out in repetitive self-defeating cycles. As a teenager, the husband's own father had left his mother for much younger woman. While his father led a playboy lifestyle, he reluctantly became the "man of the house." Soon after sending his son back to his first wife, he sank into a deep depression. Months later, while cleaning out the attic, he found an old videotape but couldn't read the title. He put it in the VCR and watched his son's star performance in the elementary school's production of "Peter Pan" that the husband had filmed almost 20 years ago. He wept through the entire performance. After his wife taped over the performance several days later he railed against her viciously and harbored a smouldering grudge about the incident. However he did not correct her misinterpretation that she had taped over a copy of Disney's *Peter Pan* instead of his son's childhood performance. Interventions at this level might include Consciousness Raising techniques exploring the relationship between his ambivalence about adult responsibilities, his reluctance to acknowledge and experience his deep sense of shame related to the lost connection with his own father and now with his own son, his inability to form healthy attachments to his first and now second wife, and his failure to

adequately mourn the loss of his childhood innocence and face with good faith the finality of death.

Prochaska and DiClemente (1992c) propose three strategies for choosing the level of change at which to intervene. The shifting-levels strategy consists of starting at the lowest level (symptoms) and progressing to a higher level only when change is impeded. The key-level strategy consists of identifying the level at which the problem is best addressed and mostly staying within that level. The maximum-impact strategy consists of intervening simultaneously at multiple levels.

Prochaska and DiClemente (1992c) suggest that different therapy systems are likely to work better at different levels and stages (See Figure 1). The essential ingredients from Roger's (1951) client-centered therapy are considered preconditions for success at all levels.

Levels	Precontemplation	Contemplation	Preparation	Action	Maintenance
Symptoms/ Situational	Psychoeducational Interventions			Behavior therapy	
Maladaptive cognitions	Adlerian therapy	Cognitive therapy Rational-emotive therapy			
Interpersonal conflicts	Sullivanian therapy	Couples communication Transactional analysis		Interpersonal Therapy	
Family systems	Strategic therapy	Bowenian therapy	Solution - focused	Structural therapy	
Intrapersonal conflicts	Psychoanalytic therapies	Existential therapy	Gestalt therapy	Brief-Psychodynamic therapy	

*Figure 1.* Integration of major therapy systems within the Transtheoretical framework.

## CHAPTER II

### LITERATURE REVIEW

#### *Measures of the Transtheoretical Model of Change Constructs*

Self-report questionnaires have been developed for all of the Transtheoretical Model of Change constructs. Most have been developed by Prochaska, DiClemente, and colleagues but many independent research teams have made substantial contributions.

*Processes of change.* The Process of Change Questionnaire has had its structure examined many times and the results are consistent across samples (Prochaska, Velicer, DiClemente, & Fava, 1988). Exploratory and confirmatory factor analysis supported 10 processes of change with two correlated second-order factors representing experiential and behavioral processes respectively (Prochaska, Velicer, DiClemente, & Fava, 1988; O'Connor, Carbonari, & DiClemente, 1996). A promising measure specifically adapted to pregnant smokers has been developed by an independent research team (Breithaupt, Plotnikoff, Edwards, & Hotz, 2000).

*Decisional balance.* A decisional balance measure of the pros and cons of changing problematic behaviors has been developed and cross-validated for 12 different problem behaviors with consistent results across behaviors (Prochaska et al., 1994).

*Levels of change.* The levels of change have been operationalized using the Level of Attribution and Change Questionnaire (LAC). Preliminary results suggest that the LAC has good psychometric properties (Norcross, Prochaska, Guadagnoli, & DiClemente, 1984; Norcross, Prochaska, & Hambrecht, 1985).



*Stages of change.* The stages of change measures have not fared as well as the other Transtheoretical Model of Change constructs. First, the most common method that is used to determine the stage of change is to use an algorithm based on the answers to a few interview questions (Prochaska & DiClemente, 1983). If a person has no intention of changing the problematic behavior, the person is assigned to the precontemplation stage. If the person intends to change within the next 6 months, the person is in the contemplation stage. If the person is intending to change within the next 6 weeks, they are in the preparation stage. If the person has changed within the last 6 months, they are in the action stage. If they have not had a relapse within the last 6 months they are in the maintenance stage. These staging algorithms have been criticized because of the arbitrary nature of the intervals and the impossibility of examining them psychometrically (Bandura, 1997; Carey, Purnine, Maisto, & Carey, 1999). There does seem to be support for the intervals in the smoking algorithms but little research has been focused on the staging algorithms of other behaviors (Horwath, 1999).

The stages of change construct has been operationalized using three major traditional self-report questionnaires. The University of Rhode Island Change Assessment Scale (URICA) was developed with psychotherapy patients in a general clinical setting (McConaughy, Prochaska, & Velicer, 1983). It is non-specific, referring to “the problem” instead of a particular problematic behavior. It was intended to capture all 5 stages of change but only 4 factors emerged, with the preparation items loading on the contemplation and action factors. Again, based on the aggregated judgments of laypersons, the Prochaska and DiClemente research team decided to abandon the

theoretical construct of the preparation stage and decided to take the factor analysis at face value. For the next 7 years they spoke of only 4 stages. Later, they reintroduced the preparation stage, admitting that they had misinterpreted their factor analytic data and ignored the evidence for the preparation stage in their cluster analysis data (Prochaska & DiClemente, 1992a).

The validity of the URICA was tested in two major studies with similar samples of psychotherapy outpatients (McConaughy et al., 1983; McConaughy, DiClemente, Prochaska, & Velicer, 1989). The 4-factor structure replicated across studies. The same structure was found in a sample of outpatients in treatment for alcoholism (DiClemente & Hughes, 1990) but failed to replicate with 3 samples of individuals with substance abuse problems (Belding, Iguchi, & Lamb, 1996).

The most important finding to emerge from the URICA research is that the adjacent scales correlated more strongly than nonadjacent scales, consistent with an invariant stage theory (people passing through stages in same order) as Prochaska and DiClemente (1983) predicted. Sutton (1996) questioned this interpretation by citing a number of other studies showing that the non-adjacent stages are almost as correlated as the adjacent stages. Furthermore Sutton (1996) noted that many people scored above average on two or more scales, arguing against a discrete stage model.

Cluster analysis with the URICA has been disappointing because there are few replications across samples (Carey et al., 1999). In their drug-abusing sample, Belding et al. (1996) found little convergence between the stage algorithm and the URICA, suggesting that they measured different aspects of the readiness of change. This same

research team found little predictive validity for any of URICA's 4 scales except for contemplation, which predicted urine analysis results 12 weeks after assessment (Belding, Iguchi, & Lamb, 1997).

URICA has recently been adapted to assess the stages of change in batterers' willingness to end their use of violence (Levesque, Gelles, & Velicer, 2000). The measure is called URICA-Domestic Violence or URICA-DV. The cluster analysis findings are similar to those found by McConaughy et al. (1989).

Another measure of the stages of change construct is called the Readiness to Change Questionnaire (RCQ; Budd & Rollnick, 1996). When the RCQ was first presented (Rollnick, Heather, Gold, & Hall, 1992), it was offered as supporting Transtheoretical Model of Change predictions. However, because many people scored higher than average on more than one stage, they noted difficulty in classifying people according to stage. Responding to criticisms by Sutton (1996), Budd and Rollnick (1996) reanalyzed their data with improved statistical procedures. Their data seemed to fit a single continuum model rather than stage model.

The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES; Miller & Tonigan, 1996) was adapted from the URICA for problem drinking. Instead of Transtheoretical Model of Change's 5 stages or the URICA's 4 stages, factor analysis yielded 3 factors. Precontemplation (reversed scored) and preparation items were combined to form a scale called Recognition. A factor resembling contemplation was called Ambivalence. Action and maintenance score loaded on a factor called Taking Steps. No evidence was found for a stage-like factor structure. Other than a single study

finding that Recognition predicted AA attendance one year after assessment (Isenhart, 1997), research with SOCRATES has been either mixed or disappointing (Carey et al., 1999).

It is noteworthy that none of the stages of change measures had psychometric properties consistent with Transtheoretical Model of Change stages of change. Converging evidence suggests that a single continuum of readiness to change may explain the structure of these questionnaires rather than discrete stages of change (Sutton, 1996, Budd & Rollnick, 1996, Carey et al., 1999). On the other hand, the structure of the data may be more complex than previously thought. Cluster analytic techniques have yielded interesting findings in many studies but have yet to converge on a common set of clusters across samples (Carey et al., 1999). Bandura (1997) notes that most stage theories disintegrate as the necessity for subtypes within stages creeps in. Among the best of the cluster analytic studies is an investigation of subtypes within each stage of change (Norman, Velicer, Fava, & Prochaska, 2000). Within each stage there was a classic subtype (fitting all the characteristics of the Transtheoretical Model of Change), progressing subtype (exhibiting features similar to the subsequent stage), and a disengaged subtype (not concerned about pros, cons, or the physiological effects of tobacco). The clusters were replicated across 2 samples. The different clusters were shown to use processes of change at differing rates consistent with the Transtheoretical Model of Change.

### *Stage or Pseudo-Stage?*

There has been considerable controversy about the stages of change being a true stage model or a pseudo-stage model (Bandura, 1997; Carey et al., 1999; Horwath, 1999; Sutton, 1996). Weinstein, Rothman, and Sutton (1998) describe four requirements of a true stage theory. Relevant evidence regarding the Transtheoretical Model of Change is provided after each requirement:

1. A stage theory assigns each person to one of a limited number of categories.
  - Staging algorithms do this without ambiguity. However, as noted by Bandura (1997), the algorithms of the Transtheoretical Model of Change have been set somewhat arbitrarily.
  - Self-report questionnaire measures of the stages of change have led to considerable difficulties in assigning individuals to a specific stage of change, necessitating more arbitrary classification rules (Budd & Rollnick, 1996; Sutton, 1996).
  - Although cluster analytic studies have yielded clusters of people that resemble the “classic” stages of change profiles, there are many subtypes and atypical variations (Prochaska, Velicer, & Diclemente, 1991; Carey et al., 1999; Norman, Velicer, Fava, & Prochaska, 2000). Exception-making is usually the harbinger of the demise of the stage theory (Bandura, 1997)
2. A stage theory must order the stages. The order does not have to be invariant for every single person but must describe the actions of the majority of individuals.

- The simplex structure of the major stages of change measures is considered evidence of an invariant structure of the stages of change (Carey et al., 1999; McConaughy et al., 1989) but the evidence is not considered strong evidence because pseudo stage models can produce simplex structures as well (Sutton, 1996).
  - Using a relatively new statistical procedure (latent transition analysis), it was found that backward and forward movement across the stages of change characterizes the data best. Skipping stages can occur but does so infrequently. People are much more likely to move only one stage over any short period of time (Martin, Velicer, & Fava, 1996).
3. Stage theories posit that common barriers to change face people in the same stage and can be helped by similar interventions.
- People at the precontemplation stage face similar barriers to change in that they are not as conscious of the implications of their problematic behavior as other people are. They can be helped by less confrontational consciousness raising interventions and shocking/dramatic demonstrations of the consequences of their actions (Prochaska & DiClemente, 1983).
  - People at the contemplation stage face similar barriers to change in that they are unsure of their ability to change and can be helped by self-liberating interventions (Prochaska & DiClemente, 1983).
  - People at the preparation stage face similar barriers to change in that they are not sure that they have the resources and skills to make the changes they wish

to make. They can be helped by the moral, technical, and material support of helping relationships (Prochaska & DiClemente, 1983).

- People in the action stage face similar barriers to change in that they may not have the technical knowledge or skills to effect the changes they wish to make. They can be helped by being given behavioral techniques of change.
  - People in the maintenance stage face similar barriers to change in that they become fatigued or bored with the constant effort required to effect the action-based processes of change long after they have made substantial progress. If action-based processes of change are no longer used, they are in danger of relapse. They can be similarly helped by mobilizing their support network to provide the necessary structure and reinforcement to continue using action-based processes of change.
4. People in different stages face different barriers to change. If people faced the same barriers to change at the different stages and could be helped by the same interventions, a continuum model would be a more parsimonious model. An experiment using matched and mismatched treatments can readily distinguish between a stage model and an additive continuum model.
- Although there is a wealth of information suggesting people at different stages face different barriers to change and tend to use different processes of change, the associations are not as strong as Prochaska and DiClemente (1992c) seem to imply. Sutton (1996) points out that the data are far from conclusive on this question.

- Several studies have tested the matched vs. mismatched interventions hypothesis using the stages of change paradigm and have not confirmed Transtheoretical Model of Change's predictions (Quinlan & McCaul, 2000) but there is partial support for the hypothesis in other studies (Prochaska, DiClemente, Velicer, & Rossi, 1993; Dijkstra, De Vries, & Roijackers, 1999).
- Only stage models predict that the sequencing of treatments is important. For maximum effectiveness, the sequence of interventions should follow the hypothesized sequence of stages. No studies related to the Transtheoretical Model of Change have investigated this hypothesis (Horwath, 1999).

#### *The Transtheoretical Model of Change Extending Its Boundaries*

Just as Freud's theories were affected by his exposure to wealthy neurotic women and Roger's theories were affected by his early work with identity searching undergraduates, Prochaska and DiClemente's Transtheoretical Model of Change bears the mark of their work with addictive behaviors. For example, by the debut of the complete Transtheoretical Model of Change in 1983, few Americans could legitimately claim ignorance of the hazards of drug, alcohol, and tobacco use. The construct of precontemplation, therefore lumped together the unaware and the unwilling. These are likely to be very different groups with differing prognoses. The change processes that move them to contemplation are likely to be the same (consciousness raising, dramatic relief, and self-reevaluation) but the dosages of change processes and the level of change to be targeted is likely to be higher for the unwilling than for the unaware. The unaware



are likely to be moved into contemplation by change processes applied at the symptom/situational level whereas the unwilling have (by definition) already rejected such interventions.

There are other features of the Transtheoretical Model of Change that are not easily applied to non-addiction-type clinical problems. Horwath (1999) noted that the application of the Transtheoretical Model of Change has promise in the field of eating behaviors but the translation is made difficult because:

1. The goal of smoking intervention is cessation whereas eating interventions is reducing intake of some foods and increasing intake of others.
2. In smoking interventions, the ultimate goal is clearly understood by everyone. In eating interventions the goals are not as easily understood.
3. In smoking research the outcome variables are relatively simple compared to eating research outcome variables.
4. Smoking interventions ultimately target one behavior whereas eating interventions focus on multiple behaviors.
5. Quitting smoking is difficult at first but gets easier over time. Eating more healthily is easy at first but is difficult to maintain.
6. Quitting smoking produces immediate physiological changes whereas eating interventions produce distant and subtle changes.

#### *Transtheoretical Model of Change and Couple Therapy*

All of the difficulties noted by Horwath (1999) in translating the Transtheoretical Model of Change to eating interventions apply equally if not more so to couple therapy.

Couple therapy throws in another difference that makes everything more complicated: Changing the relationship is not an individual decision.

*Stages of changing what?* Addiction interventions ultimately aim at reducing the harmful effects of the addictive agent. Applying Transtheoretical Model of Change principles to couple therapy is complicated by the fact that there are many areas of change that might be desirable.

It is possible to conceive a global construct of Readiness to Change the Relationship. Such a model assumes that if one is contemplating change in one problematic area (e.g., becoming sexually monogamous after years of philandering), one is likely to be contemplating change in another (e.g., redistributing childcare responsibilities). This idea breaks down when the action stage is considered. It seems unlikely that a person would be able to work on all aspects of a troubled relationship at once. Horwath (1999) cited evidence that people are likely to be in different stages of change with respect to different health practices. There is no reason to believe that marital relationships would be different.

It is possible that instead of a global readiness to change variable, readiness to change is most usefully sectioned into domains of functioning. Using the domains of functioning described in Heffer and Snyder (1998) as an example of a domain classification system, one might examine separately readiness to change one's cognitions, affects, behaviors, communication, or structure (at the individual, dyadic, family, or societal level). A related approach might be to examine readiness to change at the level of content. Using the subscales of the Marital Satisfaction Inventory-Revised

(Snyder, 1997) as an example of a content classification system, one might examine separately readiness to change one's affective communication, problem-solving communication, aggression, time together, finances, sexual functioning, role orientation, and child rearing methods.

Another possibility is that readiness to change one behavior is completely independent of readiness to change another behavior. It is possible for people to be attempting to increase the frequency of sexual relations with their spouses (action stage) but not thinking of changing the variety of sexual expression (precontemplation stage). However, it seems likely that if people attempt to solve the frequency problem, a significant percentage of people will see that it might be related to the variety problem. Thus, it is likely that the stages of change are not completely independent with respect to behaviors to be changed.

*Stages of change for whom?* In their chapter on transtheoretical therapy with couples, Prochaska and DiClemente (1984, p. 108) acknowledged the problem of spouses being at different stages of change. They also noted the common problem of spouses being in the precontemplation stage with respect to their own behaviors but at the action stage with respect to their partner's. They recommend that therapists share this dilemma with the couples. They find this intervention to be highly effective because it is a simple way to conceptualize a problem that might otherwise be difficult to understand. They note that change is more difficult when partners are at different stages of change.

*Unit of analysis – Couple or individual?* While the idea of spouses being at different stages of change presents a helpful conceptual tool for therapists, it presents a

theoretical Gordian Knot to researchers. Using the individual as the unit of analysis for some purposes makes sense but it usually will not result in an adequate understanding of change processes: The stage of change of one spouse is likely to effect and affect changes in the other spouse. Using the couple as the unit of analysis makes theoretical sense but has practical limitations. With 5 possible stages for each spouse, 25 spouse-stage combinations are possible. If we try to account for couples in different stages of change for different behaviors related to the overall problems, the number of combinations becomes infinite. The theory becomes unwieldy and untestable unless given some restrictions.

*Strengths of the Transtheoretical Model of Change*

1. The Transtheoretical Model of Change is broad, open, and deep. The Transtheoretical Model of Change attempts to provide a conceptual framework for all kinds of self-initiated change. It makes few radical claims and thus offends few people. Davidson (1992) calls it non-denominational but Orford (1992) believes that its roots are firmly cognitive-behavioral. The Transtheoretical Model of Change is open to falsification and modification. Different stages and processes of change could enter the Transtheoretical Model of Change at any time, given consistent findings.
2. The Transtheoretical Model of Change is theoretically eclectic but not technically eclectic (Norcross & Newman, 1992). That is, it does not take a whatever-works-is-fine stance but makes firm predictions when different approaches are likely to be successful. It makes a genuine attempt to integrate

without descending into a dead-end, anti-scientific, post-modernist all-opinions-are-equally-valid stance.

3. Finally, the Transtheoretical Model of Change distinguishes between multiple levels of change, including superficial symptom changes and deep character restructuring. Thus, Transtheoretical Model of Change provides a broader view of outcome data (Prochaska & DiClemente, 1992c). Instead of focusing only on symptom relief, the efficacy of interventions can be evaluated in terms of whether they successfully advance someone along the stages of change. For example, a form a psychodynamic therapy may have been found to be ineffective in relieving manic symptoms but successful in motivating precontemplating bipolar clients to consider psychopharmacotherapy treatment. Thus, sequencing the treatments would improve overall outcomes.

#### *Weaknesses of the Transtheoretical Model of Change*

1. Some of the ideas from the Transtheoretical Model of Change are difficult to translate into non-addiction problems (Horwath, 1999).
2. The stages of change construct is already messy at the individual level and becomes nearly unmanageable at the dyadic and group level. There are signs that the stage construct is giving way to a readiness continuum (Kraft, Sutton, & Reynolds, 1999).
3. For couple therapists, understanding coerced change and unconsciously motivated change is important. The Transtheoretical Model of Change has little to say about these topics.

4. Prochaska, DiClemente, and their associates have published many large-scale studies that rarely have results that threaten Transtheoretical Model of Change constructs. Their underfunded allies seem to get mixed results and researchers with competing hypotheses seem to obtain few supporting results for the Transtheoretical Model of Change. Only time and rigorous research will tell.

#### *Research Implications*

The application of the Transtheoretical Model of Change to couple therapy would first require the development of measures of Transtheoretical Model of Change constructs applied to couples. Much like DiClemente and Prochaska (1982) began studying change processes in self-changing smokers, a similar survey of change processes could be conducted with community samples of couples. It would be important to discover if the same change processes used by individuals are used by couples.

A measure of the levels of change construct could be developed for couples. With such a measure, researchers could test the hypothesis that interventions aimed at lower levels of change are likely to produce rapid change with the least effort and that interventions aimed at higher levels of change should be reserved for more recalcitrant problems. Snyder's (1999) hypothesis that sequencing interventions according to level of change results in superior outcomes could be tested. It is possible that sequencing interventions according to stage and level of change results in superior outcomes compared to sequencing according to either stage or level of change alone.

A measure of the stages of change would have to be developed. A number of different measures could be developed simultaneously to find the most useful method of measurement. It is an open question whether the best approach to measuring the stages of change in couples is best aimed at readiness to change the relationship in general, different global domains of the relationship, or specific behaviors identified as relevant by the couple or therapist.

It is important to discern whether readiness to change fits a stage model or continuum model with couples. A stage model would meet requirements outlined by Weinstein et al. (1998). If readiness for change fits a stage model, the following hypotheses are likely to be supported:

1. Awareness of the relations between problematic relationship behaviors and relationship distress will distinguish among precontemplation, contemplation, and preparation but will be less related to action and maintenance.
  - a. Increasing awareness of the linkages between the behaviors and the distress will be more strongly associated with movement from precontemplation to contemplation and with movement from contemplation to preparation than it would with transitions to later stages.
2. Self-efficacy to change problematic relationship behaviors will be positively correlated with the last four stages of change but will be unrelated to precontemplation.
  - a. Interventions that increase self-efficacy will facilitate movement along all stages except from precontemplation to contemplation.

3. Helping relationships will facilitate movement along all stages of change but the mechanism by which the helping relationship facilitates change will depend on the stage of change.
  - a. The therapeutic alliance at the precontemplation stage will be:
    - i. More strongly associated with willingness to talk about the problematic relationship behavior and consider the pros and cons of change than at higher stages.
    - ii. More strongly associated with preventing premature termination than at higher stages (except maintenance).
    - iii. Less strongly related to homework compliance than at higher stages.
  - b. The therapeutic alliance at the contemplation stage will be:
    - i. More strongly associated with openness to experiencing vulnerable emotions associated with the problem, the ability to withstand confrontation from the therapist, and exploratory homework compliance.
    - ii. Less strongly related to action-oriented homework compliance than at higher stages.
  - c. The therapeutic alliance at the preparation stage will be:
    - i. More strongly associated with willingness to make specific plans and initial change attempts.



- ii. More strongly associated with advice and information seeking by the couples.
  - d. The therapeutic alliance at the action stage will be more strongly associated with homework compliance than with other stages.
  - e. The therapeutic alliance at the maintenance stage will be
    - i. More strongly associated with relapse prevention, treatment adherence, and willingness to work on issues at higher levels of change than at other stages.
    - ii. More strongly associated with preventing premature termination than at other stages (except precontemplation).
- 4. With respect to any particular marital problem, couples at higher stages of change are more likely to have better outcomes than couples at lower stages of change.
- 5. With respect to any particular marital problem, couples at discrepant stages of change are more likely to have poorer outcomes than couples at similar stages of change.
- 6. Spouses who tailor their self-change attempts to their own stage of change and adapt their relationship change attempts to their spouse's stage of change will be more successful in their change attempts.
- 7. Correctly sequenced interventions according to the Transtheoretical Model of Change will lead to better outcomes than incorrectly sequenced intervention.

Assuming that at least a modified Transtheoretical Model of Change framework for couples therapy survives empirical scrutiny, many applied research projects could be developed. Conceivably, a database of all empirically supported couple therapy techniques could be assembled and classified according to stage and level of change. With sufficient basic research, the probability of a specific technique successfully moving a couple to a higher stage could be known in advance. Not only could such a database be an important resource for couple therapists, it could be used to develop expert system interventions for self-changing couples. With sufficient empirical study, a series of sophisticated algorithms could be integrated into a computer program. An interactive online assessment procedure could provide individualized, stage-matched suggestions for couples wishing to improve their relationship without the aid of a therapist. If couples were to give feedback to the computer as to whether the suggestions were helpful (if tried), the system could get “smarter” by adapting to the couple by giving suggestions that were successful in promoting change in couples most similar to the couple. Such a system would probably not take the place of couple therapists but would probably increase the demand for couple therapy by provoking many precontemplating couples to seek additional help, especially if the continuous assessment procedure screened for problems that required face-to-face expert attention. A similar system has been developed and tested for smokers (Velicer & Prochaska, 1999). From a public health perspective, the impact on the entire population of this system was much higher than previous anti-smoking interventions by several orders of magnitude. Given the prevalence of marital discord, it would seem that a similar system

for couples could be a cost-effective method of improving the emotional health and family strength of the population.

### *Conclusion*

The Transtheoretical Model of Change is extremely ambitious in that it attempts to provide a framework for understanding all self-initiated change. It is noteworthy in that it has scientifically studied the topic of teleological change in a manner that researchers have been able to accept without discomfort. Until now, it has been largely ignored by couple therapy researchers but it is a potentially unifying force in the theoretically fragmented field of marital research. Its inclusive, non-denominational terminology could provide couple therapists a common language that will stimulate cross-fertilization and produce new approaches with “hybrid vigor.” At the very least, the Transtheoretical Model of Change is likely to generate meaningful hypotheses and research that will benefit the entire field.

### *The Present Study*

The following hypotheses derived from the Transtheoretical Model of Change will be tested in the current study:

1. Positive changes in the relationship will correlate with use of change processes.
2. Couples using change processes that match their stages of change will change more than couples using change processes not matched to their stages of change.
3. Couples in earlier stages of change will make fewer positive changes than couples at higher stages of change.

4. Couples with partners in different stages of change will make fewer positive changes than couples with partners in the same stage of change.
5. Couples in precontemplation and contemplation stages will rate action-oriented exercises as less helpful than consciousness-raising exercises. The reverse pattern will be observed in couples in the action and maintenance stages.

### CHAPTER III

### METHODOLOGY

#### *Research Participants*

Two samples of convenience were selected for this study. The first sample of married couples over the age of 18 was recruited from a mid-sized city in central Texas through the use of flyers, word of mouth, radio announcements, and newspaper ads. Potential participants were invited to participate in a 9-week group seminar for couples wishing to enhance their marital relationships. Because this group program was not intended for couples that were severely distressed or functioning poorly, several exclusionary criteria were identified. Initial telephone interviews identified couples with a history of physical violence, extramarital affairs, separations, or substance abuse. Unmarried couples or couples in concurrent couple therapy were excluded from the study. A second face-to-face screening interview with each couple was also conducted prior to the first group session to clarify expectations for group participation. A small subset of couples was referred to alternative interventions at this time based on severity of relationship distress or other individual issues warranting other treatment. A total of 55 couples were recruited to participate in the seminar. Of these 55 couples, 17 couples did not complete the 9-week seminar. The majority of these dropped out of the study within the first 4 weeks. The reasons for not completing the seminar were diverse, complex, and idiosyncratic. The couples who voiced their reasons for not completing cited boredom, increased marital conflict, childcare difficulties, and difficulty fitting into the group. Of the 38 couples that completed questionnaires at the end of the group,

2 couples did not complete the 6-month follow-up questionnaires, 1 due to death of 1 spouse, the other due to unwillingness to complete the long questionnaires. Although there were 5 Hispanic participants, 2 African-American participants, 1 Filipina participant, 1 British participant, and 1 Turkish participant, participants were mostly European-American. The majority of participants were college educated (70% for husbands, 74% for wives). The average age of husbands was 40. Average age of wives was 38. The average number of years married was 10.9 years. The average number of children per couple with children was 2.0, with 13 (24%) childless couples.

The second sample of volunteer participants was recruited primarily by word of mouth and random selection from a telephone book from an affluent rural region of New York. Eighty-nine couples agreed to participate, of whom 65 couples completed first round of questionnaires, and of these, 40 completed the second round of questionnaires. The high attrition rate was presumably primarily due to the length of the questionnaire packets. Like the participants in the first sample, most participants were college educated (74% for husbands, 67% for wives). About 93% were of European-American descent, with 3 Asian-American participants, 2 Hispanic-American participants, and 2 Native-American participants. The average age of husbands was 47. Average age of wives was 45. The average number of years married was 19.5. The average number of children per couple with children was 2.3, with 22 (25%) childless couples.

### *Measures*

In the clinical sample, at each assessment before and after the group treatment and again at six-month follow-up, each partner completed the Marital Satisfaction

Inventory - Revised (Snyder, 1997). In addition to this previously published measure, several newly developed questionnaires were administered. The Readiness for Marital Change Questionnaire (RMC; Appendix 1) is a 3-part questionnaire designed to measure several aspects of the stages of change described in the Transtheoretical Model of Change (Prochaska & DiClemente, 1984). The first part of the RMC contains 40 items that assess general aspects of the stages of change. The precontemplation, contemplation, action, and maintenance stages respectively are assessed by ten 5-point Likert-scale items with response options ranging from strongly disagree to strongly agree.

The second part of the RMC was designed to measure the stage of change associated with the aspects of marital satisfaction measured by each of 9 selected scales of the MSI-R (Global Distress, Affective Communication, Problem-Solving Communication, Aggression, Time Together, Finances, Sexual Satisfaction, Role Orientation, and Conflict over Childrearing). Thus, the second part of the RMC is intended to measure readiness to change with respect to more specific behaviors than the first part of the RMC. For each item, participants indicated whether they were not intending change, thinking about change, preparing to change, making changes, or trying to prevent problems from returning.

The third part of the RMC has 9 Likert-scale items and was intended to measure the self-efficacy to change aspects of the marital relationship. The third part is related to the same 9 scales of the MSI-R as the second part of the RMC. For each of the 9 MSI-R scales, the RMC measures the person's self-efficacy to change an aspect of their marital

relationship. For example, participants are asked to rate how confident they are that they could resolve problems related to how they communicate affection. Response options were arranged in a 5-point Likert scale ranging from discouraged to very confident.

The Processes of Marital Change Questionnaire (PMC) was designed to measure each of the 11 processes of change hypothesized by the Transtheoretical Model of Change. Each process was measured with at least 4 Likert-scale items.

The Levels by Processes of Marital Change Questionnaire (LPMC) was developed to measure the 11 processes of change at the 5 levels of change identified by the Transtheoretical Model of Change. Ideally, there would be 55 subscales to measure each of the 11 processes at each of the 5 levels. Unfortunately, the nature of this study precludes a questionnaire of such a length. The LPMC thus contains 55 items with each item representing a single process at a single level of change.

### *Procedure*

In the seminar sample, couples were given questionnaires during the face-to-face screening interview and were asked to complete them before the first session of the seminar. Time 2 packets were distributed on the eighth week of the seminar and collected on the final seminar one week later. Each couple was instructed to complete their questionnaires separately. They were encouraged not to share their answers with each other nor ask each other how they answered the questionnaires.

After consenting to participate, each couple in the community sample received a packet of questionnaires by mail. Each couple was instructed to complete their questionnaires separately. They were encouraged not to share their answers with each



other nor ask each other how they answered the questionnaires. A stamped-envelope was included to return the questionnaires. Two months after receiving the initial packet, each couple was sent the Time 2 packet, which had identical measures.

## CHAPTER IV

### RESULTS

#### *Preliminary Analyses*

Although couple data should ideally be analyzed at the couple level of analysis, the small sample size in this study made it impractical to do so while investigating the psychometric properties of the new scales. Although technically problematic, husbands' and wives' responses were merged and treated as if their data were independent from each other. It should be noted that psychometric properties of the scales were not found to be substantively different from those reported here when husbands and wives were analyzed separately (e.g., the number of factors in each instrument was the same, the internal consistency coefficients were did not differ by more 0.1 for almost every scale).

*Psychometric properties of the RMC-Part 1.* To investigate the internal structure of the RMC-Part 1, the internal consistency (Cronbach  $\alpha$ ) of the 4 scales intended a priori to operationalize the 4 stages of change was computed. Of the 11 items intended to operationalize the Precontemplation stage, 4 had near zero or negative item-total correlations. The overall Cronbach  $\alpha$  was .67, indicating moderately low consistency. A maximum likelihood factor analysis with oblimin rotation of the 11 Precontemplation items revealed a clear 2-factor structure, using parallel analysis and the Kaiser-Guttman and the scree plot rules. The 2 factors together explained 46% of the variance. The 4 items with low or negative item-total correlations (9, 19, 22, and 37) formed a separate factor that is negatively correlated with the first factor ( $r = -.29$ ). These 4 items appear to be linked thematically in that they all refer to the spouse instead of the self as needing to

make changes if the marriage is to improve. The 7 items of the first factor are linked in that they deny a need for changes in the marriage. The first Precontemplation factor could be referred to as the “No Need for Change” factor and the second Precontemplation factor could be referred to as the “Spouse Needs to Change” factor. The 7 items from the “No Need for Change” factor have good reliability (Cronbach  $\alpha = .87$ ). The 4 items from the “Spouse Needs to Change” factor have fair reliability (Cronbach  $\alpha = .68$ ).

The internal consistency of the 9 items intended to operationalize the Contemplation stage was high (Cronbach  $\alpha = .91$ ). A maximum likelihood factor analysis of the 9 items revealed a clear single-factor structure, using parallel analysis and the Kaiser-Guttman and the scree plot rules. The first factor explained 54% of the variance.

The internal consistency of the 10 items intended to operationalize the Action stage was high (Cronbach  $\alpha = .90$ ). A maximum likelihood factor analysis of the 10 items revealed a clear single-factor structure, using parallel analysis and the Kaiser-Guttman and the scree plot rules. The first factor explained 50% of the variance.

The internal consistency of the 10 items intended to operationalize the Maintenance stage was moderate (Cronbach  $\alpha = .78$ ). Item 13 had a significantly negative item-total correlation ( $r = -.37$ ). All other item-total correlations were positive and ranged from .38 to .72. The wording of item 13 (“Our marriage is mostly problem-free and I want to keep it that way.”) suggests that it is tapping marital satisfaction rather than prevention of the return of previous problems. Dropping item 13 from the

Maintenance scale improved the internal consistency considerably (Cronbach  $\alpha = .86$ ). A maximum likelihood factor analysis of the 9 remaining items revealed a single-factor structure, using parallel analysis and the scree plot rule. The first factor explained 42% of the variance.

It is possible that the Precontemplation scale and the Contemplation scale simply measure opposite poles of the same dimension. To address this possibility, a maximum likelihood factor analysis of the “No Need for Change” Precontemplation factor items and the Contemplation items was conducted. Using parallel analysis and the scree plot rule, a clear single factor emerged with the “No Need for Change” Precontemplation factor items loading negatively and the Contemplation items loading positively on the factor.

It is possible that the Maintenance and Action scales measure the same underlying concept. To address this possibility, a maximum likelihood factor analysis of the Maintenance items and the Contemplation items was conducted. Using the scree plot rule, a clear single factor emerged, explaining 45 percent of the variance. Using parallel analysis, 2 factors were extracted. The 2 factors were highly correlated ( $r = .65$ ), with items of the first factor related to working hard on the marriage and items of the second factor related to acknowledging past or current problems in the relationship. The 2 factors were not systematically related to either the Action or Maintenance scales. Thus, it appears that respondents did not distinguish clearly between taking current action to improve the marriage and preventing previous marital problems from returning.

As might be expected, none of the 5 scales (Precontemplation – No Need to Change, Precontemplation – Spouse Needs to Change, Contemplation, Action, and Maintenance) are independent of marital satisfaction. All 5 scales correlate substantially ( $|r| > .45, p < .01, N = 237$ ) with the MSI Global Distress Scale and with each other. (See Table 2.) Because the absolute values of the correlations are in descending order the further one moves from the diagonal with the exception of the low correlation between the 2 Precontemplation scales (No Need for Change and Spouse Needs to Change), the 5 scales have a bifurcated simplex structure. (See Figure 2.) Thus, there may be 2 varieties of precontemplation: one due to a lack of problems and one due to a defensive posture of inaction.

The factor structure of the all of the items of RMC, part 1 was also investigated. Using the scree plot rule and parallel analysis, a maximum likelihood factor analysis without rotation revealed a 3-factor structure. The rationale for not rotating the 3 factors is explained later. All items had substantial loadings (see Table 3) on the first factor, which explained 40% of the variance. This factor can be interpreted as general readiness for change. Factor scores derived from the first factor were highly correlated with the MSI Global Distress scale ( $r = .68, p < .01, N = 237$ ), indicating that readiness for change is closely related to marital distress. The total composite readiness for change scale computed from all 40 items (with items with negative loadings on the first factor reverse-coded) had high reliability (Cronbach  $\alpha = .96$ ).

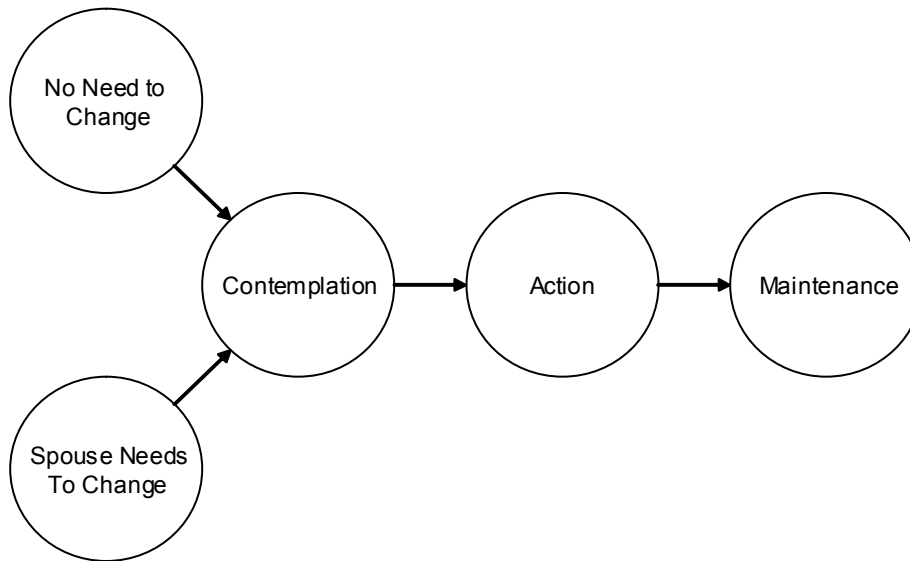
The second and third factors explained an additional 7% and 4% of the variance, respectively. The second factor was bipolar with 12 items with substantial loadings.

Table 2

*Intercorrelations between Readiness for Marital Change Questionnaire Subscales*

	1	2	3	4	5
1. Spouse Needs to Change	–	-.32	.54	.45	.40
2. No Need for Change		–	-.82	-.77	-.61
3. Contemplation			–	.80	.67
4. Action				–	.82
5. Maintenance					–

*Note.* All correlations are significant at  $p < .01$ .



*Figure 2.* The bifurcated simplex structure of the Readiness for Marital Change Questionnaire subscales.

Table 3

*Readiness for Marital Change Questionnaire, Part 1 Factor Loadings*

Items	1	2	3
Improving my marriage has been on my mind.	87		
I need to make changes in our marriage.	84		
I think that we should make some changes in our marriage.	80		
I have already begun to make changes in our marriage.	80	32	
I need to think about making changes in our marriage.	77	-33	
We have marital problems and I have begun to work on them.	77		
We have some marital problems that I should work on.	77		
There is little need to think about improving our marriage.	-75		30
We do not have marital problems.	-74	32	
I am actively trying to resolve some long-standing problems in our marriage.	73		
I am working to avoid slipping back into old conflicts with my spouse.	72		
I have been working at changing my behavior toward my spouse.	71		
My behavior in our marriage is causing problems and I am doing something to change it.	70		
We do not have any marital problems that need changing.	-70	33	
I am doing something about the marital problems that bother me.	68		
I do not spend much time thinking about changing our marriage.	-68		
I should make a plan to improve our marriage.	68		



Table 3 Continued

Items	1	2	3
I am working to keep old marital problems from returning.	66	38	
There is little need for me to change my behavior toward my spouse.	-65		35
I have been thinking about things I could do to improve our marriage.	64		
I am working on preventing problems from returning to our marriage.	62	44	
I am working on my marriage more than I used to.	62		
I have recently been putting more effort into my marriage than I usually do.	62		
I worry that we might slip back into old marital patterns that we had already changed.	60		
Sometimes the way I relate to my spouse hurts our marriage.	60		
Our marriage is mostly free of problems and I want to work at keeping it that way.	-59	40	
I want to keep previous marital conflicts from coming back.	59		
I have put my plans to improve our marriage into action.	57	40	
I have little motivation to change our marriage right now.	-56		31
Anyone can talk about improving their marriage, but I am actually doing something about it.	55	47	
Making changes in our marriage would have little purpose.	-52		
We had problems in our marriage, but I worked hard to resolve them.	49	35	
My spouse needs to change more than I do.	48		33

Table 3 Continued

Items	1	2	3
I have recently resolved a longstanding marital concern.	48		36
I am working hard to maintain improvements to our marriage.	47	50	
My spouse exaggerates our marital problems.	47		31
For now, I am just exploring options to make changes in our marriage.	34		
At this point, it is more up to my spouse to improve our marriage than it is up to me.	30		36
My spouse wants more changes in our marriage than I do.	30		35
In the past year, I have been able to resolve an important problem in our marriage.	30		

*Note.* Decimals omitted from factor loadings. Factor loadings <0.3 were omitted.

Items with positive loadings were thematically linked by statements related to taking action and to working hard to solve problems. Items with negative loadings were thematically linked by statements that implied that actions should be taken but had yet to be implemented. Thus, this could be interpreted as an “Action vs. Inaction” factor (i.e., high scores indicate that action is commensurate to need for change and low scores indicate inactivity despite distress). Factor scores derived from the second factor were negatively correlated with the MSI Global Distress scale ( $r = -.43, p < .01, N = 237$ ).

The third factor was unipolar with 6 items with substantial loadings (all positive). These items involve statements that current motivation to change is low and that one’s spouse is more in need of change than oneself. Thus, it could be interpreted as a “Denial of Responsibility for Change” Factor. Note that “denial of responsibility” does not mean that one is “in denial.” It is quite possible that spouses can make accurate assessments about who has greater influence over the relationship at any particular time. Factor scores derived from the third factor were unrelated to the MSI Global Distress scale ( $r = .09, ns, N = 237$ ) but had modest correlations with the MSI Affective Communication scale ( $r = -.43, p < .01, N = 237$ ) and the MSI Problem-Solving Communication scale ( $r = .19, p < .01, N = 237$ ).

Although factors are usually rotated after extraction, this step was omitted in this analysis. The primary advantage of rotation is to make interpretation of the factors possible when the unrotated factor loadings are difficult to interpret. In this case, the unrotated factor loadings are not difficult to interpret. An advantage of using unrotated factors is that they have the mathematically desirable property of each succeeding factor

explaining maximal variance (Dunteman, 1989, p. 63). Because rotation does not affect the amount of variability explained in the variables, the choice between rotated and unrotated factors depends on the interpretability of the factors and the theoretical perspective of the researcher (Dunteman, 1989, p. 50).

In this case, the major reason that unrotated factors were used is that rotation would diminish the importance of the large general factor, and obscure what is unique about the other factors. The eigenvalue of the first factor dwarfs the eigenvalues of the second and third factor (16.5 vs. 3.1 and 2.1, respectively). Rotation would distribute the variance of the general factor across the 3 rotated factors.

The second rotated factor would probably be labeled, “Taking Action” and would correlate positively with the MSI Global Distress scale (as would the other 2 factors). This positive correlation occurs not because of what is unique about this factor but simply because it is saturated with the unrotated general “Need for Change” factor which is highly correlated with the MSI Global Distress scale. This effect probably reflects the fact that people generally do not take corrective action in their marriage until they are unhappy with it. However, the variance that is unique to this factor (associated with taking action) is actually associated with less marital distress as revealed by the unrotated “Action vs. Inaction” factor’s negative correlation with the MSI Global Distress scale. This effect suggests that given any particular level of acknowledged need for change, taking action is associated with less marital distress.

Post-hoc cross-product regression models of the 3 RMC factors scores’ relation to the MSI Global Distress Scale suggest that the Need for Change and Action vs.

Inaction factors have significant main effects on Global Distress. (See Table 4.) However, the significant interaction between general readiness for change and taking action ( $\beta = -.17, t(225) = -3.89, p < .01$ ) suggests that the negative relation between general readiness for change and marital dissatisfaction is only operative when one is not taking action. This moderating effect was, in turn, moderated by a 3-way interaction such that Denial of Responsibility was only related to Global Distress if Need for Change was high and Action vs. Inaction was low ( $\beta = -.11, t(225) = -2.49, p < .05$ ). Figure 3 shows that Need for Change is always related to Global Distress but its effects can be reduced by taking action. Not taking action when change is needed is especially related to marital distress when one denies responsibility for change.

As a validity check for the RMC scales, it would be expected that that couples volunteering for the relationship enhancement seminar would have a higher readiness for change than couples from the community sample. A 2x2 ANOVA with Spouse and Sample as predictors of the RMC Composite Readiness for Change found that the Seminar group's RMC Composite ( $M=3.55, SD=0.38$ ) was significantly higher ( $F(1, 233) = 134.87, p < .01, \eta^2 = .37$ ) than the Community group's Composite ( $M=2.76, SD=0.62$ ). There was no evidence that the spouse main effect or the Spouse x Sample interaction were significant. The Sample main effect was not simply an artifact of the Seminar group's higher MSI Global Distress. After controlling for MSI Global Distress, the Group main effect remained significant ( $F(1, 232) = 45.66, p < .01, \eta^2 = .16$ ).

*Psychometric properties of the RMC-Part 2.* The 9 items of this scale form a composite Readiness for Change score with good reliability (Cronbach  $\alpha = .87$ ).

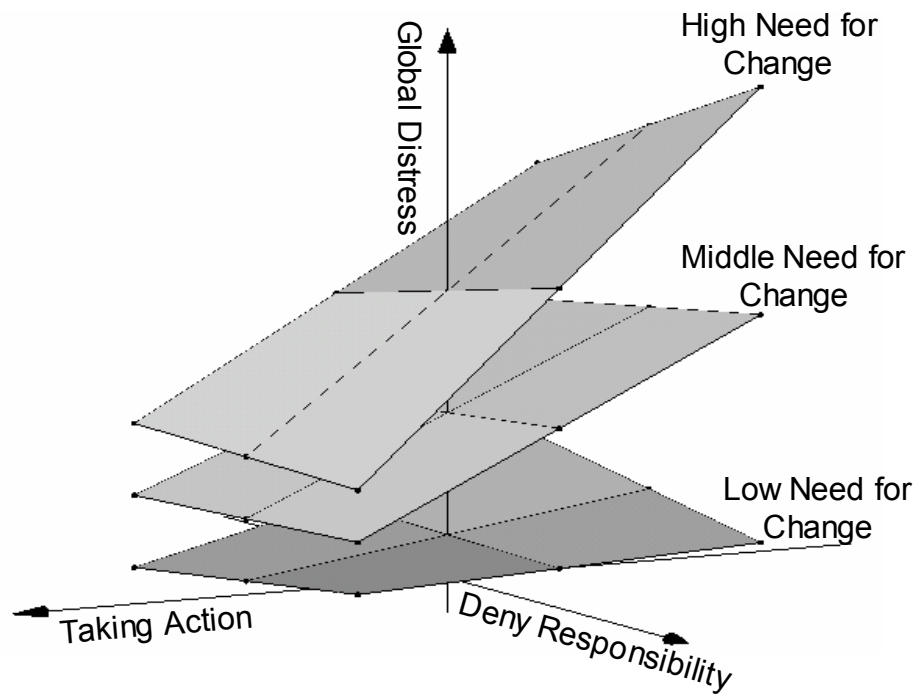
Table 4

*Linear and Interaction Models of the Relations between the MSI Global Distress Scale(GDS) and Readiness for Marital Change (RMC) Factor Scores*

Model	Cross-Product Regression Equation	$\Delta R^2$
1. Linear effects	$GDS = 52.7 + 6.2R^* - 3.6A^* - .6D$	.61*
2. 2-way Interaction	$GDS = 52.9 + 6.2R^* - 3.4A^* - .6D - 1.6RA^* + .9RD^* - .2AD$	.03*
3. 3-way Interaction	$GDS = 52.5 + 6.3R^* - 3.6A^* - .8D - 1.9RA^* + .7RD - 1.1AD - 1.1RAD^*$	.01*

*Note.* \*  $p < .01$ . R = Readiness for Change, A = Action vs. Inaction, D = Denying

Responsibility for Change.



*Figure 3.* MSI Global Distress predicted by three-way interaction between Need for Change, Taking Action, and Denying Responsibility for Change factor scores of the Readiness for Marital Change Questionnaire.

A maximum-likelihood factor analysis revealed that a single factor accounted for 43% of the variance. No other factors were present. The validity of the composite score from RMC-Part 2 is supported by its positive correlation with the composite score from RMC-Part 1 ( $r = .70, p < .01, N = 198$ ) despite vastly different item formats and content in the separate sections. The RMC-Part 2 composite is positively correlated with the MSI Global Distress scale ( $r = .55, p < .01, N = 198$ ).

*Psychometric properties of the Processes of Marital Change (PMC)*

*Questionnaire.* See Table 5 for measures of internal consistency of the PMC subscales. Internal reliability coefficients ranged from acceptable to excellent for the narrow-factor subscales and from good to excellent for the broad-factor subscales.

The scree plot rule and parallel analysis suggest that a maximum-likelihood factor analysis without rotation of the 52-item PMC should extract 3-factors, explaining 52% of the variance. Again, unrotated factors were chosen over rotated factors because the first factor explains 44.2% of the variance and dwarfs the other 2 factors (eigenvalue is 26.9 vs. 4.2 and 3.4). Rotating the factors would distribute the variance of the general first factor across all 3 factors and obscure what is unique about the second and third factors. The first unrotated factor is unipolar and can be interpreted as a “General Use of Change Processes” factor because all items of the PMC load positively on it. (See Table 6.) It is positively correlated with the RMC “Need for Change” factor ( $r = .38, p < .01, N = 123$ ) and the RMC “Action vs. Inaction” factor ( $r = .15, p < .05, N = 123$ ) but is not directly correlated with the MSI Global Distress scale ( $r = .06, p < .01, N = 123$ ). However, after controlling for the RMC “Need for Change” factor, the General Use of



Table 5

*Internal Reliability Coefficients (Cronbach  $\alpha$ s) of the Subscales of the Processes of Marital Change Questionnaire*

Broad Factor Subscales	
Narrow Factor Subscales	$\alpha$
Consciousness Raising	.86
Education	.83
Feedback	.77
Catharsis	.86
Dramatic Relief	.84
Corrective Emotional Experience	.81
Helping Relationship	.83
Reevaluation	.95
Self-Reevaluation	.89
Social Reevaluation	.91
Choosing	.87
Self-Liberation	.93
Social Liberation	.76
Conditional Stimuli	.87
Stimulus Control	.81
Counterconditioning	.81

Table 5 Continued

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Broad Factor Subscales	
Narrow Factor Subscales	$\alpha$
Contingency Control	.88
Self-Management	.81
Environmental Management	.74
Composite Process Score	.97

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Table 6

*Factor Loadings of the Processes of Marital Change Questionnaire*

Item	1	2	3
I read a book or an article about improving my marriage.	66	36	
I listened to a relationship expert talk about marriage.	64	26	
I listened to a community or religious leader (priest, rabbi, minister, etc) talk about marriage.	54	48	28
I spent some time educating myself about marriage.	71		
I listened to friends or family members about improving my marriage.	58	30	-31
I listened carefully to my partner in order to learn more about our relationship.	60		
Friends or family members gave me their observations about how my relationship seems to be going.	60		-44
Friends or family members gave me insight about my marriage.	62	20	-42
Statistics about high divorce rates and unhappy marriages affected me emotionally so that I wanted to improve my marriage.	48		
Dramatic portrayals (on television, movies, or some other art form) of other people's marriages moved me emotionally so that I wanted to change my marriage.	63		
Observing other couples interact moved me emotionally to improve my marriage.	60		
Watching people other than couples (for example, children, families, single people) moved me emotionally to make some changes in my marriage.	64		
Viewing an important emotional event in someone else's relationship had a positive effect on the way I view my own relationship.	65	28	

Table 6 Continued

Item	1	2	3
An emotional event in my life had a positive effect on my relationship.	65		
A positive emotional interaction with my spouse changed some part of our relationship for the better.	68		
A negative emotional interaction with my spouse changed some part of our relationship for the better.	60		
I was open with at least one person (other than my spouse) about my experience of being married.	53		-45
I had someone (other than my spouse) I could count on to help me if I were to have problems with my marriage.	47	28	-48
I had someone (other than my spouse) who listened when I needed to talk about my marriage.	54	23	-48
I felt supported in my marriage by at least one person (other than my spouse).	48	28	-24
I removed things around the house or work that might have a negative impact on my marriage.	58	28	31
I purposefully avoided places or people that might have a negative impact on my marriage.	53	38	39
I put things around the house or work that might have a positive impact on my marriage.	55	36	27
I purposefully went to places or associated with people that might have a positive impact on my marriage.	58	30	
I purposefully engaged in another activity to avoid doing or saying something that might hurt my relationship.	55		35
If negative thoughts about my partner came to my mind, I thought about something else.	54		33

Table 6 Continued

Item	1	2	3
To improve my marriage, I changed the way usually I respond to something my partner does.	71		
To improve our relationship, my partner and I changed at least one way we usually react to each other.	80		
I told myself that I could choose to improve my relationship.	75		
I made commitments to improve my relationship.	76		
I decided to make changes in my relationship.	82		
I became aware of new options I could choose to make my marriage better.	85		
I participated in religious, community or political activities that might improve the relationships of couples in my community.	48	33	26
I tried to help another person with his or her marriage.	65	26	-23
I noticed new options in my community or circle of friends that might help couples have better marriages.	65	29	
I did something that might help other couples in my community.	56		
I tried to see some of my partner's actions toward me in a different, more helpful light.	74		
I pondered how roles my partner and I play in our relationship affect me.	78	-30	
I tried to think more realistically about my expectations for myself in my relationship.	80	-25	
I became more aware of the effects of some of my partner's actions toward me.	77	-26	
I tried to see some of my actions toward my spouse in a different, more helpful light.	79	-34	

Table 6 Continued

Item	1	2	3
I pondered how roles my partner and I play in our relationship affect my partner.	75	-40	
I tried to think more realistically about my expectations for my partner in my relationship.	77		
I became more aware of the effects of some of my actions toward my spouse.	80	-36	
I rewarded myself for making changes in my relationship.	68		
I rewarded my partner (with praise, gifts, or other positive behaviors) to change some of his or her behavior.	76		
I stopped responding to something my spouse did in order to change some part of his or her behavior.	69		
I responded negatively to something my partner did, attempting to change his or her behavior.	59	-22	
My spouse rewarded me (with praise, gifts, or other positive behaviors) for changing some of my behavior.	72		20
My spouse stopped responding to something I did in order to change the way I was acting toward him or her.	70		20
My spouse responded negatively to something I did in order to change what I was doing.	61		
People (other than my spouse) responded differently to me in order to change some part of my marriage.	47	21	

*Note.* Decimals omitted from factor loadings. Factor loadings <0.2 were omitted.

Change Processes factor was negatively correlated with the MSI Global Distress scale (partial  $r = -.22$ ,  $p < .01$ ,  $N = 123$ ).

The second unrotated factor appears to be a bipolar factor that could be interpreted as “Tendency to Use Awareness vs. Reevaluation Processes.” It is significantly correlated with the MSI Global Distress scale ( $r = -.32$ ,  $p < .01$ ,  $N = 105$ ) such that a tendency to endorse more reevaluation processes than awareness processes was associated with more marital distress.

The third unrotated factor appears to be a bipolar factor that could be interpreted as “Reliance on People for Support vs. Reliance on Techniques and Things” factor. It is unrelated to the MSI Global Distress Scale.

To be very generous to the hypothesized 12-process factor structure, the Kaiser-Guttman rule was applied to the factor analysis and 10 factors were extracted from the PMC, explaining 69% of the variance. The narrow-factor subscales that emerged as distinct factors included Education, Dramatic Relief, Corrective Emotional Experience, Self-Liberation and Social Liberation. The Self and Social Reevaluation subscales did not emerge as separate factors but instead a broader factor of Reevaluation emerged. The Helping Relationship and Feedback subscales emerged as a single “Supportive Relationships” factor. The Stimulus Control, Counterconditioning, Self-Management, and Environmental Management subscales emerged as a single “Behavioral Conditioning” factor. Two small, unhypothesized factors emerged, probably as a result of idiosyncratic content sampling in the instrument’s design. Respectively, they could be called “Religious Involvement” and “Avoiding Negative Thoughts.”

*Psychometric properties of Levels by Processes of Marital Change (LPMC)*

*Questionnaire.* See Table 7 for measures of internal consistency of the LPMC subscales. Internal reliability coefficients were excellent for all subscales. Because the wording similarities within process scales and within levels scales were necessary for the level x process faceted design of the LPMC, the internal consistencies of the process scales are probably artificially inflated.

A multidimensional scaling of Euclidian distances between items of the LPMC failed to show any discernable order of the level facet. Indeed, the mean correlation of items within the same levels (mean  $r = .45$ ) was almost exactly the same as the mean correlation of items between levels (mean  $r = .45$ ). Thus, the LPMC Level scales were not computed and no hypotheses concerning levels of change were explored.

A maximum-likelihood factor analysis without rotation suggested that there are at least 3 factors in the LPMC (using parallel analysis and the scree plot rule). The decision to discuss unrotated factors in the LPMC was based on the same reasoning to use unrotated factors in the PMC. The first unrotated factor is, by far, the largest, explaining 44% of the variance. All 55 LPMC items loaded positively on the first factor (see Table 8), suggesting that a composite LPMC score can be computed to measure general use of change processes. The first unrotated factor was positively correlated with the MSI Global Distress Scale ( $r = .26, p < .01, N = 125$ ). The second unrotated factor was a bipolar factor that could be called “Social Liberation vs. All Other Processes.” The third unrotated factor was also a bipolar factor that could be called “Behavioral Conditioning Processes vs. Awareness Processes,” providing support for the



Table 7

*Internal Reliability Coefficients (Cronbach  $\alpha$ ) of the Subscales of the Levels by Processes of Marital Change Questionnaire*

Broad Factor Subscales	$\alpha$
Narrow Factor Subscales	
Consciousness Raising	.94
Education	.92
Feedback	.93
Catharsis	.93
Helping Relationship	.91
Reevaluation	.96
Self-Reevaluation	.92
Social Reevaluation	.94
Choosing	.92
Self-Liberation	.92
Social Liberation	.97
Conditional Stimuli	.96
Stimulus Control	.94
Counterconditioning	.92
Contingency Control	.94
Composite Process Score	.98

Table 8

*Factor Loadings of the Levels by Processes of Marital Change Questionnaire*

Items	1	2	3
I tried to learn about how my behavior affects our relationship.	68	20	20
I tried to learn about how my thoughts and expectations affect my relationship.	68		25
I tried to learn about how the way I disagree or argue with my partner affects my relationship.	67		
I tried to learn about how our family (our own children, our parents, our siblings, and other relatives) affects our relationship.	60		31
I tried to learn about how conflicts within myself affect our relationship.	64	16	26
I listened to others about how my behavior affects our relationship.	63		36
I listened to others about how my thoughts and expectations affect my relationship.	65		38
I listened to others about how the way I disagree or argue with my partner affects my relationship.	62		34 35
I listened to others about how our family (our own children, our parents, our siblings, and other relatives) affects our relationship.	56		
I listened to others about of how conflicts within myself affect our relationship.	65		28
Someone I trust helped me change my behaviors that affect my relationship.	61		
Someone I trust helped me think about my relationship in more helpful ways.	58		
Someone I trust helped to resolve disagreements or conflicts between my partner and me.	59		

Table 8 Continued

Items	1	2	3
Someone I trust helped me cope with family matters that affect my relationship.	53		
Someone I trust helped me cope with conflicts within myself that affect our relationship.	58		
Observing an emotional situation (in real life, a book, a movie, or other form of drama) motivated me to change my behavior in my relationship.	55	25	
Observing an emotional situation (in real life, a book, a movie, or other form of drama) motivated me to change the way I think about my relationship.	56		
Observing an emotional situation (in real life, a book, a movie, or other form of drama) motivated me to change the way that I resolve conflicts with my partner.	61		
Observing an emotional situation (in real life, a book, a movie, or other form of drama) motivated me to change the way that I cope with family relationship patterns that affect my relationship.	63		
Observing an emotional situation (in real life, a book, a movie, or other form of drama) motivated me to resolve conflicts within myself that affect our relationship.	61		
I thought about the impact of my relationship behavior on my own life.	68	27	
I thought about the impact of my relationship thinking style on my own life	68	22	
I thought about the impact of the way my partner and I resolve conflicts on my own life.	72	24	
I thought about the impact of my relationship interaction style on my own life.	73	20	

Table 8 Continued

Items	1	2	3
I thought about the impact of conflicts within myself on my own life.	69	28	
I thought about the impact of my relationship behavior on my partner.	66	30	33
I thought about the impact of my relationship thinking style on my partner.	72	30	36
I thought about the impact of my conflict resolution style on my partner.	72	33	32
I thought about the impact of our family interaction style on my partner.	61	37	35
I thought about the impact of conflicts within myself on my partner.	71	21	30
I chose to change the way I act in order to improve my relationship.	67	35	
I chose to change the way I think in order to improve my relationship.	69	35	
I chose to change the way I resolve conflicts in order to improve my relationship.	77	32	
I chose to change the way I interact with family members in order to improve my relationship.	61	22	
I chose to change the way I handle conflicts within myself in order to improve my relationship.	72	29	
I worked to help other couples change their behavior toward each other.	70	-57	
I worked to help other couples learn more helpful ways of thinking about their relationships.	76	-60	
I worked to help other couples learn more helpful ways of resolving conflicts.	78	-57	

Table 8 Continued

Items	1	2	3
I worked to help other couples manage family matters.	73	-52	
I worked to help other couples learn more helpful ways of handle conflicts within themselves.	69	-58	
I changed the way I respond to my partner's behaviors in order to improve my relationship.	67	22	
I changed the way I respond to my own thoughts about my partner in order to improve my relationship.	72	22	
I changed the way I respond to conflicts and disagreements with my partner in order to improve my relationship.	74	27	
I changed the way I respond to family relationships in order to improve my relationship.	70		-24
I changed the way I respond to conflicts within myself in order to improve my relationship.	77	22	
I changed things so that negative situations do not affect my relationship so much.	77	28	
I changed things so that any negative thoughts I might have do not affect my relationship so much.	77	31	
I changed things so that any negative ways of resolving conflicts and disagreements between us do not affect the relationship so much.	79	29	-21
I changed things so that any negative family relationships do not affect my relationship so much.	68	26	-24
I changed things so that any conflicts within myself do not affect my relationship so much.	76	35	-21
I avoided things that trigger negative behaviors or situations in my relationship.	58	28	-52

Table 8 Continued

Items	1	2	3
I avoided things that trigger negative thoughts that affect my relationship.	55	32	-56
I avoided things that trigger conflict or disagreement in my relationship.	51	26	-58
I avoided things that trigger negative family relationships that affect my relationship.	49	28	-55
I avoided things that trigger conflicts within myself that affect my relationship.	59	38	-52

*Note.* Decimals omitted from factor loadings. Factor loadings <0.2 were omitted.

Transtheoretical Model's distinction between "Action" processes and "Awareness" processes (Prochaska & Norcross, 1999, p. 19). However, Reevaluation loaded with the "Awareness" processes, more in line with Prochaska's earlier conceptualization of Reevaluation (Prochaska, 1984) than with his more current placement of Reevaluation as a form of Contingency Control.

### *Hypotheses Testing*

Except where noted, husbands' and wives' data were analyzed separately in this section.

*Hypothesis 1: Positive changes in the relationship will correlate with use of change processes.* This hypothesis could only be tested with the Community sample. The 12 narrow process scales, 7 broad process scales, and the composite scale from the Processes of Marital Change Questionnaire (PMC) and the 11 narrow process scales, 4 broad process scales, and the composite scale from the Levels of Marital Change Questionnaire (LPMC) were correlated with Time 1 – Time 2 changes in the 11 clinical scales from the Marital Satisfaction Inventory. Because each spouse rated their use of change processes twice, there were 3456 possible correlations (2 Times x 2 Spouses x 2 Raters x 12 MSI Change scales x [20 PMC scales + 16 LMC scales]). Of these, 235 were significant. (See Tables 9 through 20.) With an alpha of .05, about 173 of the 3456 are expected to be Type I Errors. Furthermore, 73 of the significant correlations were not in the expected direction (44 of the significant negative correlations were associated with the 2 child-related MSI scales).

Deciding which of these effects are genuine and which are spurious need not be a subjective task. Canonical correlation analysis is a procedure that is ideally suited for

Table 9

*Significant Correlations between Changes in MSI Conventionalization Scales and PMC and LPMC Process Scales (n=40)*

MSI Changes	Spouse	Time	Spouse's Process Ratings	
			Process	<i>r</i>
Husband	Wife	1	Conditional Stimuli	-.33*
		2	Conditional Stimuli	-.32*
			Stimulus Control	-.32*
Wife	Husband	1	Consciousness Raising	-.38*
			Feedback	-.39*
			Catharsis	-.44**
			Dramatic Relief	-.47**
			Corrective Emotional Experience	-.33*
			Helping Relationship	-.45**
			Conditional Stimuli	-.40**
			Conditional Stimuli †	-.34**
			Stimulus Control	-.37*
			Stimulus Control †	-.38*
			Counterconditioning	-.35*
			Choosing	-.40*
			Choosing †	-.35*
	Self-Liberation	-.40*		



Table 9 Continued

Spouse's Process Ratings				
MSI Changes	Spouse	Time	Process	<i>r</i>
Wife	Husband	1	Self-Liberation †	-.46**
			Composite Process Score	-.42**
		2	Consciousness Raising	-.40*
			Feedback	-.48**
			Helping Relationship	-.49**
			Self-Management	-.32*
	Wife	1	Stimulus Control	-.35*
			Social Reevaluation †	-.34*
			Self Liberation †	-.38*

Note. \*  $p < .05$

\*\*  $p < .01$

† From the LPMC

Table 10

*Significant Correlations between Changes in MSI Global Distress Scales and PMC and LPMC Process Scales (n=40)*

Spouse's Process Ratings				
MSI Changes	Spouse	Time	Process	<i>r</i>
Wife	Husband	2	Education	.33*
	Wife	1	Contingency Management	.34*
			Environmental Management	.40*

*Note.* \*  $p < .05$

Table 11

*Significant Correlations between Changes in MSI Affective Communication Scales and PMC and LPMC Process Scales (n=40)*

MSI Changes	Spouse's Process Ratings			<i>r</i>
	Spouse	Time	Process	
Husband	Wife	2	Consciousness Raising †	-.38*
			Education †	-.45**
			Conditional Stimuli	-.33**
			Counterconditioning	-.42**
			Self-Liberation	-.36*
			Environmental Management	-.36*
Wife	Husband	2	Counterconditioning	-.34*
	Wife	1	Environmental Management	.38*

*Note.* \*  $p < .05$   
 \*\*  $p < .01$   
 † From the LPMC

Table 12

*Significant Correlations between Changes in MSI Problem-Solving Communication Scales and PMC and LPMC Process Scales (n=40)*

Spouse's Process Ratings				
MSI Changes	Spouse	Time	Process	<i>r</i>
Husband	Wife	1	Consciousness Raising	.51**
			Consciousness Raising†	.45**
			Education	.48**
			Education†	.34*
			Feedback	.47**
			Feedback†	.49**
			Catharsis	.46**
			Dramatic Relief	.45**
			Corrective Emotional Experience	.36*
			Helping Relationship †	.52**
			Reevaluation	.35*
			Reevaluation†	.33*
			Self-Reevaluation	.36*
			Self-Reevaluation†	.37*
			Conditional Stimuli †	.38*
			Stimulus Control †	.43**
			Counterconditioning	.37*

Table 12 Continued

Spouse's Process Ratings					
MSI Changes	Spouse	Time	Process	<i>r</i>	
Husband	Wife	1	Counterconditioning †	.44**	
			Choosing	.37*	
			Choosing †	.39*	
			Self-Liberation	.37*	
			Self-Liberation †	.45**	
			Self-Management	.37*	
			Composite Process Score	.43**	
			Composite Process Score†	.46**	
			2	Consciousness Raising	.45**
				Consciousness Raising †	.52**
		Education		.40*	
		Education†		.42*	
		Feedback		.35*	
		Feedback		.54**	
		Catharsis		.37*	
		Corrective Emotional Experience		.34*	
		Helping Relationship †		.49**	
		Reevaluation		.45**	
		Reevaluation†	.41*		

Table 12 Continued

MSI Changes	Spouse's Process Ratings			
	Spouse	Time	Process	<i>r</i>
Husband	Wife	2	Self-Reevaluation	.40*
			Self-Reevaluation†	.41*
			Social Reevaluation	.49**
			Social Reevaluation†	.40*
			Conditional Stimuli	.41**
			Conditional Stimuli †	.50**
			Stimulus Control	.38*
			Stimulus Control †	.54**
			Counterconditioning	.34*
			Counterconditioning †	.45**
			Choosing	.42**
			Choosing †	.46**
			Self-Liberation	.36*
			Self-Liberation †	.47**
			Social Liberation	.39*
			Social Liberation†	.36*
			Contingency Management	.34*
			Contingency Management †	.43*
			Self-Management	.45**

Table 12 Continued

Spouse's Process Ratings				
MSI Changes	Spouse	Time	Process	<i>r</i>
Husband	Wife	2	Composite Process Score	.45**
			Composite Process Score†	.51**
Wife	Wife	2	Social Reevaluation	-.32*
			Environmental Management	-.33*

*Note.* \*  $p < .05$   
 \*\*  $p < .01$   
 † From the LPMC

Table 13

*Significant Correlations between Changes in MSI Aggression Scale and PMC and*

*LPMC Process Scales (n=40)*

MSI Changes	Spouse's Process Ratings				R
	Spouse	Time	Process		
Husband	Husband	2	Education	0.32*	
			Catharsis	0.34*	
			Catharsis†	0.44**	
			Corrective Emotional Experience	0.34*	
			Helping Relationship †	0.38*	
			Choosing †	0.38*	
			Self-Liberation †	0.35*	
			Counterconditioning	0.41*	
			Contingency Management†	0.35*	
			Wife	1	Contingency Management†
Wife	Husband	1	Consciousness Raising	0.38*	
			Education	0.40*	
			Catharsis	0.43**	
			Dramatic Relief	0.55**	
			Helping Relationship	0.36*	
			Reevaluation	0.36*	
			Reevaluation†	0.34*	
			Self-Reevaluation	0.37*	



Table 13 Continued

MSI Changes	Spouse's Process Ratings			
	Spouse	Time	Process	<i>R</i>
Wife	Husband	1	Self-Reevaluation†	0.36*
			Social Reevaluation	0.33*
			Choosing	0.46**
			Choosing †	0.36*
			Self-Liberation	0.33*
			Self-Liberation †	0.33*
			Social Liberation	0.53**
			Conditional Stimuli	0.40*
			Stimulus Control	0.41*
			Contingency Management	0.44**
			Self-Management	0.49**
			Environmental Management	0.34*
			Composite Process Score	0.47**
			Composite Process Score	0.36*
			Husband	2
Education	0.46**			
Feedback	0.40*			
Catharsis	0.33*			
Catharsis†	0.42*			

Table 13 Continued

MSI Changes	Spouse's Process Ratings			
	Spouse	Time	Process	R
Wife	Husband	2	Dramatic Relief	0.38*
			Helping Relationship †	0.50**
			Choosing †	0.49**
			Self-Liberation †	0.48**
			Social Liberation†	0.35*
			Conditional Stimuli	0.34*
			Conditional Stimuli †	0.43*
			Stimulus Control	0.35*
			Counterconditioning	0.38*
			Contingency Management†	0.49**
			Composite Process Score	0.35*
				Wife

Note. \*  $p < .05$

\*\*  $p < .01$

† From the LPMC

Table 14

*Significant Correlations between Changes in MSI Time Together and PMC and LPMC Process Scales (n=40)*

MSI Changes	Spouse's Process Ratings			R
	Spouse	Time	Process	
Husband	Wife	1	Stimulus Control †	0.34*
			Counterconditioning	0.34*
		2	Helping Relationship †	0.35*
Wife	Wife	1	Contingency Management †	0.35*
		2	Helping Relationship †	0.37*
			Counterconditioning †	0.32*

*Note.* \*  $p < .05$

\*\*  $p < .01$

† From the LPMC

Table 15

*Significant Correlations between Changes in MSI Finances Scale and PMC and LPMC Process Scales (n=40)*

MSI Changes	Spouse's Process Ratings			R
	Spouse	Time	Process	
Husband	Wife	2	Catharsis†	0.34*
			Helping Relationship †	0.39*
			Conditional Stimuli	0.33*
Wife	Husband	1	Dramatic Relief	0.40*
		2	Catharsis	0.36*
			Dramatic Relief	0.40*
			Helping Relationship	0.39*

Note. \*  $p < .05$

\*\*  $p < .01$

† From the LPMC

Table 16

*Significant Correlations between Changes in MSI Sex Scale and PMC and LPMC**Process Scales (n=40)*

MSI Changes	Spouse's Process Ratings				R	
	Spouse	Time	Process			
Wife	Husband	2	Conditional Stimuli		-0.39*	
			Counterconditioning †		-0.42**	
			Contingency Management †		-0.35*	
	Wife	1	1	Counterconditioning †		-0.34*
				2	Catharsis	
		Dramatic Relief			-0.37*	
		Reevaluation			-0.35*	
		Social Reevaluation			-0.37*	
		Choosing			-0.35*	
		Self-Liberation			-0.50**	
		Counterconditioning			-0.37*	
		Counterconditioning †			-0.37*	
		Contingency Management			-0.40*	
		Self-Management			-0.42**	
		Composite Process Score		-0.37*		

Note. \*  $p < .05$

\*\*  $p < .01$

† From the LPMC

Table 17

*Significant Correlations between Changes in MSI Role Orientation Scale and PMC and LPMC Process Scales (n=40)*

MSI Changes	Spouse's Process Ratings			R
	Spouse	Time	Process	
Husband	Husband	1	Dramatic Relief	0.36*
			Self-Reevaluation†	0.32*
Wife	Wife	2	Education	0.41**
			Husband	1
	2	Social Liberation†		
		Wife	1	Education
	Catharsis†			0.37*
	Stimulus Control			0.37*
	2			Education
		Dramatic Relief	0.37*	
			Social Liberation	0.35*
			Stimulus Control	0.45**

Note. \*  $p < .05$

\*\*  $p < .01$

† From the LPMC

Table 18

*Significant Correlations between Changes in MSI Family Scale and PMC and LPMC  
Process Scales (n=40)*

MSI Changes	Spouse's Process Ratings			R
	Spouse	Time	Process	
Husband	Wife	1	Reevaluation†	-0.34*
			Social Reevaluation†	-0.36*
Wife	Husband	2	Environmental Management	0.33*
	Wife	2	Feedback	0.38*
			Self-Reevaluation†	0.36*
			Contingency Management	0.35*
			Environmental Management	0.49**

*Note.* \*  $p < .05$   
 \*\*  $p < .01$   
 † From the LPMC

Table 19

*Significant Correlations between Changes in MSI Dissatisfaction with Children Scale and PMC and LPMC Process Scales (n=28)*

MSI Changes	Spouse's Process Ratings			R
	Spouse	Time	Process	
Wife	Husband	1	Self-Liberation	-0.38*
	Husband	1	Counterconditioning	-0.40*
	Husband	2	Self-Liberation †	-0.40*

*Note.* \*  $p < .05$

\*\*  $p < .01$

† From the LPMC



Table 20

*Significant Correlations between Changes in MSI Conflict over Childrearing Scale and PMC and LPMC Process Scales (n=28)*

MSI Changes	Spouse's Process Ratings				R
	Spouse	Time	Process		
Husband	Husband	1	Helping Relationship †		-0.47*
			Contingency Management		-0.40*
			Self-Management		-0.38*
		2	Consciousness Raising		-0.49**
			Consciousness Raising †		-0.41*
			Feedback		-0.58**
			Feedback †		-0.40*
			Catharsis†		-0.55**
			Helping Relationship		-0.40*
			Helping Relationship †		-0.52**
			Choosing †		-0.42*
			Conditional Stimuli †		-0.40*
			Stimulus Control		-0.41*
		Contingency Management		-0.53**	
		Self-Management		-0.51**	
		Environmental Management		-0.49**	
		Composite Process Score		-0.39*	

Table 20 Continued

MSI Changes	Spouse's Process Ratings			
	Spouse	Time	Process	<i>R</i>
Husband	Husband	2	Composite Process Score	-0.41*
		Wife	1	Feedback
			Reevaluation	-0.42*
			Self-Reevaluation	-0.41*
			Social Reevaluation	-0.41*
			Conditional Stimuli	-0.45*
			Counterconditioning †	-0.42*
			Contingency Management	-0.52**
			Self-Management	-0.50*
		Environmental Management	-0.51**	
Wife	Husband	1	Helping Relationship †	-0.43*
			Environmental Management	-0.40*
		2	Consciousness Raising †	-0.48*
			Education	-0.38*
			Feedback †	-0.54**
			Catharsis	-0.46*
			Catharsis†	-0.41*
			Dramatic Relief	-0.42*
			Corrective Emotional Experience	-0.44*

Table 20 Continued

Spouse's Process Ratings				
MSI Changes	Spouse	Time	Process	<i>R</i>
Wife	Husband	2	Helping Relationship †	-0.44*
	Wife	1	Catharsis†	-0.42*
		2	Catharsis	-0.38*
			Dramatic Relief	-0.61**
			Environmental Management	-0.39*

*Note.* \*  $p < .05$   
 \*\*  $p < .01$   
 † From the LPMC

exploratory tasks such as these. Canonical correlation can specify how one set of variables is related to another set of variables. It is like multiple regression except that instead of many predictors being used to simultaneously explain variance in one dependent variable, many predictors are used to simultaneously explain variance in many dependent variables. It does so in a manner similar to performing a principle component analysis on the predictor variables and performing another principle component analysis on the dependent variables and observing the correlations between the two sets of principle components. These “components,” in canonical correlation analysis, are called canonical variates. In principle components analysis, the task is to find a set of loadings to compute principle components that will explain the most variance in the set of variables using as few (ideally uncorrelated) components as possible. In canonical correlation analysis, the task is to find a set of loadings from each set that will create two variates that are *maximally* correlated. Interpretation of the variates proceeds in a manner that is similar to factor analysis—by looking at the item loadings on each factor. Just as in principle components analysis more than one principle component is necessary to explain the variance in a single data set, sometimes it is necessary to compute more than 1 pair of variates to explain the covariance between data sets.

First, some of the most stable MSI change scales were eliminated as dependent variables because they offered so little reliable variance to predict (Aggression, Family, Dissatisfaction with Children, and Conflict over Childrearing). The remaining MSI

Time1-Time2 change scales were paired with PMC narrow-factor process scales in a canonical correlation analysis.

The first canonical variate formed from Husband's MSI change scales did not explain a significant amount of variance in the first canonical variant formed from the 13 Time 1 PMC narrow-factor processes of change scales (Wilks' Lambda = .07,  $F(91, 127) = .74$ , *ns*) nor from the Time 2 PMC scales (Wilks' Lambda = .04,  $F(91, 127) = .99$ , *ns*). Similarly, husbands' use of processes of change at neither Time 1 (Wilks' Lambda = .03,  $F(91, 120) = 1.07$ , *ns*) nor Time 2 (Wilks' Lambda = .01,  $F(91, 120) = 1.30$ , *ns*) had a significant effect on their wives' MSI change scales.

Wives' use of change processes at Time 1 influenced their MSI change scales (Wilks' Lambda = .003,  $F(91, 114) = 1.88$ ,  $p < .01$ ). The first two canonical correlations were significant ( $R = .91$ ,  $p < .01$  and  $R = .84$ ,  $p < .05$ , respectively). Loadings on Variate 1 suggested that improvements in Global Distress and Affective Communication were effected by the use of Corrective Emotional Experience, Environmental Management, and Counterconditioning. The half of Variate 1 associated with change processes explained 11% of variance in MSI change over time. Loadings on Variate 2 suggested that helping other couples (Social Liberation) and witnessing some emotionally dramatic incidents (Dramatic Relief) was associated with worsening Global Distress and Affective Communication. Thus, people who engaged in activities like helping other couples (Social Liberation) and thinking about their marriage after witnessing some emotionally evocative portrayal of marriage in the arts (Dramatic

Relief) reported a slight decline in marital satisfaction. The half of Variate 2 associated with change processes explained an additional 6% of variance in MSI change over time.

Wives' use of change processes at Time 2 influenced their MSI change scales (Wilks' Lambda = .003,  $F(91, 108) = 1.91, p < .01$ ). The first two canonical correlations were significant ( $R = .94, p < .01$  and  $R = .87, p < .05$ , respectively). Loadings on Variate 1 suggested that improvements in Finances and Role Orientation were effected by the use of a combination of Education, Dramatic Relief, and Social Liberation, perhaps what might be called an intellectually and emotionally open engagement with the world. The half of Variate 1 associated with change processes explained 13% of variance in MSI change over time. Loadings on Variate 2 suggested that Self-Liberation, Social Reevaluation, and Environmental Management at Time 2 were accompanied by worsening Problem-Solving Communication. The half of Variate 2 associated with change processes explained an additional 10% of variance in MSI change over time.

Overall, the support for Hypothesis 1 is modest at best. It is unclear why husbands' use of change processes had no apparent effect on their wives or their own marital satisfaction.

*Hypothesis 2: Couples using change processes that match their stages of change will change more than couples using change processes not matched to their stages of change.* This hypothesis could only be tested with the Community sample. Essentially, Hypothesis 2 suggests that Consciousness Raising, Catharsis, and Reevaluation become less effective as couples move along the stages of change and that Choosing, Conditional Stimuli, and Contingency Control become more effective as couples move along the

stages of change. These hypotheses were tested using cross-product regression (Aiken & West, 1991) with the second part of the RMC (which measures the stage of change in each of the domains covered by the clinical scales of the MSI), the PMC, and the interaction term predicting change in the relevant MSI scales. Overall, Hypothesis 2 did not receive strong support. Several regression analyses with significant stage x process interaction terms were supportive of Hypothesis 2 including:

1. Consciousness Raising Analyses

- a. Husbands' use of Consciousness Raising at Time 1 interacted marginally significantly with his stage of change for sexual issues at Time 1 ( $\beta = -.32, t(35) = -1.86, p < .10$ ) to predict changes in his MSI Sex scale. As predicted, the interaction was such that high use of Consciousness Raising at Time 1 was neutral for men at lower stages of change but predicted negative changes in the MSI Sex scale for husbands at higher stages.
- b. Husbands' use of Conflict over Childrearing at Time 1 interacted marginally significantly with his stage of change for childrearing issues at Time 1 ( $\beta = -.42, t(35) = -1.98, p < .10$ ) to predict changes in his MSI Conflict over Childrearing scale. As predicted, the interaction was such that high use of Consciousness Raising at Time 1 was neutral for men at lower stages of change but predicted negative changes in the MSI Conflict over Childrearing scale for husbands at higher stages.

- c. Wives' use of Consciousness Raising at Time 2 interacted significantly with her stage of change for financial issues at Time 2 ( $\beta = -.39$ ,  $t(35) = -2.38$ ,  $p < .05$ ) to predict changes in her MSI Finances scale. As predicted, the interaction was such that high use of Consciousness Raising at Time 2 was neutral for women at lower stages of change but predicted negative changes in the MSI Finances scale for wives at higher stages.
- d. Wives' use of Consciousness Raising at Time 1 interacted significantly with her stage of change for financial issues at Time 1 ( $\beta = .45$ ,  $t(35) = 2.05$ ,  $p < .05$ ) to predict changes in her MSI Sex scale. The opposite of what was predicted, the interaction was such that high use of Consciousness Raising at Time 1 was neutral for women at lower stages of change but predicted positive changes in the MSI Sex scale for wives at higher stages.

## 2. Catharsis Analyses

- a. Husbands' use of Catharsis at Time 2 interacted marginally significantly with his stage of change for childrearing issues at Time 2 ( $\beta = .51$ ,  $t(35) = 1.84$ ,  $p < .10$ ) to predict changes in his MSI Time Together scale. The opposite of what was predicted, interaction was such that high use of Catharsis at Time 2 was neutral for men at lower stages of change but predicted positive changes in the MSI Sex scale for husbands at higher stages.



- b. Wives' use of Catharsis at Time 1 interacted significantly with her stage of change for financial issues at Time 1 ( $\beta = .45, t(35) = 2.05, p < .05$ ) to predict changes in her MSI Finances scale. The opposite of what was predicted, the interaction was such that high use of Catharsis at Time 1 was neutral for women at lower stages of change but predicted positive changes in the MSI Finances scale for wives at higher stages.
- c. Wives' use of Catharsis at Time 1 interacted marginally significantly with her stage of change for roles and expectations issues at Time 1 ( $\beta = .35, t(35) = 1.73, p < .10$ ) to predict changes in her MSI Role Orientation scale. The opposite of what was predicted, the interaction was such that high use of Catharsis at Time 1 was neutral for women at lower stages of change but predicted positive changes in the MSI Role Orientation scale for wives at higher stages.
- d. Wives' use of Catharsis at Time 2 interacted significantly with her stage of change for anger management and avoiding physical aggression issues at Time 2 ( $\beta = .35, t(35) = 1.73, p < .05$ ) to predict changes in her MSI Aggression scale. The interaction was such that high use of Catharsis at Time 2 was slightly positive for women at lower stages of change but predicted negative changes in the MSI Aggression scale for wives at higher stages.

### 3. Choosing Analyses

- a. Husbands' use of Choosing at Time 2 interacted significantly with his stage of change for childrearing issues at Time 2 ( $\beta = -.54$ ,  $t(35) = -2.30$ ,  $p < .05$ ) to predict changes in his MSI Conflict over Childrearing scale. As predicted, the interaction was such that high use of Choosing at Time 2 was neutral for men at lower stages of change but predicted negative changes in the MSI Conflict over Childrearing scale for husbands at higher stages.
- b. Wives' use of Choosing at Time 1 interacted significantly with her stage of change for problem-solving communication issues at Time 1 ( $\beta = .37$ ,  $t(35) = 2.03$ ,  $p < .05$ ) to predict changes in her MSI Problem-Solving Communication scale. The opposite of what was predicted, the interaction was such that high use of Choosing at Time 1 was neutral for women at lower stages of change but predicted positive changes in the MSI Problem-Solving Communication scale for wives at higher stages.
- c. Wives' use of Choosing at Time 2 interacted marginally significantly with her stage of change for anger management and avoiding physical aggression issues at Time 1 ( $\beta = .35$ ,  $t(35) = -1.77$ ,  $p < .10$ ) to predict changes in her MSI Aggression scale. As predicted, the interaction was such that high use of Choosing at Time 1 was neutral for women at lower stages of change but predicted negative changes in the MSI Aggression scale for wives at higher stages.

#### 4. Reevaluation Analyses

- a. Husbands' use of Reevaluation at Time 1 interacted significantly with his stage of change for problem-solving communication issues at Time 1 ( $\beta = -.35, t(35) = 2.13, p < .05$ ) to predict changes in his MSI Problem-Solving Communication scale. The opposite of what was predicted, the interaction was such that high use of Reevaluation at Time 1 was neutral for men at lower stages of change but predicted positive changes in the MSI Problem-Solving Communication scale for husbands at higher stages.
- b. Husbands' use of Reevaluation at Time 2 interacted significantly with his stage of change for childrearing issues at Time 2 ( $\beta = -.48, t(35) = -2.20, p < .05$ ) to predict changes in his MSI Conflict over Childrearing scale. As predicted, the interaction was such that high use of Reevaluation at Time 2 was neutral for men at lower stages of change but predicted negative changes in the MSI Conflict over Childrearing scale for husbands at higher stages.
- c. Wives' use of Reevaluation at Time 1 interacted marginally significantly with her stage of change for roles and expectations issues at Time 1 ( $\beta = .35, t(35) = 1.73, p < .10$ ) to predict changes in her MSI Role Orientation scale. The opposite of what was predicted, the interaction was such that high use of Reevaluation at Time 1 was neutral for women at

lower stages of change but predicted positive changes in the MSI Role Orientation scale for wives at higher stages.

#### 5. Conditional Stimuli Analyses

- a. Husbands' use of Conditional Stimuli at Time 1 interacted marginally significantly with his stage of change for leisure time together issues at Time 1 ( $\beta = -.30, t(35) = -1.88, p < .10$ ) to predict changes in his MSI Time Together scale. The opposite of what was predicted, the interaction was such that high use of Conditional Stimuli at Time 1 was somewhat positive for men at lower stages of change but predicted negative changes in the MSI Time Together scale for husbands at higher stages.
- b. Husbands' use of Conditional Stimuli at Time 1 and at Time 2 interacted significantly with his stage of change for sexual issues at Time 1 ( $\beta = -.37, t(35) = -2.05, p < .05$ ) and at Time 2 ( $\beta = -.60, t(35) = -2.83, p < .01$ ), respectively, to predict changes in his MSI Sex scale. The opposite of what was predicted, the interaction was such that high use of Conditional Stimuli at Time 1 was neutral for men at lower stages of change but predicted negative changes in the MSI Sex scale for husbands at higher stages.
- c. Husbands' use of Conditional Stimuli at Time 1 interacted significantly with his stage of change for childrearing issues at Time 1 ( $\beta = -.48, t(35) = -2.20, p < .05$ ) to predict changes in his MSI Conflict over Childrearing scale. The opposite of what was predicted, the interaction

was such that high use of Conditional Stimuli at Time 1 was neutral for men at lower stages of change but predicted negative changes in the MSI Conflict over Childrearing scale for husbands at higher stages.

#### 6. Contingency Control

- a. Husbands' use of Contingency Control at Time 1 interacted significantly with his stage of change for leisure time together issues at Time 1 ( $\beta = -.35, t(35) = -2.15, p < .05$ ) to predict changes in his MSI Time Together scale. The opposite of what was predicted, the interaction was such that high use of Contingency Control at Time 1 was somewhat positive for men at lower stages of change but predicted negative changes in the MSI Time Together scale for husbands at higher stages.
- b. Wives' use of Contingency Control at Time 1 interacted significantly with her stage of change for roles and expectations issues at Time 1 ( $\beta = .65, t(35) = 2.38, p < .05$ ) to predict changes in her MSI Role Orientation scale. The opposite of what was predicted, the interaction was such that high use of Contingency Control at Time 1 was neutral for women at lower stages of change but predicted positive changes in the MSI Role Orientation scale for wives at higher stages.
- c. Wives' use of Contingency Control at Time 2 interacted significantly with her stage of change for childrearing issues at Time 2 ( $\beta = .53, t(35) = 2.62, p < .05$ ) to predict changes in her MSI Conflict over Childrearing scale. As predicted, the interaction was such that high use of

Contingency Control at Time 2 was negative for women at lower stages of change but predicted positive changes in the MSI Conflict over Childrearing scale for wives at higher stages.

*Hypothesis 3: Couples in earlier stages of change will make fewer positive changes than couples at higher stages of change.* This hypothesis was tested with the community and seminar samples merged. Correlations of stages of change in specific MSI-related domains with the appropriate Time 1 – Time 2 MSI change scales are presented in Table 21. Of the 72 correlations in Table 19, 14 (19%) were significant, providing mild support for Hypothesis 3. An examination of Table 18 will show that not only did stage of change predict increased satisfaction for oneself, but it also predicted increases in satisfaction for one's spouse in some cases. Of all the MSI scales, Problem-Solving Communication was the most consistently amenable to influence by readiness to change (mean  $r = .25$ ). That is, people who stated that they intended to change aspects of problem-solving communication, tended to increase their satisfaction with their problem-solving communication at Time 2. Least amenable to change via change intentions were satisfaction with Affective Communication (mean  $r = .05$ ), Aggression (mean  $r = .01$ ) and Role Orientation (mean  $r = .01$ ).

*Hypothesis 4: Couples with partners in different stages of change will make fewer positive changes than couples with partners in the same stage of change.* Data from both groups were used for this hypothesis. The absolute value of the difference between the couples' stage of change in each of the MSI-related domains was the predictor of couples' improved satisfaction in the relevant MSI scales in a multivariate

Table 21

*Correlations between Changes in MSI Scales and Stage of Change in MSI-Matched Domains (n=70)*

MSI Scale	Rater of Stage of Change			
	Husbands		Wives	
	Time 1	Time 2	Time1	Time2
	Change in Husbands' Marital Satisfaction			
GDS	.16	.21	.19	.20
AFC	-.07	-.02	.10	-.03
PSC	.23	.22	.31*	.39**
AGG	.14	.04	-.07	-.08
TTO	.12	.20	.18	.36**
FIN	.32*	.09	.04	.29
SEX	.28*	.09	.12	.09
ROR	.17	-.14	.01	.02
CCR	.19	.33	.19	.42**

Table 21 Continued

MSI Scale	Rater of Stage of Change			
	Husbands		Wives	
	Time 1	Time 2	Time1	Time2
Change in Wives' Marital Satisfaction				
GDS	.18	.13	.39**	.52**
AFC	.16	.02	.05	.20
PSC	.21	.21	.16	.29*
AGG	.07	.11	-.13	-.02
TTO	.19	.08	.17	.35**
FIN	.46**	.00	.17	.14
SEX	.24	.27*	.29*	.10
ROR	.08	-.06	-.04	.04
CCR	.24	-.03	.38*	.14

*Note.* \*  $p < .05$   
\*\*  $p < .01$



analysis (i.e., stage of change difference scores simultaneously predicting both husband and wife MSI changes). None of the expected relations were significant. Hypothesis 4 was not supported.

*Hypothesis 5: Couples in precontemplation and contemplation stages will rate action-oriented exercises as less helpful than awareness-oriented exercises. The reverse pattern will be observed in couples in the action and maintenance stages.* This hypothesis was tested with the Seminar group data only. In the relationship seminar, a new topic was presented each week with couples participating in exercises related to that topic. Each topic can be classified as more “Awareness-Oriented” or more “Action-Oriented.” The Awareness-Oriented topics were “Attributions in Relationships”, “Family-of-Origin Issues”, “Forgiveness and Relationship Repair”, and “Sex and Intimacy.” The Action-Oriented topics were “Behavior Exchange”, “Affective Communication Skills”, “Problem-Solving Communication Skills”, and “Strategic Planning and Relationship Goals.” Composite ratings of topic helpfulness were computed for Awareness Topics and Action Topics for each spouse. A difference score (Awareness – Action) was computed to measure the tendency to rate Awareness exercises as more helpful. Correlations between this difference score and the RMC Composite score were not significant for husbands ( $r = -.04, ns, N = 46$ ) or wives ( $r = .19, ns, N = 46$ ). Thus, hypothesis 5 was not supported.

## CHAPTER V

### SUMMARY AND DISCUSSION

The Transtheoretical Model of Change is intended as a general model of change with great potential for couple therapy. It offers a comprehensive taxonomy of change processes and specific recommendations about which processes will work best and how they should be sequenced. One of the dangers that a comprehensive model of change faces is that it becomes so difficult to falsify that it remains a “Big Idea” instead of a substantive and practical theory. A strong test of a model’s generality is to apply it to populations and problems that are qualitatively different from the populations and problems with which the model was originally tested. The current study can be regarded as a step toward gathering supportive and falsifying evidence for the Transtheoretical Model of Change’s predictive and prescriptive utility.

The Readiness for Marital Change Questionnaire (RMC) did not have the hypothesized 4-factor structure (Precontemplation, Contemplation, Action, and Maintenance). Instead, it had a 3-factor structure (Need for Change, Action vs. Inaction, and Denial of Responsibility for Change). One could ask, given the labels that have been given these factors, is Need for Change the same as Contemplation, Action vs. Inaction the same as Action, and Denial of Responsibility for Change the same as Precontemplation? The evidence from this study suggests otherwise.

The Need for Change factor emerged because people who score high on Action and Maintenance also tend to score high on Contemplation and low on Precontemplation. That is, once someone begins actively working on a marital problem,

one does not stop thinking about changing or acknowledging that change is needed. Thus, the Need for Change factor discriminates between Precontemplation and the other stages.

The Action vs. Inaction factor appears to separate Precontemplation and Contemplation from Action and Maintenance. The Denial of Responsibility factor appears to distinguish between 2 types of Precontemplation: the untroubled and the unwilling.

The RMC Maintenance items were so closely related to the Action items that they did not emerge as a separate factor. Perhaps couples saw every action to improve the marriage as also a preventative action. The difficulty of operationalizing the Maintenance stage with a single score on the RMC suggests that, if the Maintenance “stage” is a valid concept, perhaps it is not a single thing but a pattern of things. Specifically (and speculatively), perhaps the Maintenance stage is simply a pattern of high activity (i.e., high use of change processes) with low current need for change.

The 2 processes of change measures were internally consistent with structures that were generally consistent with expectations. The Levels by Processes of Marital Change Questionnaire (LPMC) was disappointing because the Levels of Change facet did not contribute to any discernable aspect of the measure’s structure. The Transtheoretical Model of Change’s distinction between active and awareness processes was supported. The general use of change processes was not directly related to marital distress. However, once the level of need for change in the marriage was controlled, the use of change processes was associated with less marital distress. Analogously, the use

of Aspirin might have a slight positive correlation with being in a grumpy mood but Aspirin's partial correlation with grumpiness is probably negative after controlling for headache pain.

Although the use of change processes did have a relationship with marital satisfaction, the evidence that change processes produced change in marital satisfaction was mixed. Husbands' use of change processes was unrelated to change in their own or their wives' marital satisfaction. It is unclear why wives' use of change processes would produce change in their own and their husbands' marital satisfaction but husbands' use of change processes had so little effect, especially in light of the fact that husbands did not report lower use of change processes than their wives. It seems rather unlikely that there is nothing a husband can do to improve the marriage. Thus, this investigation's failure to find significant results may represent a Type II error. Nevertheless, perhaps husbands' actions have less influence over change in the relationship than do wives' actions. These results parallel repeated findings by Gottman and colleagues that wives tend to exert considerably more emotional, behavioral, and even physiological influence on the course of relationship than their husbands. Ironically, one of the primary ways in which husbands do influence the relationship is by *accepting or rejecting* their wives' influence. Wives' tendency to reject husbands' influence had little effect on relationship satisfaction (Gottman, Driver, & Tabares, 2002).

The hypothesis that stage-matched change processes will produce more change was weakly supported. In particular, consciousness-raising (i.e., education and interpersonal feedback) became less helpful at higher stages of change. In contrast to the

Transtheoretical Model of Change's predictions, Catharsis (Corrective Emotional Experience and Dramatic Relief) generally produced greater benefits at higher stages of change, Reevaluation became more helpful at higher stages of change and Conditional Stimuli was more helpful at lower stages of change. Choosing and Contingency Control did not show any consistent pattern of interactions with stages of change.

Other hypotheses that failed to receive support include the finding that couples in the seminar group did not show the expected preferences for action vs. awareness exercises according to their stage of change. The notion that couples at similar stages of change are more likely to make gains over time was not supported.

As predicted, it appears that couples at higher stages of change made more gains in marital satisfaction than couples at lower stages of change. This finding was particularly strong in the domain of problem-solving communication, suggesting that couples wishing change might choose to work on their communication skills, a domain over which they have much control, as a logical first step.

#### *Limitations of the Present Study*

The present study has some interpretive limitations that suggest directions for future research. The use of 2 small convenience samples limits both the reliability and generalizability of the findings. Low power due to sample size, use of change scores (change scores generally have much lower reliability than either of their component scores) may explain the failure of several hypotheses to receive support. It is possible the 2-month time frame over which change in marital satisfaction is too short for reliable effects to be detected.

Part of the failure to support some of the Transtheoretical Model of Change's predictions may have been due to the operationalization of some of the concepts. In retrospect, some of the processes of change scales seem to lack validity, especially the action-oriented scales. For example, Environmental Management (i.e., operant conditioning used on the self) was measured with items such as "My spouse responded negatively to something I did in order to change what I was doing." At face value, this measures the behavioral concept of "positive punishment" but a research participant is unlikely to respond to the abstract structure (e.g., "How often did my spouse present a stimulus to reduce the frequency of my behavior?") but is likely to think of instances when the partner was mean or rude. Future studies of complex change processes (particularly those associated with behaviorism) may have to use trained interviewers to assess couples' use of these processes. Measurement of change processes may have to occur on a more contextualized and less abstract level. For example, instead of the Reevaluation item "I tried to see some of my actions toward my spouse in a different, more helpful light." the participants could be given an instruction such as: "List all new insights you've had in the past month, if any, about how your approach to solving problems affects your relationship."

A serious limitation of the current study is that use of change processes was measured only in the community sample. It is not clear whether relations between readiness for change and change processes as they occur "naturally" are relevant to the use of change processes in couple therapy. For example, precontemplation outside of therapy is almost certainly different from precontemplation in therapy. The former

probably is associated with marital satisfaction whereas the latter is probably associated with defensiveness.

It remains to be demonstrated that the negative effects of Consciousness Raising at higher levels of readiness to change observed in this study would be observed in therapy. Perhaps the use of Consciousness Raising is desirable in the early stages of change, when couples do not understand their problems, are not motivated to confront them, or are too defensive to acknowledge them. As the problems are identified and are actively resolved, high use of Consciousness Raising may become a less desirable change process in therapy. It remains to be demonstrated that the negative effects of Consciousness Raising at higher levels of readiness to change observed in this study would be observed in therapy. Perhaps the use of Consciousness Raising is desirable in the early stages of change, when couples do not understand their problems, are not motivated to confront them, or are too defensive to acknowledge them. As the problems are identified and are actively resolved, high use of Consciousness Raising may become a less desirable change process in therapy. However, in the maintenance stage of change, when the initial crises have been quelled, the therapeutic relationship is well established, and the relationship healing process is underway, it is possible that Consciousness Raising as the principal change process in the affective reconstruction of developmental injuries and vulnerabilities that would otherwise interfere with the long-term viability of the relationship (Snyder & Schneider, 2002).

It is difficult to apply some of the ideas of the Transtheoretical Model of Change to couples. For example, it is unlikely that precontemplation of relationship change has

all of the same connotations as precontemplation of substance abuse change. Changing one's substance abuse behavior is nearly always a positive thing and thus precontemplation is associated with negative behaviors and traits. Changing one's relationship is not necessarily a positive thing. Precontemplation was, in this sample, associated with happy rather than distressed relationships. It was only when change was acknowledged as necessary that precontemplation was associated with greater marital distress. One of the forms of acknowledging the desirability for change without having the intention to change is to state that the responsibility for change is on one's spouse. This form of precontemplation is not anticipated by the Transtheoretical Model of Change. It is not clear which change processes should best move people out of this type of precontemplation. Certainly, there are many possible variations of this kind of precontemplation and the best course of action would vary. One example might be a couple that has lost all empathy for each other have adopted defensive postures. In such a case, communication skills training may be effective because it represents a combination of several change processes: It is a form of *education* that enhances couples' ability to give each other more effective *feedback* which may induce *reevaluation* which, in turn, may prompt active change processes.

#### *Possible Applications*

Secondary prevention interventions for couples could make use of the Transtheoretical Model of Change by explicitly incorporating the full range of change processes. For example, the secondary prevention group from which the clinical sample of this study was drawn made explicit use of Consciousness Raising, Contingency



Control, and Reevaluation but overlooked the possibilities of using Catharsis. Illustrating common relationship concerns with well-chosen scenes from emotionally evocative films might facilitate couples' desire for change much more powerfully than abstract discussion of those same concerns.

In the secondary prevention group, some couples (in the Action stage) used every exercise as an opportunity to work on their relationship whereas others (in the earlier stages of change) floundered or were too unskilled to even make use of the exercises. The Transtheoretical Model of Change suggests that flexibility be built into the exercises to accommodate couples at different stages of change for different issues. For example, if the couples are to practice emotional expression skills, several discussion topics could be offered as options, from non-threatening discussions of pleasant memories, to exploratory discussions of relationship discord, to a focused airing of concerns about current efforts to improve the relationship.

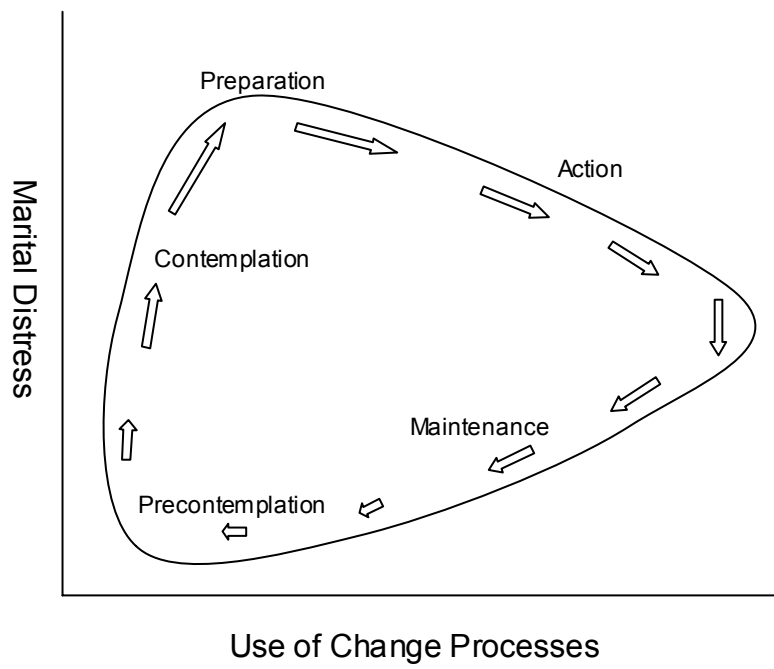
#### *Future Directions of Current Research*

Currently, the Transtheoretical Model of Change lacks the ability to explain the dynamic fluidity of the relations between couples' desires, intentions, and efforts to change. As a first step to rectify these omissions, and by way of inspiration from Gottman, Murray, Swanson, Tyson, and Swanson (2002), Precontemplation, Contemplation, Preparation, Action, and Maintenance can be reconceptualized as phases in the dynamic interplay between current marital distress and use of change processes, with marital distress analogous to "prey" and change processes as "predator." (See

Figure 4.) Precontemplation is thus conceptualized as an unstable steady state in which there is low distress and a low use of change processes. Any perturbation in the system will increase distress and contemplation of taking action will begin. Preparation is the threshold at which marital distress precipitates taking action. The level of distress necessary to precipitate action probably depends on self-efficacy of change. The Action stage is conceptualized as a state in which distress is declining due to use of change processes. Maintenance is when distress has abated due to the use of change processes but use of change remains high.

#### *Concluding Comments*

This study could not possibly test the hundreds of hypotheses that could be derived from application of the Transtheoretical Model of Change to couple functioning. This study can be conceptualized as a pilot study to test whether more effort should be invested in this line of research. Although some of the hypothesized findings were observed, the majority were not. Future research should first refine the measures of Transtheoretical constructs, especially the change processes. Second, future studies should narrow its focus, test a few hypotheses well, and proceed slowly but with confidence. Third, although the naturalistic study of couples' change processes in community samples may be interesting in its own right, the promise of the Transtheoretical Model of Change lies with studies with couples needing help. Studies in which the sequencing of interventions is manipulated according to the recommendations of the Transtheoretical Model of Change would likely yield particularly useful information for couple therapists.



*Figure 4.* Dynamics of marital distress, use of change processes, and stages of change.

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## APPENDIX A

## Readiness for Marital Change Questionnaire, Part 1

Precontemplation Items

We do not have marital problems.  
Making changes in our marriage would have little purpose.  
At this point, it is more up to my spouse to improve our marriage than it is up to me.  
I have little motivation to change our marriage right now.  
I do not spend much time thinking about changing our marriage.  
There is little need to think about improving our marriage.  
There is little need for me to change my behavior toward my spouse.  
My spouse wants more changes in our marriage than I do.  
We do not have any marital problems that need changing.  
My spouse needs to change more than I do.  
My spouse exaggerates our marital problems.

Contemplation Items

I need to think about making changes in our marriage.  
I think that we should make some changes in our marriage.  
I have been thinking about things I could do to improve our marriage.  
We have some marital problems that I should work on.  
For now, I am just exploring options to make changes in our marriage.  
I should make a plan to improve our marriage.  
Improving my marriage has been on my mind.  
I need to make changes in our marriage.  
Sometimes the way I relate to my spouse hurts our marriage.

Action Items

I am doing something about the marital problems that bother me.  
My behavior in our marriage is causing problems and I am doing something to change it.  
We have marital problems and I have begun to work on them.  
Anyone can talk about improving their marriage, but I am actually doing something about it.  
I am working on my marriage more than I used to.  
I have been working at changing my behavior toward my spouse.  
I have put my plans to improve our marriage into action.  
I am actively trying to resolve some long-standing problems in our marriage.  
I have already begun to make changes in our marriage.  
I have recently been putting more effort into my marriage than I usually do.

Maintenance Items

I am working hard to maintain improvements to our marriage.

I am working on preventing problems from returning to our marriage.

I worry that we might slip back into old marital patterns that we had already changed.

I am working to keep old marital problems from returning.

Our marriage is mostly free of problems and I want to work at keeping it that way.

We had problems in our marriage, but I worked hard to resolve them.

I am working to avoid slipping back into old conflicts with my spouse.

I have recently resolved a longstanding marital concern.

I want to keep previous marital conflicts from coming back.

In the past year, I have been able to resolve an important problem in our marriage.

## Readiness for Marital Change Questionnaire, Part 2

When considering each set of issues, which of the following statements BEST applies:

- A. I do not intend to make any changes.
- B. I am thinking about making changes but I have not made any specific decisions yet.
- C. I am getting ready to make some specific changes.
- D. I am actively making specific changes.
- E. I have recently made changes and I am working to prevent problems from returning.

1. Issues related to how my partner and I *spend our leisure time together*.
2. Issues related to how we *communicate while solving problems*.
3. Issues related to how we *communicate our affection*.
4. Issues related to how we *handle our finances*.
5. Issues related to *sex with my partner*.
6. Issues related to *roles and expectations my partner and I have for each other*.
7. Issues related to *managing our anger and avoiding physical aggression*.
8. Issues related to *how we raise our children (omit if not applicable)*.
9. Issues related to *my overall satisfaction with my marriage*.

### Readiness for Marital Change Questionnaire, Part 3

Circle the word that indicates how *confident* are you that you will be able to resolve the kinds of current relationship problems or relationships problems described below. If you are not having any problems in a specific area, rate your confidence that you could resolve the problem if it occurred some time in the future.

- A. Discouraged
- B. Not Confident
- C. Uncertain
- D. Confident
- E. Very Confident

Items were the same as Part 2.



## APPENDIX B

## Processes of Marital Change Questionnaire

Education

I read a book or an article about improving my marriage.

I listened to a relationship expert talk about marriage.

I listened to a community or religious leader (priest, rabbi, minister, etc.) talk about marriage.

I spent some time educating myself about marriage.

Feedback

I listened to friends or family members about improving my marriage.

I listened carefully to my partner in order to learn more about our relationship.

Friends or family members gave me their observations about how my relationship seems to be going.

Friends or family members gave me insight about my marriage.

Dramatic Relief

Statistics about high divorce rates and unhappy marriages affected me emotionally so that I wanted to improve my marriage.

Dramatic portrayals (on television, movies, or some other art form) of other people's marriages moved me emotionally so that I wanted to change my marriage.

Observing other couples interact moved me emotionally to improve my marriage.

Watching people other than couples (for example, children, families, single people) moved me emotionally to make some changes in my marriage.

Corrective Emotional Experience

Viewing an important emotional event in someone else's relationship had a positive effect on the way I view my own relationship.

An emotional event in my life had a positive effect on my relationship.

A positive emotional interaction with my spouse changed some part of our relationship for the better.

A negative emotional interaction with my spouse changed some part of our relationship for the better.

Helping Relationship

I was open with at least one person (other than my spouse) about my experience of being married.

I had someone (other than my spouse) I could count on to help me if I were to have problems with my marriage.

I had someone (other than my spouse) who listened when I needed to talk about my marriage.

I felt supported in my marriage by at least one person (other than my spouse).

Self Reevaluation

I tried to see some of my partner's actions toward me in a different, more helpful light.

I pondered how roles my partner and I play in our relationship affect me.

I tried to think more realistically about my expectations for myself in my relationship.

I became more aware of the effects of some of my partner's actions toward me.

Social Reevaluation

I tried to see some of my actions toward my spouse in a different, more helpful light.

I pondered how roles my partner and I play in our relationship affect my partner.

I tried to think more realistically about my expectations for my partner in my relationship.

I became more aware of the effects of some of my actions toward my spouse.

Self Liberation

I told myself that I could choose to improve my relationship.

I made commitments to improve my relationship.

I decided to make changes in my relationship.

I became aware of new options I could choose to make my marriage better.

Social Liberation

I participated in religious, community or political activities that might improve the relationships of couples in my community.

I tried to help another person with his or her marriage.

I noticed new options in my community or circle of friends that might help couples have better marriages.

I did something that might help other couples in my community.

Stimulus Control

I removed things around the house or work that might have a negative impact on my marriage.

I purposefully avoided places or people that might have a negative impact on my marriage.

I put things around the house or work that might have a positive impact on my marriage.

I purposefully went to places or associated with people that might have a positive impact on my marriage.

Counterconditioning

I purposefully engaged in another activity to avoid doing or saying something that might hurt my relationship.

If negative thoughts about my partner came to my mind, I thought about something else.

To improve my marriage, I changed the way usually I respond to something my partner does.

To improve our relationship, my partner and I changed at least one way we usually react to each other.

### Self Management

I rewarded myself for making changes in my relationship.

I rewarded my partner (with praise, gifts, or other positive behaviors) to change some of his or her behavior.

I stopped responding to something my spouse did in order to change some part of his or her behavior.

I responded negatively to something my partner did, attempting to change his or her behavior.

### Environmental Management

My spouse rewarded me (with praise, gifts, or other positive behaviors) for changing some of my behavior.

My spouse stopped responding to something I did in order to change the way I was acting toward him or her.

My spouse responded negatively to something I did in order to change what I was doing.

People (other than my spouse) responded differently to me in order to change some part of my marriage.

## APPENDIX C

## Levels by Processes of Marital Change Questionnaire

Education

I tried to learn about how my behavior affects our relationship.

I tried to learn about how my thoughts and expectations affect my relationship.

I tried to learn about how the way I disagree or argue with my partner affects my relationship.

I tried to learn about how our family (our own children, our parents, our siblings, and other relatives) affects our relationship.

I tried to learn about how conflicts within myself affect our relationship.

Feedback

I listened to others about how my behavior affects our relationship.

I listened to others about how my thoughts and expectations affect my relationship.

I listened to others about how the way I disagree or argue with my partner affects my relationship.

I listened to others about how our family (our own children, our parents, our siblings, and other relatives) affects our relationship.

I listened to others about of how conflicts within myself affect our relationship.

Helping Relationship

Someone I trust helped me change my behaviors that affect my relationship.

Someone I trust helped me think about my relationship in more helpful ways.

Someone I trust helped to resolve disagreements or conflicts between my partner and me.

Someone I trust helped me cope with family matters that affect my relationship.

Someone I trust helped me cope with conflicts within myself that affect our relationship.

Catharsis

Observing an emotional situation (in real life, a book, a movie, or other form of drama) motivated me to change my behavior in my relationship.

Observing an emotional situation (in real life, a book, a movie, or other form of drama) motivated me to change the way I think about my relationship.

Observing an emotional situation (in real life, a book, a movie, or other form of drama) motivated me to change the way that I resolve conflicts with my partner.

Observing an emotional situation (in real life, a book, a movie, or other form of drama) motivated me to change the way that I cope with family relationship patterns that affect my relationship.

Observing an emotional situation (in real life, a book, a movie, or other form of drama) motivated me to resolve conflicts within myself that affect our relationship.

Self Reevaluation

I thought about the impact of my relationship behavior on my own life.

I thought about the impact of my relationship thinking style on my own life.

I thought about the impact of the way my partner and I resolve conflicts on my own life.

I thought about the impact of my relationship interaction style on my own life.

I thought about the impact of conflicts within myself on my own life.

Social Reevaluation

I thought about the impact of my relationship behavior on my partner.

I thought about the impact of my relationship thinking style on my partner.

I thought about the impact of my conflict resolution style on my partner.

I thought about the impact of our family interaction style on my partner.

I thought about the impact of conflicts within myself on my partner.

Self Liberation

I chose to change the way I act in order to improve my relationship.

I chose to change the way I think in order to improve my relationship.

I chose to change the way I resolve conflicts in order to improve my relationship.

I chose to change the way I interact with family members in order to improve my relationship.

I chose to change the way I handle conflicts within myself in order to improve my relationship.

Social Liberation

I worked to help other couples change their behavior toward each other.

I worked to help other couples learn more helpful ways of thinking about their relationships.

I worked to help other couples learn more helpful ways of resolving conflicts.

I worked to help other couples manage family matters.

I worked to help other couples learn more helpful ways of handle conflicts within themselves.

Counterconditioning

I changed things so that negative situations do not affect my relationship so much.

I changed things so that any negative thoughts I might have do not affect my relationship so much.

I changed things so that any negative ways of resolving conflicts and disagreements between us do not affect the relationship so much.

I changed things so that any negative family relationships do not affect my relationship so much.

I changed things so that any conflicts within myself do not affect my relationship so much.

Stimulus Control

I avoided things that trigger negative behaviors or situations in my relationship.

I avoided things that trigger negative thoughts that affect my relationship.

I avoided things that trigger conflict or disagreement in my relationship.

I avoided things that trigger negative family relationships that affect my relationship.

I avoided things that trigger conflicts within myself that affect my relationship.

Contingency Management

I changed the way I respond to my partner's behaviors in order to improve my relationship.

I changed the way I respond to my own thoughts about my partner in order to improve my relationship.

I changed the way I respond to conflicts and disagreements with my partner in order to improve my relationship.

I changed the way I respond to family relationships in order to improve my relationship.

I changed the way I respond to conflicts within myself in order to improve my relationship.

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