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DEMAND-WITHDRAW COUPLE INTERACTION, DISEASE-MODEL BELIEFS,
AND READINESS TO CHANGE PROBLEM DRINKING

by

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A Dissertation Submitted to the Faculty of the

DEPARTMENT OF PSYCHOLOGY

In Partial Fulfillment of the Requirements
For the Degree of

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ABSTRACT

This study examined relationships among couple demand-withdraw interaction (DWI), alcoholics' and partners' beliefs in the disease model of alcoholism, and alcoholics' readiness to change problem drinking. A secondary purpose was to further investigate the construct validity of the University of Rhode Island Change Assessment Scale (URICA; McConaughy, Prochaska, & Velicer, 1983), a frequently used measure of readiness to change. A sample of 63 male alcoholics and their female partners received up to 20 sessions of cognitive-behavioral or family-systems therapy for alcoholism as part of a larger treatment project. The three main construct variables were assessed at baseline (T1) and after the first 12 sessions of therapy (T2) by observational ratings (DWI) and self-report questionnaires (disease-model beliefs and readiness to change). Due to a high rate of attrition from measurement at T2, analyses involving data collected at this point must be interpreted with caution. As predicted, T1 ratings of DWI were negatively associated with alcoholics' readiness to change measured concurrently at T1 and also longitudinally at T2. Also as predicted, this relationship was found primarily with the wife-demand/husband-withdraw DWI role pattern; the opposite husband-demand/wife-withdraw role pattern was largely unrelated to readiness to change. Multiple regression analyses in a panel design indicated no clear causal direction in the lagged correlations between DWI and readiness to change. Although female partners believed more strongly in the disease model of alcoholism than did alcoholics both at T1 and at T2, neither partners' nor alcoholics' disease-model beliefs were related to readiness to change or to DWI. Finally, regarding the construct validity of the URICA,

while mean levels of readiness to change increased significantly over the course of treatment, T1 and T2 measures of readiness to change were only mildly - and somewhat inconsistently - associated with treatment outcome. In all, the findings of the current study offer moderate support for the idea that an individual's readiness to change is related to interpersonal factors in his environment but only limited support for the construct validity of the URICA as a measure of readiness to change problem drinking.

INTRODUCTION

This study investigates readiness to change problem drinking in a sample of male alcoholics as a function of couple interaction and belief in the disease model of alcoholism. Recent research in the psychotherapy process area indicates that certain therapist behaviors, such as support and facilitation, seem to be associated with enhanced readiness to change and better response to treatment, while other therapist behaviors, in particular, confrontation, are predictive of lower readiness to change as evidenced by higher rates of noncompliance, stronger resistance, and poorer treatment outcome (Chamberlain, Patterson, Reid, Kavanagh, & Forgatch, 1984; Miller, Benefield, & Togan, 1993; Patterson & Forgatch, 1985). While these findings imply that client readiness to change is, at least in part, a product of ongoing interactions in the environment, these studies focus exclusively on client-therapist interaction within a treatment context, by and large ignoring the most important interactional system of clients, namely their significant others.

Research on couple interaction and the role of family-relationship factors in alcoholism, however, suggests that interactions between alcoholics and their partners may be very relevant to readiness to change problem drinking. The current study focuses on a specific type of couple interaction, demand-withdraw interaction (DWI), which occurs when one partner, usually the female, demands, criticizes, and pressures the other to change while the other partner, usually the male, withdraws and resists through passive inaction (Christensen & Shenk, 1991; Watzlawick, Beavin, & Jackson, 1967). This interaction pattern is common in distressed relationships (Christensen & Heavey, 1990,

1993) and, since alcoholics are known to have significant relationship problems (O'Farrell & Birchler, 1987), DWI is likely to occur in alcoholics' relationships with their partners, particularly when it is the male that has the drinking problem. Just as alcoholics resist a confrontive therapist, they may likewise resist a confrontive, demanding partner, engaging in increased withdrawal and passive inaction; in turn, these behaviors may be indicative of lower readiness to change.

In addition to DWI, the current study examines the beliefs alcoholics and their partners hold about the disease model of alcoholism and the relationship of those beliefs to readiness to change. Theorists have pointed out that the disease model - by positing that alcoholism is a physical illness - may externalize responsibility for problem development and resolution (Brickman et al., 1982; Marlatt, Baer, Donovan, & Kivlahan, 1988). Such attributions may have different implications for the partners and for the alcoholics themselves. A partner who believes that alcoholism is a disease may attribute less responsibility and blame to the alcoholic since he has an illness beyond his control; such attributions may be associated with the partner being less critical and demanding of the alcoholic. In turn, this lower level of demand may be associated with less withdrawal and resistance on the part of alcoholics, and perhaps higher readiness to change. On the other hand, a drinker who believes that alcoholism is a physical illness may possess less efficacy to do anything about the drinking problem, due to the externalization of responsibility implied by the disease model, and perhaps be less ready to change.

A secondary purpose of the current study is to further examine the construct validity of a commonly used measure of readiness to change, the University of Rhode

Island Change Assessment Scale (URICA; McConnaughy, DiClemente, Prochaska, & Velicer, 1989; McConnaughy, Prochaska, & Velicer, 1983) in a sample of alcoholics. While this self-report instrument possesses sound psychometric properties and has been widely used to assess stage of change in smokers and psychotherapy patients (Prochaska, DiClemente, & Norcross, 1992), only a few studies have used this instrument with alcoholics (e.g., Carney & Kivlahan, 1995; DiClemente & Hughes, 1990). Toward this end, the current study addresses key questions regarding the construct validity of the URICA, namely, does the URICA capture changes in alcoholics' readiness to change over time and does it predict treatment outcome.

In the sections that follow, the evolution of the readiness to change construct is traced and major therapeutic approaches that embody dynamic models of client motivation are reviewed. Next, the interactional view of behavior is discussed, including its importance for understanding and treating a number of disorders, such as alcohol abuse, that are increasingly being conceptualized as "family problems." The literature on demand-withdraw couple interaction is then summarized, highlighting a study by Shoham, Rohrbaugh, Stickle, and Jacob (1998) that investigated DWI as a moderator of treatment response in the same sample of alcoholics used in the current study. Next, the possible role of disease-model beliefs in readiness to change problem drinking is considered. Following this background, the purpose of the current study is presented and specific research questions are outlined.

The Construct of Readiness to Change

Client motivation or readiness to change is widely regarded as a critical component of the change process. Within the psychological treatment literature, this client attribute is described as being “of crucial importance” (Aharan, Ogilvie, & Partington, 1967; p. 486), “a major prerequisite” (Davies, 1979, p. 454), an “essential ingredient” (Korchin & Sands, 1983, p. 273), and even the “sin qua non” of successful change (Lemere, 1947, p. 261). Clinicians frequently invoke this construct to explain virtually all aspects of the treatment process, from the decision to enter therapy, to compliance with directives, to eventual outcome (Appelbaum, 1972; Miller, 1985). The significance of client readiness to change is particularly emphasized in the treatment of addictive disorders, such as alcohol abuse (Aharan et al., 1967; Carney & Kivlahan, 1995; Isenhardt, 1994; Miller, 1985, 1993; Miller, Benefield, et al., 1993; Sterne & Pittman, 1965). In fact, Heather (1992) characterizes all addictive disorders as “essentially motivational problems” (p. 829).

Although the importance of client motivation has been recognized since the initial days of psychotherapy, early models of this construct were hampered by a faulty and overly simplistic conceptualization of motivation as a relatively stable client trait. Treatment professionals regarded motivation as something a client either had or did not and they did little to enhance motivation in clients presenting for treatment. This trait model of motivation placed sole responsibility for treatment success on clients and was, as noted by some writers, little more than a resurrection of the moral model of alcoholism and psychopathology (Davis, 1979; Miller, 1985; Sterne & Pittman, 1965). As a whole, researchers working within this trait framework failed to firmly establish the expected

positive relationship between assessments of client motivation and treatment outcome (see, e.g., Aharan et al., 1967; Gillis & Keet, 1969; Kernberg et al., 1972; Lemere, O'Hollaren, & Maxwell, 1958; Orford & Hawker, 1974; Siegel & Fink, 1962; Smart & Gray, 1978; Sterne & Pittman, 1965; Wallerstein & Robbins, 1956).

More recently, Miller (1985), in his critical review of the motivation to change literature, redefined client motivation as “a dynamic interpersonal process involving therapist and environmental as well as client determinants” (p. 100) and a motivational intervention as “an operation that increases the probability of entering, continuing, and complying with an active change strategy” (p. 88). This reconceptualization of client readiness as an interpersonal state overcomes some of the limitations of the earlier trait model by emphasizing the dynamic nature of client readiness to change and by recognizing that readiness can be enhanced or hindered by ongoing interpersonal processes in the client's environment. Dynamic models of client motivation have been very influential in the psychotherapy field, particularly in the area of addictions treatment, and overall better reflect the most recent thinking about human behavior change. That is, change, both therapy-facilitated and self-initiated, is increasingly being recognized as a stage process, not an all-or-nothing phenomenon (Horn, 1976; Prochaska et al., 1992).

Stages of change and motivation. The best known stage model of change is the Transtheoretical Model developed by Prochaska and DiClemente (1982, 1983, 1986, 1992) and colleagues. Although the Transtheoretical Model is not a model of motivation per se, it does incorporate, as will be seen, motivational concepts. Briefly, the Transtheoretical Model maintains that change involves movement through five specific

stages: precontemplation, contemplation, preparation, action, and maintenance. These stages can be thought of as representing a continuum of readiness to change from not even recognizing that a problem exists to actively making and maintaining changes in the target behavior.

In the precontemplation stage, individuals do not believe they have any problem in need of changing. There is no intention on their part to change any behavior at this time or in the foreseeable future. Although such individuals are often unaware of their problems, others around them are usually very conscious of them. When precontemplators present for treatment, it is often as a result of coercion by family, friends, and/or the legal system. If precontemplators do indeed make changes during treatment, the changes are often short-lived, persisting only as long as the pressure from others. Essentially, “resistance” to recognizing the existence of a problem is the hallmark of the precontemplation stage of change. In traditional motivational terminology, precontemplators are “in denial.”

The next stage, contemplation, is marked by individuals seriously recognizing that a problem exists although they are not yet ready to do anything about it. Such individuals can remain in this stage of change for long periods of time. While in this stage, individuals weigh the pros and cons of having the problem and of doing something about it. When and if the pros of changing outweigh the cons, contemplators progress to the next stage of change.

In the preparation stage, individuals intend to take action in the very near future and may have taken unsuccessful actions in the recent past. Sometimes slight

improvements have been made, but overall effective action has not yet been taken. In Prochaska and DiClemente's early work (1982, 1983, 1986) this stage was not a stage in and of itself but rather was considered to be a specific moment or point when the decision to take action was made and was labeled "decision-making."

When individuals become ready to do something about the problem and begin to take active steps toward change, they are considered to be in the action stage. It is in this stage that individuals modify their environment and behavior in an effort to reach their desired goals. Individuals in this stage tend to receive the most recognition and support from other people in their life. Significant overt efforts to change accompanied by significant changes in the target behavior are the hallmarks of the action stage.

The fifth and final stage of change is maintenance. Individuals are considered to be in this stage when they have made changes in their lives and are concerned primarily with maintaining them. Individuals in this stage are focused primarily on preventing relapse and consolidating the changes made in the action stage. This stage is a continual process that may last for the rest of the individual's life, particularly if the problem is an addictive one (Prochaska et al., 1992).

Each stage of change is thought to represent both a period of time and a set of tasks that must be accomplished in order to advance to the next stage. Although the time spent in each stage is likely to vary from person to person and change attempt to change attempt, the tasks are considered to be invariant. In order to move into the contemplation stage, precontemplators must recognize that a problem exists and begin to see some negative aspects of the problem and consequently, some benefits to changing. In order to

move into the preparation and action stages, contemplators must decide that the benefits of change outweigh those of continuing to engage in the problematic behavior. In addition, they must possess self-efficacy to change as well as some knowledge and skills that are necessary to alter the problematic behavior. Finally, in order to maintain changes, individuals must possess relapse prevention skills. A major premise of the Transtheoretical Model is that treatment should be tailored to a client's stage of change. That is, action-oriented treatments should be reserved for clients in the preparation and action stages, while consciousness-raising and insight-oriented therapies are likely to be more effective in moving precontemplators and contemplators to these later stages of change (Prochaska et al., 1992).

Although the Transtheoretical Model possesses strong face validity and intuitive appeal, the approach as a whole has received only limited empirical support at this time. Critics question the transtheoretical nature of this model, pointing out that it lends itself better to certain treatment orientations, such as cognitive-behavioral, as well as to certain problems, such as smoking (Davidson, 1992; Orford, 1992). Some also question the notion that individuals progress in an orderly fashion through the stages (Sutton, 1996). Certainly movement through the five stages does not follow a strictly linear course. Individuals can and often do revert back to previous stages in their efforts to modify problem behavior (Prochaska et al., 1992). Additionally, there is as of yet no strong evidence that matching clients to therapies based on their stage of change results in superior treatment outcome. In fact, one recent study found that more smokers who

received a stage-mismatched intervention attempted to quit smoking than did smokers who received an intervention tailored to their stage of change (Quinlan & McCaul, 2000).

Measuring stages of change. Despite these limitations, the development of stage models such as Prochaska and DiClemente's has been hailed as the "most significant change" in the study of motivation (Isenhart, 1994, p. 463). While major premises of the Transtheoretical Model await validation, strong empirical support does exist for the stage of change construct (McConnaughy et al., 1989; McConnaughy et al., 1983). Stages of change are usually assessed by one of two self-report methods: 1) by asking the participant a series of mutually exclusive questions that place him or her into a discrete stage of change (DiClemente et al., 1991) or 2) by the University of Rhode Island Change Assessment Scale (URICA), a 32-item self-report questionnaire with sound psychometric properties (McConnaughy et al., 1989; McConnaughy et al., 1983). Stages of change have been assessed in a wide variety of client populations, including those seeking general psychotherapy (McConnaughy et al., 1989; McConnaughy et al., 1983), dealing with weight control issues (Prochaska, Norcross, Fowler, Follick, & Abrams, 1992; O'Connell & Velicer, 1988), in rehabilitation from head injury (Lam, Chan, & McMahon, 1991), and adopting an exercise program (Barke & Nicholas, 1990; Lee, 1993; Marcus, Pinto, Simkin, Audrain, & Taylor, 1994), as well as those in need of HIV prevention (Prochaska, Redding, Harlow, Rossi, & Velicer, 1994), contraceptive use (Grimley, Riley, Bellis, & Prochaska, 1993) opioid and cocaine abuse treatment (Abellanas & McLellan, 1993), smoking cessation (DiClemente & Prochaska, 1982; Prochaska &

DiClemente, 1983) and alcohol abuse treatment (Carney & Kivlahan, 1995; DiClemente & Hughes, 1990).

In one of the first studies to investigate stages of change in alcoholics, DiClemente and Hughes (1990) administered the URICA to 224 adults seeking alcoholism treatment at a community-outpatient program. They performed a cluster analysis on the four URICA subscales (precontemplation, contemplation, action, and maintenance) and identified five cluster groups: precontemplation, ambivalent, participation, uninvolved/discouraged, and contemplation. The precontemplation cluster was characterized by above-average scores on the precontemplation scale, significantly below-average scores on the contemplation scale, and slightly below-average scores on both the action and maintenance scales. Alcoholics in the ambivalent cluster had above-average scores on all four stage of change scales. The participation cluster scored below average on the precontemplation scale and above average on the remaining three stage of change scales. Alcoholics in the uninvolved or discouraged cluster obtained below-average scores on all four stage of change scales. Lastly, alcoholics in the contemplation cluster scored below average on precontemplation, significantly above average on contemplation, and slightly below average on both action and maintenance. The authors found that, while alcoholics in these five cluster groups were similar in terms of demographic characteristics, they differed significantly on measures of alcohol abuse, temptations to drink, and on self-efficacy not to drink in ways consistent with the stage of change model. For example, alcoholics in the contemplation and participation clusters reported significantly more distress about their drinking behavior than did the alcoholics

in the precontemplation cluster. In addition, the uninvolved/discouraged cluster reported the highest level of temptation to drink and the lowest level of self-efficacy to stop drinking.

In an attempt to replicate the results of DiClemente and Hughes (1990), Carney and Kivlahan (1995) obtained URICA stage of change profiles for 486 applicants for drug and alcohol treatment at a veterans hospital. They also performed a cluster analysis on the URICA scale scores and replicated four of the five profiles previously identified: precontemplation, contemplation, ambivalent, and participation. The authors reported that substance abusers in the precontemplation cluster scored lower on measures of problem severity (though mean differences were small across all clusters) and were less likely to be referred to inpatient treatment than were abusers in the other cluster groups.

Other instruments have been developed to measure client readiness to change, although many of these are quite similar to the original URICA. For example, Isenhardt (1994) used, in a preliminary study that also served to investigate the instrument's psychometric properties, the modified Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) originally developed by Miller (1991), to identify stages of change in 165 inpatient adult substance abusers. Results indicated that the scale assesses three dimensions: determination, action, and contemplation. A cluster analysis of the profiles suggested that the sample could be grouped into three meaningful subgroups: the uninvolved, ambivalent, and active. These subgroups did not differ on any demographic characteristics; however, the uninvolved group scored significantly

lower than the ambivalent and active subgroups on measures of alcohol use while these latter two subgroups showed no alcohol use differences.

Rollnick, Heather, Gold, and Hall (1992) developed what they called a “Short Readiness to Change Questionnaire” and administered it to 141 excessive drinkers identified in medical settings who were not seeking help for an alcohol problem. A principal components factor analysis revealed a clear factor structure corresponding to the precontemplation, contemplation, and action stages of change. In a subsequent study, Heather, Rollnick, and Bell (1993) investigated the predictive validity of the Short Readiness to Change Questionnaire among a sample of 174 male excessive drinkers identified by screening wards of general hospitals (they were not seeking help for an alcohol problem). The authors examined relationships between patients’ stage of change prior to discharge and changes in drinking behavior at 8-week and 6-month follow-up. Allocated stage of change was significantly related to drinking outcome and, in multiple regression analyses, remained a significant predictor of change in alcohol consumption when other possible predictors were taken into account.

In all, these studies demonstrate that stages of change can be reliably assessed in substance-abusing samples and that allocated stage of change is associated with measures of substance use in a manner consistent with what would be expected by the stage of change model. However, before the URICA scale can be recommended for general use in alcoholism research and treatment, major questions concerning its construct validity must be answered. Does allocated stage of change, as measured by the URICA, change, as alcoholics progress through treatment; i.e., do alcoholics move from precontemplation to

contemplation and/or from contemplation to action? Does allocated stage of change predict actual behavior change, such as treatment retention and reduction in drinking behavior?

The motivational enhancement approach. In addition to this work delineating motivational subtypes among substance abusers, dynamic “state” models of client motivation have also served as the impetus for developing strategies to enhance motivation in treatment. The best known of these enhancement approaches is Miller and colleagues’ “motivational interviewing” (Miller, 1983; 1985, Miller & Rollnick, 1991), a brief intervention for alcohol abuse designed to increase problem recognition and the probability that a client will enter, continue in, and comply with treatment. Motivational interviewing has been referred to as “the most important therapeutic innovation of the 1980s” (Heather, 1992, p. 829) and is based on five general principles: (1) express empathy through reflective listening; (2) develop discrepancy between the client’s goals and the current problem behavior; (3) avoid argumentation and direct confrontation; (4) roll with resistance rather than opposing it directly; and (5) support self-efficacy to change.

A number of controlled studies support the efficacy of motivational interviewing as a brief intervention for problem drinking. Bien (1991) found that patients who received only a single session of motivational interviewing prior to participation in a formal outpatient alcoholism treatment program at a veterans affairs hospital showed significantly greater reduction on drinking measures at a 3-month follow-up interview compared to randomly assigned controls who did not receive the motivational interview.

In other studies, self-referred problem drinkers that were randomly assigned to the motivational interviewing condition demonstrated significantly reduced alcohol consumption compared to no treatment controls six weeks after participating in the interview; these reductions were maintained at 12- and 18-month follow-ups (Miller et al., 1993; Miller, Sovereign, & Kresge, 1988). Brown and Miller (1993) assigned consecutive admissions for alcohol treatment at a private psychiatric hospital to receive or not to receive a two-session motivational assessment and interview. All clients received the standard alcoholism treatment package at the hospital. Those alcoholics who received the additional motivational enhancement package participated more fully in treatment, as evidenced by blind-therapist ratings, and showed significantly lower alcohol consumption at a three-month follow-up.

The results of the National Institute on Alcohol Abuse and Alcoholism's (NIAAA) Project MATCH (Matching Alcoholism Treatments to Client Heterogeneity) study also support the efficacy of the motivational enhancement approach for treating problem drinking (Project MATCH Research Group, 1997). The objective of this large-scale collaborative study was to assess the benefits of matching alcohol-dependent clients to three different treatments - Cognitive Behavioral Coping Skills Therapy, Motivational Enhancement Therapy, and Twelve-Step Facilitation Therapy - in regard to a variety of client attributes. Although few matching effects were found, the three treatments resulted in substantial and sustained reduction in drinking (it should be noted that this study is not a true efficacy study since it did not include a no-treatment control group). Additionally,

for participants obtained from outpatient treatment, higher levels of pretreatment motivation for change were associated with better outcomes.

Client-therapist interaction and readiness to change. This reconceptualization of motivation as a dynamic interpersonal state implies that a client's readiness to change can be enhanced or hindered by ongoing interactional processes in their environment. Both the Transtheoretical Model and Miller's motivational interviewing techniques offer specific strategies and approaches for therapists to adopt in order to strengthen their client's readiness to change. Indeed, a large body of literature suggests that client-therapist relationship factors account for a large proportion of variance in treatment outcome (Luborsky, Crits-Christoph, Mintz, & Auerbach, 1988; Miller, 1985; Stubbs & Bozarth, 1994; Whiston & Sexton, 1993). The following studies specifically investigated the effects of therapist style on client behavior and their findings directly support the contention that client-therapist interaction impacts readiness to change.

Patterson and colleagues conducted a series of studies investigating the relationship between therapist behavior and client noncompliance. Chamberlain et al. (1984) analyzed videotaped parent training sessions and showed that the average rate of parent noncompliant behavior was .17 responses per minute during the initial stages of treatment and that the rate increased to more than .30 responses per minute during the middle stages of treatment. This increase corresponded to a shift in therapist activity from information-gathering and relationship-building to a more directive task of confronting and attempting to alter the parents' behavior.

Patterson and Forgatch (1985) later reported the results of two studies designed to examine the immediate impact of therapist behavior on client noncompliance. The first study analyzed data from six client-therapist pairs, comparing the conditional likelihood of parent noncompliance given therapists' efforts to teach and confront with the base-rate likelihood of parent noncompliance. They found that the therapist behaviors of teach and confront were associated with significant increases in the likelihood of parent noncompliant reactions, while therapist behaviors of facilitate and support were followed by reliable decreases in client noncompliance. In the second study, the authors employed an ABAB design by having therapists switch back and forth between a directive-confrontive and a supportive-reflective style during 12-minute blocks within therapy sessions. Client resistance reliably covaried with therapist behavior, increasing during confrontational blocks and diminishing during supportive reflective blocks.

Miller et al. (1993) investigated the impact of therapist style on client outcome after a brief, two-session "motivational checkup" intervention for problem drinkers. The authors found that a directive-confrontive therapist style yielded significantly more resistance from clients than did a client-centered therapist style. This increased resistance, in turn, predicted poorer outcomes one year later. Further, the authors determined that a single therapist behavior predicted outcome one year following treatment: the more the therapist confronted, the more the client drank ($r = .65$)!

In summary, interpersonal models of motivation offer many advantages over the static trait model and have greatly increased our understanding of the behavior change process. Researchers working within this dynamic state framework have operationalized

client motivation in terms that can be reliably measured and are at work building a body of empirical studies supporting the validity of this construct. Dynamic models of readiness to change avoid blaming clients for treatment failure by removing complete responsibility for treatment success from them and placing at least partial responsibility on the professionals who have been trained to help. Most importantly, by recognizing that client motivation can be enhanced or hindered by ongoing interactional processes occurring in the client's interpersonal environment, researchers have developed therapeutic approaches with concrete strategies for enhancing client readiness to change and success in treatment.

Although acknowledging the impact of interactions on client motivation for change, the motivational enhancement approach has, to date, considered primarily client-therapist interactions within a treatment context. The most significant interpersonal network of the client, his or her partner and immediate family, has been largely ignored. Yet, the importance of this interpersonal context for understanding and treating a variety of problems, such as schizophrenia, depression, and of course alcohol abuse, is increasingly being recognized. In fact, the interpersonal and interactional processes between clients and their significant others may have as great an impact on client readiness to change as does interactions between clients and their therapists.

The Interactional Context of Behavior and Change

A large body of theoretical and a growing body of empirical work maintains that it is critical to consider clients' interpersonal networks when they present for treatment with some type of difficulty. This approach, known generally as the "systems" or "systemic"

approach, serves as the basic underlying theory of family therapy, which as a therapeutic modality embodies a wide variety of theoretical perspectives, schools, and techniques, all unified, according to Gurman and Kniskern (1981), by the core belief that “relationships are of at least as much importance in the behavior and experience of people as are unconscious events” (p. 819).

The systemic approach to treatment places primary emphasis on current, ongoing interactions between clients and their significant others. The focus is on observable behavior occurring in the present, not the intrapsychic functioning of individuals or historic “causes” of problems. The systemic approach maintains that behavior, especially problematic behavior, is best understood from the perspective of what happens between people as opposed to what occurs within them. According to the systems approach, individuals cannot be viewed or treated, and problems cannot be understood, outside the context of their most significant interpersonal relationships. The systems approach disregards traditional linear notions of causality that have dominated Western philosophy and science, preferring instead to conceptualize behavior in terms of circular causality, i.e., as a system of interactions that mutually influence each other.

The importance of the interactional context for understanding and treating a wide variety of problems is increasingly being recognized. Research in a number of diverse areas, including schizophrenia, depression, and problem drinking, demonstrates that interactional and interpersonal factors play a role in these problems. While there is as of yet no definitive proof that interactions play a primary role in the etiology of these problems and disorders (although many theoretical causal models have been proposed),

there is evidence that interpersonal interactions are relevant to problem maintenance and change.

Family interaction and schizophrenia. The interpersonal environment of schizophrenic patients has been found to impact the course of the disorder. Michael Goldstein and colleagues have conducted a series of studies on “expressed emotion” (EE), a term used to describe affective attitudes and behavior representing levels of criticism and/or emotional overinvolvement expressed by a patient’s family. Although EE is primarily measured through the coding of statements made by a relative of the schizophrenic patient during an individual interview (the Camberwell Family Interview; Vaughn & Leff, 1976), studies have demonstrated that EE ratings obtained from this interview correlate with the probability that they will be overtly expressed in actual interactions between the schizophrenic patients and their relatives (Goldstein, Rosenfarb, Woo, & Nuechterlein, 1994; Miklowitz, Goldstein, Falloon, & Doan, 1984; Miklowitz et al., 1989).

Levels of expressed emotion, indicated by statements of irritation, dislike, or resentment about the patient’s behavior and personality (criticism) in addition to markedly overconcerned, overprotective, or self-sacrificing attitudes and behavior (emotional overinvolvement) have been repeatedly found to predict relapse rates in schizophrenic patients 9 or 12 months after hospital discharge. In fact, the risk of relapse is almost four times higher when a patient returns to a family environment characterized by high levels of EE as compared to families with low EE ratings (Jenkins et al., 1986; Leff & Vaughn, 1985; Nuechterlein et al., 1986). A number of family intervention

programs have been developed to reduce the occurrence of EE by significant others in the schizophrenic patient's environment. These programs, coupled with standard medication management, have been successful overall at managing the course of the disorder and reducing the incidence of relapse (Lam, 1991).

Interpersonal factors in depression. The interpersonal and interactional context is also important in the understanding and treatment of depression. A large body of empirical literature demonstrates that depressed individuals differ from those that are not depressed on a number of interpersonal dimensions. Depressed people exhibit impaired social skills and major social deficits, including inadequate social problem-solving skills, dysfunctional interpersonal cognitions, inadequate verbal and nonverbal communication skills, and general social passivity (Clarkin, Haas, & Glick, 1992; Dobson & Dobson, 1981; Fisher-Beckfield & McFall, 1982; Hammen, Jacobs, Mayol, & Cochran, 1980; Sanchez & Lewinsohn, 1980). Additionally, interactions with depressed people have been shown to elicit negativity and hostility in others, even if the depressed person is an unknown stranger (Coyne, 1976; Gurtman, 1986).

Interestingly, close interpersonal relationships seem to offer some protection against developing depression. Brown and Harris (1978) found that the presence of at least one close intimate relationship decreases a woman's risk of becoming depressed. Married individuals are also at a lower risk for depression, even when known risk factors such as gender and life stress are controlled (Pearlin & Johnson, 1977). The beneficial effects of relationships may be due to the fact that they provide support, as depressed individuals whose families were characterized as being low in cohesion and

expressiveness and high in conflict reported more depressive symptoms than did depressed individuals in families with more cohesion and less conflict (Billings & Moos, 1982; Billings, Cronkite, & Moos, 1983).

Observational studies of depressed individuals and their partners suggest that their interactions follow distinct, although dysfunctional, patterns (Jacobson, Holtzworth-Munroe, & Schmaling, 1989). Depressed women, in interactions with their non-depressed husbands, tend to express high rates of dysphoric affect which seems to have the overall effect of reducing subsequent aggressive/hostile behavior from their spouses in a negatively reinforcing manner (Coyne, 1976). Also, depressed women are likely to take a “one-down” position with their husbands, praising them and allowing them to problem-solve while remaining extremely critical of themselves. Husbands, in a somewhat complimentary fashion, tend to present themselves in a competent, helpful way and to express verbal support of their wives, although they may adopt a patronizing and critical stance toward them (Biglan et al., 1985; Hautzinger, Linden, & Hoffman, 1982; Hops et al., 1987).

Not surprisingly, marital problems are strongly associated with depression. Cross-sectional studies demonstrate that marital distress and depressive episodes are highly correlated (Coleman & Miller, 1975). Some studies suggest that depression follows episodes of marital conflict and that marital distress and disruption are the most frequent life stressors preceding depressive episodes (Paykel et al., 1969). Because marital problems in couples with a depressed spouse tend to continue once the depression remits, marital distress is not considered to be solely a result of depression (Bothwell &

Weissman, 1977; Hinchliffe, Hopper, & Roberts, 1978; Paykel & Weissman, 1973). In fact, if the quality of the marital relationship does not improve during the course of depression treatment, poorer outcomes and relapse are to be expected (Rounsaville, Weissman, Prusoff, & Herceg-Baron, 1979).

Hooley and Teasdale (1989) applied the construct of expressed emotion described above to families with a depressed member. They found that depressives whose families were rated as high in EE and marital distress were more likely to relapse 9 months after release from the hospital. In fact, the single best predictor of relapse was the depressed person's perceptions of a critical stance taken by their partner. High EE also predicted relapse in recent onset mania (Miklowitz, Goldstein, Nuechterlein, Snyder, & Mintz, 1988).

The interactional and interpersonal context of alcoholism. Of all problem areas, interactional and interpersonal approaches have been most influential in understanding and treating alcohol abuse. Problem drinking is commonly referred to as a "family problem" - even a "family disease" (Jackson, 1985; Ablon, 1976) - and is increasingly defined in interpersonal terms "as part of a social context" and "as an aspect of an interpersonal process" (Schwartzman, 1988, p. 105). This shift in perspective from seeing alcoholism as an individual problem to viewing it in systemic terms has been influential enough to be considered by some as constituting a Kuhnian paradigm shift (Hazelrigg, Cooper, & Borduin, 1987; Schwartzman, 1988).

The hallmark of systemic approaches to problem drinking is their emphasis on the family and social context in which the drinking occurs. Regardless of how drinking

problems develop, if in fact that can ever be determined, systemic approaches emphasize the ongoing, interpersonal interactions that occur between the problem drinker and his or her interpersonal network that allow the drinking problem to continue. Not surprisingly, a major treatment focus of systems therapies is on altering the family interactions that serve to maintain the drinking problem. Since the 1950s, a number of systemic developmental models and therapeutic approaches have been formulated. All share the idea that “the locus of the problem transcends the individual and that the focus of treatment should therefore be relational - it should address the context of drinking” (Rohrbaugh, Shoham, Spungen, & Steinglass, 1994; p. 229).

Research on the interactions of alcoholic couples repeatedly demonstrates that alcoholics have numerous interpersonal problems and that their interactions with significant others are characterized by increased negativity and decreased problem solving when compared to nonalcoholic, non-distressed couples. O’Farrell and Birchler (1987) compared the marital interactions of three groups of couples: treatment-seeking alcoholic couples, treatment-seeking nonalcoholic but maritally-distressed couples, and nonconflicted-control couples. Overall, alcoholic couples were found to have extensive marital and family problems. In addition, several differences were found among the groups on both self-report and observational/communication measures. Alcoholic husbands reported less marital distress and were less aware of their wives’ marital complaints than husbands in the distressed group. Additionally, alcoholic husbands desired less relationship change than their wives, while distressed husbands and wives reported equal desire for change. The alcoholic and conflicted couples appeared similar

on communication measures, and both differed from the control couples, on the percentage of positive behavior, responsibility-avoiding communication, and extent of interruptions during the interaction tasks.

Billings, Kessler, Gomberg, and Weiner (1979) compared couples with an alcoholic member, distressed but nonalcoholic couples, and normal-control couples during wet and dry, i.e., intoxicated and sober, interactions. The interactions of alcoholic and distressed couples were found to be quite similar in that both displayed more negative verbal and non-verbal exchanges and less problem solving as compared to the normal-control couples. Also, both the alcoholic and the distressed couples became more verbal and expressive during the intoxicification phase, whereas the normal couples did not.

Jacob, Richey, Cvitkovic, and Blane (1981) also employed the experimental intoxicification paradigm in their comparison of the marital interactions of alcoholic and normal-control couples. They found that alcoholic couples were generally more negative and less positive in their interactional patterns than were control couples and that they became even more negative while under conditions of intoxication, whereas control couples did not show this effect. In a replication of this study, Jacob and Krahn (1988) included a psychiatric-control group of couples with a depressed member. They found that the alcoholic and the depressed groups expressed lower rates of positive behavior as compared to the normal-control couples and that the alcoholic couples again displayed more negativity and poorer problem-solving than the control groups.

In contrast to studies that demonstrate the negative impact of alcohol on interactions, Frankenstein, Hay, and Nathan (1985) found that alcoholic couples behaved

more positively when intoxicated. The non-drinking spouses exhibited more positive affect and the alcoholics themselves were more expressive and made more problem descriptions. Jacob and Leonard (1988) obtained similar results, but only for certain types of alcoholics. They categorized alcoholics as either steady in-home drinkers or episodic, binge drinkers and compared their marital interactions during wet and dry conditions. Steady drinkers were more positive in their interaction tasks and showed increased problem solving when intoxicated than when sober, whereas the episodic drinkers became more negative and displayed poorer problem solving while intoxicated.

In terms of treatment, involving spouses in the treatment process, even minimally, usually leads to higher compliance rates with therapeutic directives during treatment and lower relapse rates once treatment is completed (McCrary & Epstein, 1995). Positive marital and family adjustment is associated with better alcoholism treatment outcomes (Billings & Moos, 1983; Finney, Moos, & Mewborn, 1980; McCrary et al., 1986; O'Farrell, 1989) and marital and family conflicts often precipitate relapses by once-abstinent alcoholics (Maistro, O'Farrell, Connors, McKay, & Pelcovits, 1988; Marlatt & Gordon, 1985). Behavioral marital therapy (BMT) for alcohol problems, a treatment approach that combines specific techniques for managing drinking with a focus on other marital relationship issues results in increased marital functioning and decreased problems associated with drinking (Hedberg & Campbell, 1974; McCrary et al., 1986; O'Farrell, Cutter, & Floyd, 1985). Although these positive effects may diminish over time (O'Farrell, Cutter, Choquette, & Floyd, 1992), relapse prevention sessions can help maintain the effectiveness of BMT (O'Farrell, Choquette, Cutter, & Brown, 1993).

In terms of readiness to change, studies demonstrate that marital/family interventions with nonalcoholic family members can lead to an initial commitment to change from a problem drinker who was once uninterested in treatment. Sisson and Azrin (1986) developed a behavior therapy program for teaching nonalcoholic family members (usually the wives) how to reduce physical abuse to herself, how to encourage the alcoholics' sobriety and seeking of professional treatment, and how to assist in that treatment. This program resulted in more alcoholics entering treatment than did a more traditional, Alanon-oriented program for family members. Interestingly, alcoholics whose families participated in the behavior therapy program showed significantly reduced alcohol use prior to entering treatment while alcoholics in the other group did not. Similar results were obtained in a study investigating Unilateral Family Therapy (UFT, Thomas, Santa, Bronson, & Oyserman, 1987), another intervention program for spouses of problem drinkers who are not interested in treatment. Although only a pilot study, results indicated that 61% of problem drinkers whose spouses participated in UFT demonstrated improvement by decreasing their drinking and/or deciding to seek treatment while no problem drinkers with spouses in the control group changed their drinking or sought treatment.

In all, this body of research concerning interactional and interpersonal factors related to schizophrenia, depression, and alcohol abuse, and in particular the studies demonstrating the utility of working with family members of those with problems but who are not yet interested in treatment, lends strong support to the idea that family/relational factors are important correlates of readiness to change. This study

investigates two such factors - demand-withdraw couple interaction and partners' beliefs about the disease model of alcoholism - that may be related to alcoholics' readiness to change.

Demand-Withdraw Couple Interaction and Readiness to Change

Demand-withdraw interaction (DWI) is a pattern of couple interaction characterized by one partner demanding or pressuring the other to change through criticism, complaints, and emotional requests and the other retreating through defensiveness, avoidance, and passive inaction (Christenson & Shenk, 1991; Watzlawick et al., 1967). Demand-withdraw interaction is common in distressed relationships and highly indicative of relationship dissatisfaction both cross-sectionally and longitudinally (Christenson & Heavey, 1990, 1993; Christenson & Shenk, 1991; Heavey, Christenson & Malamuth, 1995; Heavey, Layne, & Christensen, 1993). Demand-withdraw interaction can be assessed by a questionnaire measure (Christensen & Shenk, 1991) and/or observational ratings of couple interaction (Christensen & Heavey, 1990); both of these methods have been found to distinguish distressed and non-distressed couples. Generally, female partners are more likely to take on the role of the demander while male partners are more likely to be the withdrawers, though this role pattern depends somewhat on who wants what kind of change in whom (Christenson & Heavey, 1990, 1993; Heavey et al., 1993).

There are a number of reasons to hypothesize that an alcoholic's readiness to change may be related to the level of DWI occurring in his significant interpersonal relationships. First, alcoholics are known to have distressed relationships (O'Farrell &

Birchler, 1987) and relationship distress is associated with DWI (Christenson & Heavey, 1990, 1993; Christenson & Shenk, 1991; Heavey et al., 1995; Heavey et al., 1993).

Clinicians note that this type of interaction is common when one partner in a relationship has a drinking problem (Bepko & Krestan, 1985). Further, alcoholics tend to be less aware of their relationship problems and also desire less relationship change than their partners (O'Farrell & Birchler, 1987); these factors set up the female partners of male alcoholics to take on the demander role, aside from the mere fact of them being female. Anecdotal and case study reports (see, e.g., Fisch, 1986) describe the self-perpetuating struggle between a problem drinker (usually described as the husband) who says to the non-drinking spouse (usually described as the wife) "I drink because you nag" while the non-drinking spouse says, "I nag because you drink." Finally, studies investigating the effects of therapist behavior on client noncompliance demonstrate that directive, confrontive behavior on the part of therapists can lead to decreased compliance and increased resistance in clients (Chamberlain et al., 1984; Miller et al., 1993; Patterson & Forgatch, 1985). Therefore, it is reasonable to hypothesize that confrontive, demanding behavior on the part of family members may have similar effects on alcoholics, leading to increased withdrawal, stronger resistance, and decreased readiness to change the drinking problem.

Shoham et al. (1998) investigated this pattern of DWI in their study of relational moderators of response to two different treatments for alcohol-involved couples (Beutler et al., 1993; Beutler, Shoham, Jacob, & Rohrbaugh, 1997). Because Shoham et al.'s study is so relevant to the current study, and indeed was conducted on the same data set

that the current study uses to test hypotheses about DWI, disease-model beliefs, and readiness to change, their study is reviewed in detail here.

In their treatment moderation study, Shoham et al. (1998) hypothesized that couples whose relationship was characterized by high levels of DWI would respond less favorably to a treatment that was also high in demand for change, since the therapy replicates some of the same ineffective solution used by the partners (Watzlawick, Weakland, & Fisch, 1974). In effect, Shoham et al.'s study - although focused on DWI as a moderator of treatment outcome and not readiness to change per se - examined this notion that confronting alcoholics and demanding that they change seems to be associated with the opposite result.

Shoham et al.'s (1998) study was conducted, as is the current study, within the context of a larger project (Beutler et al., 1993, 1997) comparing manualized cognitive-behavioral therapy (CBT; Wakefield, Williams, Yost, & Patterson, 1996) and family-systems therapy (FST; Rohrbaugh, Shoham, Spungen, & Steinglass, 1994) for male alcoholics and their female partners. In this parent project, based at the University of California, Santa Barbara, 63 couples were randomly assigned to receive up to 20 sessions of either CBT or FST. Because the aim of this larger project was to investigate differential treatment response as a function of both individual and couple-level characteristics, the two treatment groups were compared with each other and no control group was included.

Although both CBT and FST considered drinking to be a primary target for change, these treatments differed, as evidenced by ratings of videotaped therapy sessions,

on two key process dimensions: therapist demand for change and individual versus systemic focus. Therapists in the CBT condition focused primarily on the individual drinker and his drinking with the goal of achieving abstinence by the 12th session of treatment; relationship issues and other alcohol-related life problems were addressed secondarily in CBT. In contrast, FST took a more neutral stance toward change, targeting the system of interactions that serve to maintain the drinking problem and employing direct and indirect strategies to deal with client resistance and reluctance to change.

Shoham et al. (1998) hypothesized that CBT, because of its high demand for change, would be less effective with couples whose relationship is characterized by high levels of DWI, especially those where the female partner demands and the alcoholic withdraws. The authors reasoned that an alcoholic husband might withdraw from a high demand treatment just as he withdraws from a high demand partner. Shoham et al. further reasoned that for couples high on DWI, a therapy that focuses on altering such ineffective interactions would be a better fit than a treatment that focuses mostly on the individual drinker. Therefore, while high DWI couples should have relatively poorer outcomes with CBT, FST should be equally effective for all couples, regardless of the couple's level of DWI.

Shoham et al. (1998) also tested more specific hypotheses regarding the particular role patterns of DWI. Since the underlying mechanism of their treatment moderation hypotheses is the female partner attempting to change the alcoholic and him resisting, the authors proposed that these moderation results would be most evident when (a) the

female partner demands and the alcoholic withdraws (Wd/Hw), compared to the opposite role pattern of the alcoholic demanding and the female partner withdrawing (Hd/Ww), and (b) when the couple discuss the topic of the alcoholic's drinking, compared to when they discuss another area of conflict in their relationship, since it is in this context that the female partner is most likely to take on the demanding role.

Measures of DWI were obtained through observational ratings of marital interaction tasks in which each couple discussed (a) an area of conflict in their relationship and (b) the problem of drinking itself. The videotaped interaction tasks were later reliably coded for levels of DWI displayed by each partner. These ratings were based on a coding scheme developed by Christensen and colleagues (Christensen & Heavey, 1990; Christensen & Sullaway, 1984). Additionally, DWI was assessed by a parallel questionnaire measure developed by Christensen and Sullaway (1984). These marital interaction tasks were administered before treatment began (T1), during treatment after the first 12 sessions of therapy (T2), and after treatment completion (T3). Additionally, participating couples completed a number of other questionnaires, interviews, and project assessments during these assessment sessions. Due to a high level of missing data at follow-up (because of both drop-out and measurement attrition), Shoham et al. (1998) based their hypotheses testing differential treatment response primarily on measures of treatment retention (both the total number of treatment sessions attended by at least one member of the couple and whether or not the alcoholic completed all 20 sessions of treatment); drinking outcome/abstinence ratings, obtained from a Time-

Line Follow-Back interview (Sobell & Sobell, 1992), were examined in what they considered to be exploratory analyses.

Shoham et al. (1998)'s findings supported their moderation hypotheses. Couples high on pretreatment measures of DWI attended fewer treatment sessions, were less likely to complete treatment, and tended to have poorer drinking outcomes in CBT whereas pretreatment levels of DWI were not associated with outcome in FST. Although these findings held for both the observational and questionnaire measures of DWI, the moderation effects were generally stronger for the observational ratings of the discussion topics. Shoham et al.'s more specific hypotheses concerning the particular role patterns of DWI were also supported: treatment moderation effects were more pronounced when the female partner demanded and the alcoholic withdrew (compared to the opposite role pattern of the alcoholic demanding and the female partner withdrawing), especially when DWI was rated during the discussion of the alcoholic's drinking.

Shoham et al.'s (1998) findings concerning DWI as a moderator of treatment retention carry important implications for the current study on readiness to change. In addition to demonstrating that relational variables can be important predictors of how couples respond to treatment, Shoham et al.'s study suggests that demanding behavior by partners is associated with the opposite intended effect in alcoholics. These findings are consistent with those of Miller et al. (1993) and Patterson and colleagues (Chamberlain et al., 1984; Patterson & Forgatch, 1985) reviewed earlier that demonstrate that confrontive behavior on the part of therapists results in decreased compliance, increased resistance, and poorer response to treatment for clients.

Disease-Model Beliefs and Readiness to Change

In addition to DWI, the current study examines the associations between readiness to change problem drinking and both alcoholics' and their partners' beliefs about the disease model of alcoholism. Of particular interest to the current study are the partner's beliefs because such beliefs may be associated with more general attributions about responsibility and blame, which may, in turn, be related to how the partner interacts with the alcoholic, particularly around the drinking problem. A large body of literature in the marital/family psychology area examines attributions made by partners and the association of these attributions with relationship quality and satisfaction (see Bradbury & Fincham, 1990, for a review). In particular, theorists and researchers have emphasized the significance of attributions regarding causality, responsibility, and blame in terms of understanding relationship dynamics and satisfaction (Bradbury & Fincham, 1990; Fincham, 1985; Fincham & Grych, 1991; Lussier, Sabourin, & Wright, 1993). In their work, Bradbury and Fincham (Bradbury & Fincham, 1990; Fincham & Bradbury, 1988, 1993) conclude that spousal attributions concerning responsibility and blame for events occurring in their marriage are indeed related to marital satisfaction and that, if anything, data from experimental and longitudinal studies suggest that attributions influence marital satisfaction rather than vice versa.

How each partner conceptualizes alcoholism, then - whether they consider it to be a moral issue, a physical illness, a spiritual deficit, or a psychosocial problem - may hold implications for an alcoholic's readiness to change. As pointed out by Marlatt et al. (1988), who applied a general model of helping and coping originally proposed by

Brickman et al. (1982) to problem drinking, these four major etiologic models of alcoholism embody assumptions about responsibility for problem development and problem resolution. In turn, these assumptions may be related to how alcoholics and their partners interact around the drinking as well as how they attempt to change the problem.

According to both Brickman et al. (1982) and Marlatt et al. (1988), the moral model of alcoholism holds problem drinkers responsible for both the development of their problems as well as their resolution. The disease model, on the other hand, removes responsibility for problem development and resolution, maintaining that alcoholics are “sick” and must seek expert helpers who dictate how they will manage their illness. The enlightenment model, embodied by Alcoholics Anonymous and other 12-step groups, maintains that alcoholics, by virtue of their spiritual emptiness, are responsible for problem development but not problem resolution. Rather, alcoholics must place their lives in the hands of a higher power in order to manage their problems. The psychosocial model does not blame alcoholics for developing drinking problems, considering them to be a result of biopsychosocial factors beyond the individual’s control. The psychosocial model does, however, hold alcoholics responsible for the resolution of their drinking problems, empowering them to seek and actively participate in treatment.

The current study focuses on belief in the disease model of alcoholism, which surveys repeatedly find to be the most popular one invoked to explain abusive drinking (Bennett & Kelley, 1987; Caetano, 1987; Zygarlicki & Smith, 1992). As noted above, of particular interest to the current study are the attributions about drinking made by the alcoholic’s partner. The disease model, by attributing alcohol abuse to illness rather than

badness, may remove responsibility for problem development. Therefore, partners who believe that alcoholism is a disease may not blame alcoholics for their drinking problem and may actually engage in less demanding, critical behavior toward the alcoholic since, to them, the alcoholic has an illness beyond his control. This lower level of demand behavior may be associated with increased readiness to change on the part of alcoholics.

The current study also examines the alcoholic's own beliefs about the disease model of alcoholism, although it is not clear how these beliefs will be related to his readiness to change. On the one hand, alcoholics who believe that they have a physical illness may evidence low readiness to change since this model externalizes responsibility for problem development and change (Brickman et al., 1982), perhaps undermining alcoholics' sense of agency and efficacy to do anything about the drinking problem. On the other hand, it is also possible that alcoholics who consider themselves to be "sick" have less shame and guilt about their drinking problem and thus may be more open to treatment and exhibit less resistance to change than alcoholics who do not label themselves as having a disease.

Purpose of the Present Study

The main purpose of the present study was to investigate relationships among couple interaction, belief in the disease model of alcoholism, and readiness to change problem drinking in a sample of male alcoholics and their female partners. As reviewed above, research in the areas of general behavior change, addictions treatment, and marital/family psychology suggests that alcoholics' readiness to change may be related to ongoing interactional processes occurring in their interpersonal environment, both within

and, perhaps more importantly, outside treatment sessions. Additionally, how alcoholics and their partners conceptualize the drinking problem, particularly in terms of whether or not alcoholism is a disease, may influence attributions of responsibility and displays of criticism which may, in turn, be associated with readiness to change.

A secondary purpose of this study was to examine the construct validity of the University of Rhode Island Change Assessment Scale (URICA; McConaughy, et al., 1989; McConaughy et al., 1983), a commonly used measure of readiness to change. Although client readiness is given much credence in the psychotherapy and addictions treatment literature, important questions concerning the validity of the URICA as a measure of readiness to change problem drinking remain largely unanswered. The current study examined the stability of measures of readiness to change, based on the URICA scores, over time as well as the relationship of readiness to change measures to treatment outcome.

As noted above, the current study examined these research questions within the context of a larger project (Beutler et al., 1993, 1997) comparing manualized cognitive-behavioral therapy (CBT) and family-systems therapy (FST) for male alcoholics and their female partners. Again, this is the same data set that Shoham et al. (1998) used in their treatment moderation study. While Shoham et al. focused on DWI as a predictor of differential response to high versus low-demand treatments, the current study examined DWI in terms of its relationship to alcoholics' readiness to change and belief in the disease model of alcoholism. Hypotheses regarding associations among these three main construct variables were tested using measures made at baseline (T1) and after the 12th

session of treatment (T2) only. Although alcoholics and their partners completed additional assessments at three later points during the parent project, data obtained after the T2 assessment point are compromised by high attrition from both treatment and measurement. Further, data obtained after the T2 assessment point are confounded with treatment group due to CBT's mandate that alcoholics achieve abstinence by the 12th therapy session in order for them to continue in the project. Like Shoham et al., the current study used treatment retention as the primary outcome measure and examined available abstinence ratings as an outcome in analyses that must be regarded as exploratory given the extent of missing data in the parent project. These outcome measures were used primarily in the context of examining the construct validity of the readiness to change measure.

The first set of research questions concerned the relationship between demand-withdraw couple interaction and alcoholics' readiness to change. It was hypothesized that alcoholics' readiness to change would be negatively related to the amount of DWI occurring in his relationship with his partner. Since the postulated mechanism behind this dynamic is the female partner attempting to change the alcoholic and him resisting, this inverse relationship between DWI and readiness should be most apparent when (a) the partner takes on the demander role compared to when the alcoholic demands and (b) when the couple specifically discusses the alcoholic's drinking compared to when they discuss another area of conflict in their relationship, since it is in this context that the partner is most likely to demand change. In addition to being concurrently correlated, it was hypothesized that these variables are causally related and that measures of

pretreatment DWI would predict alcoholics' readiness to change after the first 12 sessions of treatment.

The second set of research questions addressed relationships among disease-model beliefs, demand-withdraw couple interaction, and alcoholics' readiness to change. It was hypothesized that partner disease-model beliefs would be positively related to alcoholics' readiness to change since the more strongly a partner believes that alcoholism is a disease, the less she will nag, criticize, and demand that the alcoholic change. This low level of demandingness, in turn, should be associated with higher readiness to change in the alcoholic. This inverse relationship should be most apparent when the couple actually discusses the alcoholics' drinking, as compared to when the couple discuss another area of conflict. Essentially, this set of hypotheses tested whether DWI mediates the relationship between disease-model beliefs and readiness to change. In terms of alcoholics' own beliefs in the disease model of alcoholism, it was hypothesized that alcoholics who consider their drinking problem to be a physical illness would score lower on measures of readiness to change due to the externalization of responsibility inherent in the disease model.

A final set of research questions examined the construct validity of the URICA, one of the most commonly used measures of readiness to change. Although studies (as reviewed above) have demonstrated that stages of change can be reliably assessed in substance-abusing samples, major questions concerning the construct validity of the URICA as a measure of readiness to change problem drinking need to be addressed before this instrument can be recommended for use in alcoholism research and treatment.

Since readiness to change is hypothesized to be a dynamic client state, as opposed to a more stable personality trait, the readiness measure should show relatively low rank-order stability (test-retest reliability) from T1 to T2 compared to measures of a presumably more stable construct such as belief in the disease model of alcoholism. In other words, alcoholics, at least those who remain in treatment, should show increases in their readiness to change from T1 to T2 as they progress through treatment. Additionally, in the strongest test of the construct validity of the URICA, measures of readiness to change should predict the alcoholic's response to treatment, in the current study, indicated by abstinence from alcohol at termination, the number of therapy sessions attended by at least one member of the couple, and whether or not the alcoholic completed all 20 sessions of treatment.

METHOD

Participants

As noted above, the participants were 63 male alcoholics and their female partners who received no-cost treatment in exchange for their research participation. The male drinkers met the following inclusion criteria: (a) a primary Diagnostic and Statistical Manual of Mental Disorders (3rd ed., rev.; DSM-III-R; American Psychiatric Association, 1987) diagnosis of alcohol abuse or dependence; (b) a score of 7 or greater on the Michigan Alcohol Screening Test (MAST; Selzer, 1971); and (c) involvement in a committed couple relationship for at least one year with a female partner. Additionally, both members of the couple had to agree to comply with the demands of the treatment protocol and assessment schedule. In all, 80 male alcoholics participated in the initial intake/assessment sessions at the University of California, Santa Barbara. Of these, 63 (79%) met inclusion criteria and later attended at least one session of either CBT ($n = 30$) or FST ($n = 33$) and were included in the project. The other 17 drinkers either failed to meet the inclusion criteria ($n = 10$) or declined participation ($n = 7$) once the requirements of the project were understood. Of the latter group, five were already assigned (randomly) to CBT and two to FST; this resulted in three more cases in the final FST group. It should be noted that couples were unaware of their treatment assignment at the point they declined participation.

The average age of the 63 participating male alcoholics was 37.4 years ($SD = 9.0$). They were primarily Caucasian ($n = 54$ or 82%); the remaining were Hispanic ($n = 5$), African American ($n = 2$), and Native American ($n = 2$). Educationally, 92% of the males

graduated high school and 30% earned a college degree. In all, 72% were employed. In terms of drinking behavior, the male alcoholics obtained a mean MAST score of 31.5 (SD = 9.2) and a mean score of 25.0 (SD = 11.2) on the Total Alcohol Involvement scale of the Alcohol Use Inventory (AUI; Wanberg, Horn, & Forster, 1977). In all, 57% of the alcoholics reported some form of prior treatment for drinking problems, 65% acknowledged having been arrested for alcohol-related problems, and 58% said they used marijuana or another illegal drug in the past year. No participants met DSM-III-R criteria for substance dependence (other than alcohol) and alcohol was their primary drug of abuse.

The female partners averaged 36.3 years of age (SD = 9.5) and were slightly more educated than the males with 39% of them obtaining college degrees. Compared to the male alcoholics, the female partners reported fewer problems with alcohol and drug use: only 24% acknowledged occasional marijuana use and 13% participated in prior treatment for alcohol problems. Unfortunately, it is not known whether any of the female partners met DSM-III-R criteria for alcohol abuse or dependence, as this was not directly assessed.

On average, the couples had been together 8.3 years with a range of 1 to 45 years. At the time of intake, 60% of the couples were legally married and 58% had children (although some children were from previous relationships and/or marriages). The female partners (51.9%) were more likely than the male alcoholics (30.8%) to include relationship problems as one of their primary reasons for seeking treatment, $X^2(1, N = 61) = 3.70, p = .054$. Additionally, the female partners were less likely to describe their male

partners with positive adjectives than vice versa, $t(51) = 3.04$, $p = .004$, on an 18-item adjective checklist designed for use in the parent project.

A series of t-tests revealed no significant differences between the CBT and FST groups on any pretreatment measures of the main construct variables, demographic characteristics, or problem severity indicators.

Procedure

Alcoholics and their partners who met inclusion criteria attended two pretreatment (T1) assessment sessions during which they completed questionnaires, interviews, and other project measures; those relevant to the current study are described in the following section. During the second pretreatment assessment session, each couple participated in a videotaped marital interaction task that was later rated and used to obtain an observational measure of DWI. All couples gave prior consent to allow these discussions to be videotaped.

The couple interaction tasks were administered by graduate-student case managers (not therapists) who instructed the couple to discuss, in order, three topics: (a) plans for a vacation, which was a presumably neutral topic that served as a warm up and was not rated for DWI; (b) an area of conflict in the couple's relationship besides the alcoholic's drinking; (c) and the drinking problem itself. The conflict topic was chosen individually for each couple based on the couple's prior independent responses to the 34-item Area of Change Questionnaire (ACQ; Weiss, Hops, & Patterson, 1973) which surveys a range of potential conflict areas for couples, such as communication, emotional expression, companionship, finances, sex, child management, and recreation. The case manager

selected a topic that was important to the couples but one that would not be too explosive. usually one ranked high but not highest by both partners. The couple was instructed to discuss the selected conflict topic and try to resolve it in the next 10 minutes. During the actual interactions, the case manager left the room while the couple discussed the topic at hand. After the allotted time, the case manager returned to the room and asked the couple to discuss the male partner's drinking during the next 10 minutes.

The marital interactions tasks and other project assessments were repeated at T2 but, as noted above, couples only discussed the drinking topic at T2. The average length of time between the T1 and T2 assessments was 70 days ($SD = 32$).

Constructs and Measures

The constructs of primary interest to the current study were measured at T1 and T2 by self-report (readiness to change, disease-model beliefs) and observational methods (DWI). Measures of treatment outcome, relevant mainly to the URICA construct validity research questions, were obtained at treatment termination. While some measures pertained to the alcoholic only (e.g., readiness to change), others were administered to both the alcoholic and his partner (disease-model beliefs, DWI). Readiness to change and disease-model beliefs are individual-level variables because they reflect attributes of either the alcoholic or his partner only; DWI is considered to be a couple-level variable because it is composed of both alcoholic and partner responses and reflects attributes of the couple.

Readiness to change. Readiness to change was measured at T1 and T2 by the University of Rhode Island Change Assessment Scale (URICA), a 32-item self-report

questionnaire with sound psychometric properties (McConnaughy et al., 1983, 1989). This instrument was developed by Prochaska and colleagues to measure the stage of change (i.e., precontemplation, contemplation, action, maintenance) that a participant is in regarding a particular problem; each stage is measured by eight items. Respondents are instructed to indicate the extent to which they agree or disagree with each item on a Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Raw scale scores for each of the four stages of change are obtained by summing the scores for the individual items that comprise the scale; thus a stage of change raw scale score can range from 8 to 40. In the McConnaughy et al. (1983) study, reliabilities (Chronbach's coefficient alphas) for the precontemplation, contemplation, action, and maintenance stage scales were .88, .88, .89, and .88, respectively. In their follow-up study (McConnaughy et al., 1983), the reliabilities of each of these scales were somewhat lower: .79, .84, .84, .82, respectively.

In the current study, alcoholics were given specific instructions to respond to URICA items in terms of their drinking. Raw stage of change scale scores were computed by summing seven items for each scale as recommended by DiClemente and Hughes (1990). These authors dropped one item (the one that correlated the least with the other items comprising the scale) from each URICA stage score and this procedure was likewise followed by Carney and Kivhalan (1995) in their replication study. Thus, raw stage of change scale scores range from 7 to 35 in the current study. In all, completed URICAs were available for 57 alcoholics at T1 (6 URICAs were lost and/or incomplete) and 38 alcoholics at T2. The T1 mean raw scale scores for the precontemplation,

contemplation, action, and maintenance stages were 12.33 (SD = 4.50), 30.25 (SD = 3.12), 27.86 (SD = 4.21), 25.04 (SD = 6.01), respectively, and were very similar to those reported by DiClemente and Hughes (1990) in their alcoholic sample (11.7, 31.3, 27.9, 26.3, respectively). Alphas for these four stage of change scales in the present sample were .80, .67, .83, and .86, respectively. Table 1 shows the correlations among the T1 stage of change raw scale scores.

Insert Table 1 about here

As seen there, the contemplation, action, and maintenance scale scores were positively associated together while these stage scores were negatively correlated with precontemplation scale scores. These correlations, with the exception of some involving the maintenance stage scores, were statistically significant and were generally comparable to those reported by McConaughy et al. (1989, 1983).

There are at least three ways URICA scores can be used as a measure of readiness to change: (1) by comparing the four stage of change scale scores and assigning a stage of change based on the participant's highest scale score (Carney & Kivlahan, 1995; Isenhardt, 1994; Smith et al., 1995); (2) by subjecting the four scale scores to a cluster analysis in order to obtain profile groups or clusters that represent different levels of readiness (Carney & Kivhalan, 1995; DiClemente & Hughes, 1990); and (3) as a continuous variable, by computing an overall readiness to change score based on a combination of weighted individual stage scores (Norcross, 1994, personal

communication). Apart from suggestions in the literature that the highest scale score method can result in misclassification (Carney & Kivlahan, 1995; Isenhardt, 1994), there are no definitive data to indicate the superiority of one method over another. Each of these methods was therefore explored in the current study.

The highest scale score method was used to classify alcoholics into one of four groups based on their highest individual URICA raw scale score. In cases where the highest scale score was equal on one or more scale scores, alcoholics were assigned to the stage of change that represented being "most ready." That is, if an alcoholic's contemplation and action scores were equal, he was assigned to the action stage of change since action is further along on the readiness continuum than is contemplation. At T1, 1 alcoholic was designated as being in the precontemplation stage of change, 28 in the contemplation stage, 17 in action, and 11 in maintenance. It was somewhat surprising to see 11 alcoholics being classified into the maintenance stage of change at this point since they had not yet actually begun treatment.

Application of the cluster method was done by fitting participants into the five cluster groups found by DiClemente and Hughes (1990) and replicated (at least in part) by Carney and Kivlahan (1995). As described in the introduction, these cluster groups - precontemplation, ambivalent, participation, uninvolved, and contemplation - are defined by a particular configuration of high and low stage of change scale scores. For example, the precontemplation cluster was characterized by above average scores on the precontemplation scale, significantly below average scores on the contemplation scale, and slightly below average scores on both the action and maintenance scales; the

uninvolved/discouraged cluster obtained below average scores on all four stage of change scales.

To relate the alcoholics in the current sample to DiClemente and Hughes' (1990) five clusters, the individual stage of change raw scale scores for each participant were converted to T-scores based on norms obtained from DiClemente and Hughes (personal communication). Distance scores representing profile (dis)similarity to each of the five clusters (precontemplation, ambivalent, participation, uninvolved, and contemplation) were then calculated for each alcoholic in the present sample by summing the squared deviations of the alcoholic's stage scores from the stage score means obtained from DiClemente. With the lowest cluster-similarity score as a classification criterion, this procedure located 21 cases as most similar to the precontemplation cluster, 4 to the ambivalent cluster, 14 to the participation cluster, 7 to the uninvolved/discouraged cluster, and 11 to the contemplation cluster. These five cluster groups were further simplified into a dichotomous index for use in subsequent analyses by combining the precontemplation and discouraged clusters into an "unready" to change group and the ambivalent, contemplation and participation clusters into a "ready" to change group.

Finally, a continuous measure of readiness to change was computed using a weighted sum procedure (Norcross, 1994, personal communication). First, a principle components factor analysis with varimax rotation was performed on the individual URICA stage of change scale scores; the results revealed a strong bipolar factor explaining 55% of the common variance with a second factor explaining an additional 22% of the variance. Consistent with the stage of change correlations shown in Table 1,

precontemplation (negatively), contemplation and action scale scores loaded on the first factor while the maintenance scale loaded alone on the second factor. This is not surprising given that, at the T1 assessment point when the URICA was first completed, alcoholics were just beginning treatment and not likely to be in the maintenance stage of change. Rollnick et al. (1992) encountered similar difficulties with items designed to measure the maintenance stage of change in the development of their “short readiness to change” questionnaire. They decided to exclude maintenance items from their instrument and settled on a three-factor model representing the precontemplation, contemplation, and action stages of change. However, Rollnick et al. then used cluster analysis to group their respondents and did not attempt to construct a continuous measure of readiness to change.

Therefore, based on both empirical and conceptual grounds, maintenance scale scores were excluded from the continuous readiness to change index, which was computed by summing the weighted (standardized) precontemplation, contemplation, and action scale scores. Specifically, the precontemplation (reversed since high precontemplation scores indicate a lack of readiness to change) and the contemplation scale scores were assigned a weight of “1” while the action scale score was assigned a higher weight of “3.” These differential weights were chosen to give equal intervals to each stage and to reflect the increase in readiness that theoretically accompanies movement through the stages. Other weightings could have been used and, since the weights reflect linear transformations of the scores, should not substantially alter any results. The mean of this continuous-readiness index at T1 ($N = 57$) was 145.35 ($SD = 46.90$) and ranged from 45 to 230. Again, this continuous-readiness index is based on a

weighted summation of scale scores in the form of T-scores, which is why the scale of measurement appears large compared to the raw scale scores.

Demand-withdraw couple interaction. The current study used the same observational measures of DWI¹ used by Shoham et al. (1998). As described in their study, these measures were obtained from ratings of the conflict and drinking discussion topics during the videotaped marital interaction tasks administered at T1 and T2 (although, as noted above, the couple only discussed the drinking topic at T2). The ratings were based on a coding system developed by Christensen and colleagues (Christensen & Heavy, 1990; Christensen & Sullaway, 1984) that yields two separate scores representing the two main role patterns of DWI: the female partner demanding while the male partner withdraws, commonly referred to in the DWI literature as “wife-demand/husband-withdraw” (Wd/Hw) and the male partner demanding while the female withdraws, commonly referred to as “husband-demand/wife-withdraw” (Hd/Ww).

The ratings of the couple interaction tasks were made by three graduate student judges at the University of Arizona. These judges independently watched the videotaped interaction segments for each case and rated the male and female partners on five dimensions: pursues discussion, blames, pressures for change (indicative of demand behavior) and avoids and withdraws (indicative of withdrawal). These ratings were made on a 9-point scale ranging from 1 (not at all) to 9 (almost constantly). The conflict and

¹ Although DWI was assessed with both observational ratings and report questionnaires in the Shoham et al. (1998) study, the current study used only the observational ratings of DWI from the marital interaction tasks since the observational ratings proved more robust than the questionnaire measures in the Shoham et al. (1998) study.

drinking discussion topics were rated separately and all ratings were made independently. Scores for the Wd/Hw role pattern were calculated by adding the mean of the female partner's ratings on the three demand dimensions to the mean of the male partner's ratings on the two withdraw dimensions. Likewise, Hd/Ww scores were calculated by adding the mean of the male partner's ratings on the three demand dimensions to the mean of the female partner's ratings on the two withdraw dimensions.

As reported in Shoham et al. (1998), reliability analyses demonstrated satisfactory levels of interrater agreement and intrascale consistency for the DWI ratings that are comparable to those reported by Heavey et al. (1993). Spearman-Brown effective reliability coefficients (Rosenthal & Rosnow, 1991) indicated relatively high levels of agreement among the three judges for ratings of the two role patterns (median $\underline{R} = .90$, range .85 to .95) as well as for the 10 individual rating dimensions (three demand and two withdraw indicators for each partner) that were used to calculate those scores. Overall, interrater agreement was higher for the demand dimensions (median $\underline{R} = .89$) than for the withdraw dimensions (median $\underline{R} = .78$), likely due to withdrawal and avoidance behaviors being rated as occurring less often.

In all, the current study used a total of four DWI scores at T1 (Wd/Hw during the conflict discussion, Wd/Hw during the drinking discussion, Hd/Ww during the conflict discussion, Hd/Ww during the drinking discussion) and two DWI scores at T2 (Wd/Hw and Hd/Ww, both during the drinking discussion). Total \underline{N} s for DWI ratings were 57 at T1 (videotapes for 6 cases were lost or unintelligible) and 32 at T2 (due to dropout and/or lost/unintelligible videotapes). At T1, the mean levels of Wd/Hw rated during the

drinking and conflict discussion topics were 24.33 ($SD = 6.91$) and 23.82 ($SD = 5.99$), respectively. The mean levels of the opposite Hd/Ww role pattern at T1 during the drinking and conflict discussion topics were 17.39 ($SD = 5.97$) and 21.83 ($SD = 7.02$), respectively.

Disease-model beliefs. Beliefs in the disease model of alcoholism held by both the alcoholic and his partner were assessed with a 10-item scale developed by the author (Grencavage, 1995). Respondents rated their agreement to each questionnaire item on a scale from 1 (strongly disagree) to 9 (strongly agree). In a previous study comparing treatment-seeking and non-treatment-seeking alcoholics, the disease-model-belief scale had an internal consistency of .75 (Grencavage, Shoham, & Ronrbaugh, 1995). In the current study, this scale was administered to both alcoholics and their partners at T1 and T2. The alphas for the alcoholic and partner subsamples at T1 were .74 and .68, respectively. The T1 mean disease-model-belief score for the alcoholics ($N = 54$) was 5.73 ($SD = 1.29$) and, for the female partners ($N = 56$), 6.65 ($SD = 1.39$).

Problem severity. Measures of drinking problem severity were provided by the Total Alcohol Involvement scale of the AUI (Wanberg et al, 1977) and the 25-item MAST (Selzer, 1971), both of which are widely used in alcoholism research. The AUI is a multiple choice questionnaire containing 147 items assessing the nature and range of alcohol-related problems, including styles of drinking, symptoms and consequences of alcohol use, and perceived benefits of drinking. The Total Alcohol Involvement scale measures broad involvement with alcohol and, according to the authors, can be used as a

general measure of alcoholism. The scale has an internal consistency of .93 and correlates .72 with the MAST.

Drinking behavior before, during, and after treatment was assessed using a Time-Line Follow-Back interview (TLFB; Sobell, Maistro, Sobell, & Cooper, 1979; Sobell & Sobell, 1992). With other samples, this interviewing method has shown interobserver (alcoholic and spouse) and test-retest reliability and is recommended for alcoholism treatment research (Carey & Teitelbaum, 1996; O'Farrell, Cutter, Bayog, Dentch, & Fortgang, 1984; Sobell & Sobell, 1992). It is administered by having drinkers recall the quantity and frequency of daily alcohol use over a specific time period (usually at least several months) using both a calendar and prompts from the interviewer as aids. Data from the TLFB interview at T1 and T2 are used in the current study. In order to have a comparable measurement frame across couples, TLFB data was examined from the 90 days before each assessment point. The percentage of days in each 90-day period when the drinker consumed no alcohol was used as the measure of abstinence. At T2, TLFB data was available for 67% ($n = 42$) of the original 63 cases.

Treatment outcome. Measures of treatment outcome are relevant to the research questions regarding the construct validity of the URICA. Again, the current study used two primary measures of treatment outcome: abstinence from alcohol at termination and treatment retention. Abstinence ratings were obtained mainly from the TLFB interview (as described above); treatment retention was indicated by: (a) whether or not the identified alcoholic completed the entire 20-session treatment program and (b) the actual number of treatment sessions attended by at least one member of the couple.

As reported in Shoham et al. (1998), 22 couples (of the 28 who completed treatment) provided TLFB data at termination. Of these couples, 73% achieved a clinical significance criterion of at least 95% abstinent days. Mean percentage of days abstinent scores increased significantly in the entire sample over the course of treatment with no differences between the CBT and FST groups. In terms of treatment retention, of the 63 alcoholics who originally began treatment, 28 or 44% completed all 20 sessions of therapy; 10 of the 30 couples randomly assigned to CBT and 18 of the 33 couples assigned to FST², $X^2(1, N = 63) = 2.86, p = .09$. The mean number of therapy sessions attended by at least one member of the couple was 14.40 (SD = 6.82) for the entire sample. Within treatment groups, the average number of CBT sessions was 12.4 (SD = 6.9) while the average number of FST sessions was 16.2 (SD = 6.3), $t(61) = 2.21, p = .031$. Due to the substantial number of couples that attended all 20 sessions, the distribution of the continuous number-of-sessions variable was skewed. However, transformations of the scale of measurement did not substantially alter the box plots of this variable (Cleveland, 1993) and therefore the untransformed scores were used in the Shoham et al. study as well as the current one.

² In 3 cases (1 CBT and 2 FST), the drinker did not complete treatment because the couple moved from the area. Since these cases were making good progress and wanted to continue, they were not considered dropouts. Also, in 2 FST cases the drinker dropped out but the partner continued alone and completed all 20 sessions of treatment. If these 5 cases were included, the overall completion rate would be 48%.

RESULTS

Before addressing the main research questions of the current study, preliminary analyses were performed to (a) examine relationships among measures of similar constructs, including the stability and change in these measures from T1 to T2; (b) identify possible associations between measures of the main constructs and demographic and/or problem-severity variables; and (c) investigate possible biases in the longitudinal analyses due to attrition from measurement at T2. The main analyses concerning the relationship between DWI and readiness to change, the role of partners' disease-model beliefs in DWI and alcoholics' readiness to change, and the construct validity of the URICA are then reported in subsequent sections. All analyses were performed with the SPSS Version 6.1 statistical package.

Preliminary Analyses

Relationships Among Measures of Similar Constructs

Readiness to change. As described above, the current study used T1 and T2 URICA stage of change scores to compute three indices of readiness to change: (a) an ordinal high-scale index based on a participant's highest individual stage of change scale score; (b) a dichotomous cluster index indicating whether a participant was ready or unready based on their stage of change profile; and (c) a continuous-readiness index representing an alcoholic's overall readiness to change based on a summation of weighted stage of change scale scores. Table 2 shows the correlations among these three indices at T1 and T2.

Insert Table 2 about here

Notice that the continuous and cluster indices were moderately correlated with each other at T1 and T2 while the high-scale index was not as strongly related to either of these indices, particularly at T2. On this basis, it was decided to focus on the continuous-readiness index when testing the main hypotheses concerning DWI, disease-model beliefs, and readiness to change, particularly since these other main constructs are also continuous variables. The cluster index was used in the set of research questions addressing the construct validity of the URICA. As noted by some investigators (Carney & Kivlahan, 1995; Isenhardt, 1994), the high-scale score method of assigning participants to a stage of change index was found to be problematic in the current sample and therefore was not used in subsequent analyses.

As will be discussed in greater detail later, an issue relevant to the construct validity of the URICA is how measures of readiness to change change as alcoholics progress through treatment, both in terms of rank-order stability and mean-level differences between T1 to T2. Of primary interest are the changes in the continuous-readiness index, but changes in the three component URICA stage scores were examined as well. The rank-order correlation between T1 and T2 measures of the continuous-readiness index indicated that this index was moderately stable over the course of treatment, $r = .61$, $p < .01$. In terms of the three component stage scales, the precontemplation scores also evidenced moderate stability, $r = .59$, $p < .00$, while the

contemplation scores, $r = .30$, $p > .05$, and the action scores, $r = .40$, $p < .01$, were somewhat less stable across measurement points.

Table 3 shows the T1 and T2 means and standard deviations of the continuous-readiness index and its three component scales.

Insert Table 3 about here

A repeated-measures mixed-model ANOVA with Time as the within-case factor and Treatment as the between-case factor indicated that the mean continuous-readiness score increased significantly from T1 to T2, $F(1, 34) = 4.38$, $p = .04$. Secondary ANOVAs for the three URICA raw-scale scores indicated that, while the mean precontemplation scale scores did not change significantly from T1 to T2, $F = 16$, the mean contemplation scale scores decreased, $F(1, 34) = 3.72$, $p = .06$, and the action scale scores increased, $F(1, 34) = 6.15$, $p = .02$, from T1 to T2. Note that, in all these ANOVAs, there were no main effects of Treatment, nor were any Treatment X Time interaction terms significant. In all, while the rank-order correlations suggest moderate stability for the continuous-readiness index from T1 to T2, the ANOVAs indicate a significant increase in the index from T1 to T2, at least for those alcoholics who remained in treatment. Examination of the component scale score correlations and mean-level changes suggest that this increase in overall readiness could be due to alcoholics becoming “less contemplative” about change and moving into “action.”

Demand-withdraw interaction. Recall that the two DWI role patterns - Wd/Hw and Hd/Ww - were assessed by rating two discussion topics (an area of conflict in the couple's relationship and the drinking problem itself) at T1 but only the drinking topic at T2. Relationships among ratings of these two role patterns in each discussion topic were examined in terms of (a) concurrent associations at T1 and T2 and (b) the stability of the DWI ratings from T1 to T2.

Table 4 shows the concurrent correlations between measures of DWI at T1.

Insert Table 4 about here

As seen there, the two role patterns were fairly independent at T1 as indicated by low correlations between ratings of Wd/Hw and Hd/Ww made during the drinking topic, $r(56) = .09$, as well as the conflict topic, $r(56) = .16$. At T2, the Wd/Hw and Hd/Ww role patterns were somewhat more related, $r(30) = .33$, $p = .07$ (two-tailed test; T2 correlations do not appear in Table 4). However, each role pattern was relatively consistent across topic discussions: ratings of the Wd/Hw role pattern correlated .38 during the conflict and drinking discussion topics and ratings of the Hd/Ww pattern correlated .50 during these discussion topics. Shoham et al. (1998) examined mean-level differences for T1 ratings of the DWI role patterns using a 2 X 2 repeated-measures ANOVA with role pattern (Wd/Hw vs. Hd/Ww) and discussion topic (conflict vs. drinking) as within-case factors. They found significant main effects for role, indicating that, in general, Wd/Hw pattern exceeded the Hd/Ww role, as well as for topic, indicating

that DWI was more prevalent overall in the conflict discussion than the drinking discussion. In addition, they found a significant role X topic interaction, indicating that the Wd/Hw pattern was relatively more prevalent when the couple discussed the alcoholic's drinking, compared to when they discussed another area of conflict in their relationship.

The stability of DWI ratings over time was investigated by examining the rank-order correlations and the mean-level differences between T1 and T2 ratings. Time 1 and T2 ratings of the Wd/Hw role pattern correlated $r(30) = .37, p < .05$ and T1 and T2 ratings of the Hd/Ww pattern correlated $r(31) = .32, p < .05$. Table 5 presents the means and standard deviations for the T1 and T2 ratings of the two DWI role patterns for the entire sample.

Insert Table 5 about here

As with measures of readiness to change, repeated measures ANOVAs with Time as the within-case factor and Treatment as the between-case factor were used to evaluate whether any of these mean-level differences were significant as well as whether there was an effect of treatment. A significant F ratio for Time in the Wd/Hw analysis indicated that this DWI role pattern significantly decreased across both groups during the course of treatment, $F(1, 29) = 7.98, p < .01$. There were no significant changes in the other role pattern nor were there any significant Treatment X Time interactions.

To summarize, ratings of both the Wd/Hw and Hd/Ww role patterns were mainly independent at T1 but slightly more correlated at T2. Each role pattern was mildly to moderately consistent across the drinking and conflict discussion topics at T1. As had been predicted by Shoham et al. (1998), the Wd/Hw role pattern was more prevalent than the Hd/Ww role pattern in general and, specifically, when the couple discussed the alcoholic's drinking, compared to when they discussed another conflict area. Finally, the level of Wd/Hw, but not Hd/Ww, displayed by couples decreased as they progressed through both FST and CBT. Keep in mind that analyses involving data collected at T2 must be interpreted cautiously due to the high level of missing data at this assessment point.

Disease-model beliefs. Disease-model beliefs were examined in terms of (a) how partners' and alcoholics' beliefs related to each other concurrently at each measurement point and (b) whether partners' and alcoholics' beliefs changed over time. Partner and alcoholics' disease-model beliefs were largely unrelated at both T1, $r(53) = .13$, $p = .36$, and at T2, $r(40) = .21$, $p = .20$. However, as a group, the partners believed more strongly in the disease model of alcoholism than did the alcoholics, both at T1, $t(1, 53) = 3.84$, $p < .00$, and at T2, $t(1, 40) = 2.13$, $p < .04$. Both partners' and alcoholics' disease-model beliefs were stable over time, as evidenced by rank-order correlations between T1 and T2 measurements of $r(39) = .63$, $p = .00$, for partners and $r(36) = .67$, $p = .00$, for the alcoholics. Further, two 2 X 2 repeated measures ANOVAs with time as a within-case factor and treatment as a between-case factor indicated that the small decrease in disease-model belief scores for partners from 6.64 ($SD = 1.37$) at T1 to 6.55 ($SD = 1.25$) at T2

was not statistically significant, nor was the small increase in alcoholics' disease model belief scores from 5.73 ($SD = 1.29$) at T1 to 5.91 ($SD = 1.54$) at T2 significant.

Additionally, there were no differences in disease-model beliefs between treatment groups at T1 or T2.

Associations with Demographic and Problem-Severity Variables

Correlations were also computed to assess any associations between T1 measures of the main construct variables and demographic and/or problem-severity variables; few significant associations were found. The continuous-readiness index correlated with MAST scores, $r = .28, p < .05$, as did the (dummy-coded) dichotomous cluster index, $r = .27, p < .05$. The continuous-readiness index also correlated with a history of previous alcoholism treatment, $r = .28, p < .05$. Although these correlations suggest that alcoholics with more severe drinking problems before the start of treatment reported higher levels of readiness to change, neither of these readiness to change indices were correlated with the Total Alcohol Involvement scale of the AUI, a presumably a more robust measure of current alcohol problem severity. Of the DWI measures, whether or not the alcoholic had one or more parents that was also alcoholic was significantly associated with the Wd/Hw pattern but only for the conflict topic ($r = .33, p < .05$). Also, the Hd/Ww pattern rated during the drinking topic correlated significantly with two problem severity measures - the percentage of heavy drinking days before treatment, ($r = -.32, p < .05$) and a history of previous treatment on the part of the drinker, ($r = .36, p < .00$); these correlations suggest that the alcoholic was less likely to take on the role of the demander if he drank heavily before the start of treatment, but more likely to demand if he had been in treatment prior

to this project. Of the disease-model-belief measures, only length of relationship was significantly correlated with partner disease-model beliefs ($r = .30, p < .05$). Not surprisingly, since most of these correlations between the main construct variables and demographic/problem severity measures were not significant, nor were they great in magnitude, controlling for them made no substantial differences in the subsequent main analyses.

Correlates of Attrition from Measurement

In order to identify possible biases in the longitudinal analyses due to measurement attrition, alcoholics with ($n = 25$) and without ($n = 38$) missing readiness to change data at T2 were compared on measures of treatment outcome as well as T1 measures of the main construct variables. As might be expected, those with missing data were less likely to have completed treatment, $X^2(1, N = 62) = 17.67, p = .00$, attended fewer treatment sessions, $t(61) = 18.40, p = .00$, and had worse drinking outcomes at termination, $t(58) = 23.31, p = .00$. However, alcoholics with and without missing data were not different on any T1 measures of DWI or disease-model beliefs. Most importantly, alcoholics with and without missing data did not differ on their continuous-readiness index scores: $t(55) = .03, p = .86$.

Main Research Questions

The Relationship Between Demand-Withdraw Couple Interaction and Readiness to Change

The first set of hypotheses concerned the relationship between couple DWI and the alcoholic's readiness to change. It was hypothesized that alcoholics' readiness to

change would be negatively related to the amount of DWI occurring in the relationship with his partner and that this inverse relationship would be strongest when (a) the partner takes on the demander role (Wd/Hw) compared to when the alcoholic demands (Hd/Ww), and (b) when the couple specifically discusses the alcoholic's drinking compared to when they discuss another area of conflict in their relationship.

Table 6 shows the correlations among T1 and T2 measures of DWI and readiness to change.

Insert Table 6 about here

Of primary interest are the correlations between DWI and the continuous-readiness index but the correlations between DWI and the component URICA scale scores are presented as well. Notice that, in general, significant associations between DWI and readiness to change were found only for the Wd/Hw role pattern while no correlations were significant for the Hd/Ww role pattern; this is consistent with a priori predictions. The concurrent correlations at T1 between the Wd/Hw role pattern and the continuous-readiness index, presented in the upper-left corner of Table 6, indicate a significant negative association between these variables, $r = -.29$, $p < .05$. However, in contrast to what was predicted, this association was significant only when the couple discussed the conflict topic, not when they discussed the husband's drinking. The only concurrent correlation of substance between T2 measures of these variables was between the Wd/Hw

role pattern and the continuous-readiness index, $r = -.31$, but this did not reach statistical significance (lower-right area of Table 6).

Lagged correlations between T1 and T2 measures of DWI and readiness to change appear in the lower-left and upper-right areas of Table 6. These correlations must of course be interpreted cautiously because of the high rate of missing data at T2. The lagged correlations of primary interest here are those between the continuous-readiness index and the Wd/Hw role pattern. As seen in Table 6, T1 ratings of Wd/Hw during the drinking discussion correlated significantly, $r = -.46$, $p = .04$, with the continuous-readiness index at T2 (lower left); likewise, the continuous-readiness index at T1 correlated with the Wd/Hw role pattern at T2 (upper right), $r = -.34$, $p = .06$.

The apparent symmetry of lagged correlations between T1 and T2 measures of Wd/Hw and the continuous-readiness index provide little basis for inferring what may be driving what. Does the Wd/Hw interaction pattern lead to lower readiness to change in alcoholics, or is the partner more demanding, and the alcoholic more withdrawing, in response to the alcoholic's low readiness to change? To examine directionality more rigorously, two separate simultaneous multiple regression models were tested in a panel design. In one, the T2 readiness score was the dependent variable with Wd/Hw and readiness at T1 as predictors, while in the other, Wd/Hw at T2 was the dependent variable, with readiness and Wd/Hw at T1 as the predictors. Thus, in each model, the T1 score for the dependent variable was entered to control for the initial level of that variable, which is tantamount to using one variable to predict subsequent change in another. Table 7 shows the results of these analyses.

Insert Table 7 about here

As seen there (with pretreatment levels of the dependent variables controlled), T1 Wd/Hw accounted for slightly more of the T2 variance in the alcoholic's readiness to change (14.4%; $\underline{B} = -.38$) than T1 readiness did for the Wd/Hw pattern at T2 (8.41%; $\underline{B} = -.29$). These directional differences were not great, however, and permit little basis for inferring whether demand-withdraw couple interaction drives the alcoholic's readiness to change or vice versa.

A somewhat surprising finding emerged when parallel regression analyses were repeated for the Hd/Wd role pattern (see Table 7). Here, the T1 readiness index approached significance as a predictor of T2 Hd/Ww (with T1 Hd/Ww controlled), $\underline{B} = -.34$, $p = .06$. This association was not as clearly bi-directional, as evidenced by the standardized beta weight of $-.17$, $p = .25$, for T1 Hd/Ww as a predictor of T2 readiness. Although the lagged correlations between Hd/Ww and readiness were not significant (see Table 6), these regression analyses hint that, after controlling for initial levels of the dependent variable, the less ready an alcoholic was at pretreatment, the more likely he may have been to take on the demand role, and his partner the withdraw role, at T2. Note that adding treatment group as another predictor in each of these sets of regressions did not substantially alter the results, nor was treatment group a significant predictor in any model.

In all, these results offer partial support for the hypothesis that the male alcoholic's readiness to change was associated with the amount of DWI occurring in his relationship with his partner. Although the magnitude of the correlations between Wd/Hw and readiness to change were somewhat small, both the concurrent and lagged correlations were largely in the predicted direction and specific to the Wd/Hw role pattern as hypothesized. On the other hand, while the hypothesis that stronger associations would be found between DWI and readiness to change when the couple discussed the alcoholic's drinking, compared to another area of conflict in their relationship, was not supported by the concurrent correlations at T1, this hypothesis was supported by the lagged correlations between T1 Wd/Hw and readiness at T2. Panel analyses conducted to determine directionality in the significant lagged correlations were inconclusive as to whether DWI drives readiness or readiness drives DWI. Again, keep in mind that analyses involving measurements made at T2 must be considered exploratory due to the high level of missing data at that assessment point.

Disease-Model Beliefs, Demand-Withdraw Interaction, and Readiness to Change

This study's second group of hypotheses concerned the relationship between belief in the disease model of alcoholism, couple DWI, and readiness to change. It was hypothesized, first, that the more strongly a partner believed in the disease model of alcoholism, the less she would nag, criticize, and demand that the alcoholic change and that this would, in turn, be associated with increased readiness to change in alcoholics. This inverse relationship should be most apparent when the couple discussed the alcoholics' drinking, as compared to another area of conflict in their relationship.

Essentially, this hypothesis tested whether DWI mediates the relationship between partners' disease-model beliefs and alcoholics' readiness to change. A second hypothesis was that alcoholics' own beliefs in the disease model of alcoholism would be negatively related to their readiness to change due to the externalization of responsibility inherent in the disease model.

To confirm the first (mediational) hypothesis, it had to be shown that alcoholics' readiness to change was related to their partners' beliefs in the disease model of alcoholism. Table 8 shows the correlations between disease-model beliefs and readiness to change at both T1 and T2.

Insert Table 8 about here

As seen there, no correlations between partners' disease-model beliefs and any of the readiness to change variables were statistically significant; in fact, most of these correlations were close to zero in magnitude. Therefore, the mediational hypothesis could not be tested. However, it was still possible that partners' disease-model beliefs were associated with the level of demand they displayed in their relationship with their alcoholic partners. Table 9 shows the correlations between T1 and T2 disease-model beliefs and DWI.

Insert Table 9 about here

Again, no correlations between partners' beliefs in the disease model of alcoholism and any DWI variables were statistically significant.

The correlations between alcoholics' beliefs in the disease model of alcoholism and their readiness to change are also presented in Table 8. As seen there, alcoholics' beliefs in the disease model were not related to readiness to change. Although not part of the original hypotheses, the correlations between alcoholics' belief in the disease model of alcoholism and DWI were also examined and are presented in Table 9; none were statistically significant.

Thus, despite the fact that disease-model beliefs were reliably measured as evidenced by adequate internal consistency and rank-order stability from T1 to T2, both the partners' and the alcoholics' beliefs in the disease model were unrelated to either DWI or readiness to change in the current study.

The Construct Validity of the Readiness to Change Measure

As noted above, a secondary purpose of the current study was to examine the construct validity of the URICA. Again, the URICA is one of the most commonly used measures of readiness to change despite the fact that major questions concerning its validity, particularly for use with alcoholics, have yet to be definitively answered. Using data from the current study, the construct validity of the URICA scale was investigated in three ways by examining: (1) the rank-order stability of measures of readiness to change scores from T1 to T2, which should be lower for this "state" construct than for measures of other, presumably more stable constructs such as disease-model beliefs; (2) the mean-level changes in readiness from T1 to T2, which should increase, at least for those

alcoholics who remain in treatment; and finally (3) the ability of measures of readiness to change to predict treatment outcome.

In terms of rank-order stability, if indeed client readiness to change is a dynamic state, and if the URICA is able to capture shifts in readiness as alcoholics progress through therapy, then measures of readiness to change should be relatively unstable over the course of treatment - i.e., show relatively low rank-order stability - compared to the rank-order stability of a presumably more stable client trait like belief in the disease model of alcoholism. As reported above, T1 and T2 measures of the continuous-readiness index were moderately correlated, $r = .60$, $p < .01$. The three component URICA scale scores (precontemplation, contemplation, and action) were also mildly to moderately correlated with r 's of .59, .30, and .40, respectively, from T1 to T2. Thus, measures of readiness to change evidenced mild to moderate rank-order stability over the course of treatment. These rank-order correlations for measures of readiness are somewhat lower than the rank-order correlations between T1 and T2 measures of partners' beliefs in the disease-model of alcoholism ($r = .63$) as well as for the alcoholics' disease-model beliefs ($r = .67$). However, the T1 and T2 measures of readiness were more stable than were T1 and T2 ratings of each DWI role pattern ($r = .37$ for the Wd/Hw pattern and $r = .32$ for the Hd/Ww pattern).

In terms of mean-level changes in readiness over the course of treatment, the results of the ANOVAs reported above indicated that, indeed, mean levels of the continuous-readiness index increased significantly ($F = 4.39$, $p = .04$) from T1 ($M = 149.44$) to T2 ($M = 163.61$), at least for those alcoholics who remained in treatment.

Examination of the mean-level differences between T1 and T2 measures of the three component URICA raw-scale scores revealed that, while precontemplation scale scores did not change significantly, contemplation scale scores decreased ($F = 3.72, p = .06$) from T1 ($M = 30.54$) to T2 ($M = 29.28$) and action scale scores increased ($F = 6.15, p = .02$) from T1 ($M = 28.19$) to T2 ($M = 30.08$).

In all, though the continuous-readiness index evidenced moderate rank-order stability over the course of treatment, the mean-level changes in this index from T1 to T2 indicated that alcoholics, at least those who remained in therapy, reported increased readiness to change as they progressed through treatment. However, inconsistent with this finding is that the dichotomous cluster index - which classified URICA profiles into an “unready” and a “ready” to change group based on clusters reported by DiClemente and Hughes (1990) - showed that 11 cases (of the 36 cases for which both T1 and T2 data were available) moved from the ready group to the unready group during the first 12 sessions of treatment, while only 3 cases moved from the unready to the ready group.

Finally, if the URICA is a valid measure of readiness to change, then measures of readiness to change should predict treatment outcome as indicated, in the current study, by abstinence from alcohol at termination, whether the alcoholic completed all 20 sessions of therapy, and the total number of therapy sessions attended by at least one member of the couple. The correlations between T1 and T2 measures of readiness to change and the three outcome variables are presented in Table 10.

Insert Table 10 about here

As seen there, few significant associations were found. The continuous-readiness index at T1 was not significantly associated with any outcome measure, but the T1 dichotomous cluster index of ready and unready groups was associated with abstinence from alcohol at termination ($r = .41$; $p = .01$). The T2 continuous-readiness index was only associated with the total number of therapy sessions attended by at least one member of the couple, ($r = .34$; $p < .05$). The T2 cluster index was not correlated with any outcome measure. Although not reported in Table 10, the correlations between T1 and T2 scores on the URICA precontemplation, contemplation, and action scales and the three outcome measures were also examined: only the T2 action score was significantly associated with the total number of therapy sessions attended by at least one member of the couple, ($r = .43$; $p = .01$).

Thus, in all, measures of readiness to change were not strong predictors of treatment outcome. Perhaps even more notable than the few significant findings listed above are the more numerous nonsignificant associations between measures of readiness to change and treatment outcome, particularly involving T2 readiness measures. Although the significant associations that were found are moderate in magnitude and consistent with the stage of change model in terms of directionality of the relationship, one would expect even more robust and consistent findings if the URICA validly assesses readiness to change problem drinking.

DISCUSSION

In all, the results of the current study were mixed. While there was partial support for the hypothesis that an alcoholic's readiness to change problem drinking is related to the level of DWI in his relationship with his partner, belief in the disease model of alcoholism was unrelated to measures of DWI and readiness to change. Additionally, the current study's findings offered mixed support for the construct validity of the URICA: while alcoholics who remained in treatment reported increases in readiness to change, measures of readiness to change were not consistently related to treatment outcome.

Regarding the association between DWI and readiness to change, alcoholics whose relationship with their partners was characterized by high levels of DWI, and in particular, the pattern in which the female partner demands and the male alcoholic withdraws (Wd/Hw), scored lower on measures of readiness to change, as had been predicted. The reverse DWI role pattern where the male alcoholic demands and the female partner withdraws (Hd/Ww) was not as strongly related to measures of readiness to change, even though the Hd/Ww pattern was exhibited by the couples in this study. Nearly all the correlations between Wd/Hw and readiness to change were in the expected direction (though not all reached statistical significance): higher ratings of Wd/Hw were associated with lower levels of readiness to change. This inverse relationship between Wd/Hw and readiness to change was evident for concurrent and longitudinal assessments of these variables that took place at pretreatment and after the first 12 sessions of therapy. Again, all longitudinal analyses in the current study must be interpreted with caution because of the problem with missing data at T2.

The results of the current study, however, do not indicate any directionality in the longitudinal associations between Wd/Hw and alcoholic's readiness to change: it is as likely that higher levels of Wd/Hw lead to lower levels of readiness as it is that lower readiness leads the female partner to demand, and the alcoholic to withdraw, in the face of her demands. On the other hand, a somewhat clearer relationship may exist for the opposite Hd/Ww pattern: there was a hint that, after controlling for initial levels of Hd/Ww, alcoholics who reported being less ready to change at pretreatment were somewhat more likely to take on the demander role, and the partners the withdraw role, after the first 12 sessions of therapy. Again, strictly speaking these results were not statistically significant, nor were the straight correlations between Hd/Ww and readiness to change and must therefore be considered exploratory in nature.

While the hypothesized differences between the Wd/Hw and Hd/Ww role patterns and alcoholics' readiness to change were largely found, the expected differences between the conflict and drinking discussion topics were not as clearly evident. Although it was anticipated that this inverse relationship between Wd/Hw and readiness to change would be most apparent when the couple discussed the alcoholic's drinking, this was not always the case. This hypothesis was based primarily on the idea that the female partner would be most likely to pressure the alcoholic for change when they discussed the drinking, more so, at least, than when they discussed another area of conflict in their relationship. However, this does not seem to be what occurred.

It may be that this pattern of Wd/Hw is pervasive in these couples and not restricted to aspects of the drinking behavior per se. If this is the case, then this Wd/Hw

interaction pattern may reflect the quality of the couple's relationship and indicate more general relationship problems; these relationship quality issues may account, at least in part, for the observed relationship between DWI and readiness to change. Although this alternative hypothesis was not examined in the current study, Shoham et al. (1998) did consider this possibility, testing whether the moderating effects they found of DWI on treatment retention could also be explained in terms of the general relationship quality of the couple. They assessed couple ratings of communication and the ratio of positive to negative affect and substituted these variables for DWI in their analyses, concluding that these relationship quality variables could partially account for the moderation results of DWI ratings. Thus, it is possible that the relationships found here between DWI and readiness to change are indicative of lower readiness in more distressed couples, rather than specific to an interaction pattern where the female partner demands change in the drinking behavior and the alcoholic subsequently withdraws.

A somewhat surprising finding in the current study was that, although the female partners consistently believed more strongly in the disease model of alcoholism than did the alcoholics themselves, measures of disease-model beliefs were virtually unrelated to readiness to change and to couple DWI. This lack of relationship cannot be attributed to reliability problems with measurement, since the 10-item disease-model-belief scale evidenced adequate internal consistency and rank-order stability. A partial explanation may be found in looking at the mean levels of disease-model-belief scores, particularly in alcoholics. Alcoholics, on average, scored 5.7 on the 1 to 9 disease-model-belief scale, while partners scored, on average, 6.6. These mean scores, particularly for alcoholics, fall

roughly in the middle of the anchor points representing “strongly disagree” and “strongly agree”, which may indicate that alcoholics, and to some extent partners, answered “I don’t know” to the question of whether or not alcoholism is a disease. If alcoholics and partners do not have strong beliefs either way about the disease model of alcoholism, then you would not expect these beliefs to be strongly associated with anything. Another possible explanation is that beliefs about alcoholism do not necessarily embody the assumptions about responsibility for problem development and problem resolution as outlined by Brickman et al. (1982), and/or that these assumptions and beliefs do not inevitably translate to behavior.

As to whether the URICA validly assesses readiness to change problem drinking, as noted above, the results were mixed and somewhat difficult to interpret. While alcoholics who remained in therapy reported increased readiness to change over the course of treatment, measures of readiness to change were not consistently associated with treatment outcome: the dichotomous grouping of alcoholics into ready and unready to change groups (at pretreatment) significantly correlated with abstinence ratings at termination and the continuous-readiness index (measured after the first 12 sessions of treatment) correlated significantly with the number of therapy sessions attended by at least one member of the couple.

As is the case with disease-model beliefs, this lack of consistent findings between measures of readiness to change and treatment outcome is not likely due to unreliable measurement. Stage of change scale scores in the present study evidenced good internal consistency and were comparable to those reported by the developers of the URICA

(McConaughy et al., 1989, 1983), as were the correlations among scale scores found in the present study. Additionally, the URICA stage of change scale scores obtained for the current sample were nearly identical to those reported by DiClemente and Hughes (1990) in their sample of alcoholics. Further, some support for the construct validity of the URICA was seen in the current study's finding that alcoholics who remained in treatment reported increased readiness to change. The findings that speak against the construct validity of the URICA are those relating readiness to change to treatment outcome (i.e., retention and abstinence at termination). Certainly, if readiness to change is a valid construct and if the URICA adequately assesses readiness, then measures of alcoholics' readiness to change should be consistently related to treatment outcome. This was not the case in the current sample.

Further, the lack of consistent associations between the continuous-readiness index and treatment outcome was not likely an artifact of the way the continuous measure was constructed: the correlations among T1 and T2 individual stage of change scores was also examined and only action scale scores at T2 were correlated with the number of sessions variable. This, too, was surprising, because a number of published studies using samples other than alcoholics, such as general counseling and weight-control patients (e.g., Prochaska, Norcross, et al., 1992; Smith et al. 1995) do indeed report associations between stage of change and treatment outcome.

Although the findings of the current study are definitely limited by the high level of missing data due to both treatment drop-out and attrition from measurement after T2, this missing data problem is also not a likely explanation for the lack of relationship

between readiness to change and treatment outcome, since alcoholics' with and without missing data were not different on measures of readiness to change at pretreatment. Rather, the problem with the URICA as a measure of readiness to change problem drinking may be that it actually measures more of what the alcoholic wants others, particularly case managers and therapists, to think he thinks about his particular problem. Research in the social psychology field shows that an individual's attitudes and self-statements do not always correspond to their behavior (Fishbein & Ajzen, 1974; Mischel, 1968; Wicker, 1979; 1971). Further, research on cognitive dissonance indicates that individuals do generally respond in ways that are internally consistent (Festinger, 1957). Thus, if alcoholics are consistently coming to a treatment program, they are not likely to report that they have no problem in need of change. This is not to say that readiness to change is not an important factor in treatment outcome, but it does suggest that readiness to change may be difficult to measure with self-report questionnaires.

Despite the fact that the findings of the current study question the utility of using the URICA to assess readiness to change problem drinking, at least in terms of understanding and predicting who is likely to benefit from treatment, the current study's findings do hold important implications for research and treatment on interpersonal factors related to problem drinking. This study is another in a growing body of research demonstrating the importance of moving beyond individually-focused orientations in therapy and research design to include relational and contextual factors that influence human behavior. In the current study, couple-level variables, i.e., measures of DWI, were better predictors of an individual's readiness to change than were other individual-level

variables, i.e., disease-model beliefs. As Berscheid (1999) noted in her American Psychologist article about the development of the science of interpersonal relationships entitled The Greening of Relationship Science, “Relationships...are the context in which most human behavior occurs, and so understanding and predicting that behavior is difficult if not impossible if that context is ignored” (p. 262).

In the alcoholism field in particular, there is mounting evidence (as reviewed above) that interactional and interpersonal factors play a critical role in the development and maintenance of drinking problems. In fact, recent reviews of empirically supported treatments (Baucom, Shoham, Mueser, Daiuto, & Stickle, 1998; Chambless et al., 1998) conclude that the only viable efficacy evidence for outpatient alcoholism treatment comes from studies that involve spouses (O’Farrell et al., 1985) or spouses and significant others (Azrin, 1976; Hunt & Azrin, 1973). As noted by Shoham et al. (1998), the 1997 APA Monitor headline summarizing the results of Project Match: “Tailoring Treatments for Alcoholics is Not the Answer” may be premature at this point in time. While it is true that as of yet there exists no unequivocal evidence that tailoring treatment to alcoholics results in better outcomes, the vast majority of matching studies have considered only attributes of individual clients in individual treatments. This scope is much too narrow. As Shoham et al. (1998) state, “To understand what works for whom in couples and family therapies, researchers need to expand the scope of potential moderators beyond attributes of individuals to attributes of relationships” (p. 557-558).

In terms of treatment, these findings offer strategies for working with alcoholics, particularly if they present as “precontemplators” referred by family members or the legal

system. For this subgroup of alcoholics, it may be especially important to consider their interpersonal relationships to determine if they are engaged in a pattern of demand-withdraw behavior with significant others. If such patterns are observed, then these results, in addition to those of Shoham et al. (1998), suggest that these alcoholics are likely to possess low readiness to change and may even be at risk for premature termination from treatment, particularly if the therapist and therapy are also high in demand for change. A more prudent way to approach these alcoholics may be to first address the problematic interaction patterns.

In actuality, it seems that some therapies, and some good therapists, may already approach treatment in this way. The idea that a client's interpersonal network may positively or negatively effect motivational factors is certainly not new in the systemic literature. Many systemic treatments embody dynamic models of readiness to change (such as Steven de Shazer and the Milwaukee Group's solution-focused therapy), and focus on the interactions between family members and the "identified patient". In fact, the severity of relationship problems is frequently proposed in the clinical treatment literature as a guideline for recommending individual versus couple/family therapy to clients (Carlson et al., 1997). But to make sure this is done routinely, and if clinical psychology and psychotherapy is to continue its growth as a science, the field needs more empirical studies supporting the efficacy of this approach.

In conclusion, perhaps the most significant finding of this study is that couple-level variables serve as important predictors of variables that are too often considered in only individual terms. Alcoholics' readiness to change has an interpersonal context; it

does not reside solely within the drinker. In fact, in this study some couple-level variables proved to be better predictors than did individual-level variables (disease-model beliefs did not explain any variance in readiness to change but DWI did). In all, these results underscore the importance of interactional and interpersonal factors in the maintenance and change of alcohol abuse problems and offer the motivational enhancement approach another interactional domain to consider, besides that of the client and therapist, when designing, investigating and implementing strategies to increase motivation in treatment.

Table 1
Correlations Among Pretreatment Stage of Change Scale Scores (N = 57)

Scale	Precontemplation	Contemplation	Action	Maintenance
Precontemplation	-	-	-	-
Contemplation	-.52**	-	-	-
Action	-.54**	.48**	-	-
Maintenance	-.18	.21	.28*	-

Note. * = $p < .05$; ** = $p < .01$; two-tailed test.

Table 2
Correlations Among the Three Readiness to Change Indices

Readiness to Change Index	Time 1 (N = 57)		Time 2 (N = 38)	
	Cluster Index	High-Scale Index	Cluster Index	High-Scale Index
Continuous Index	.65**	.34*	.67**	.01
Cluster Index	-	.03	-	.09

Note. * = $p < .05$; ** = $p < .01$; two-tailed test. Time 1 = pretreatment; Time 2 = after the first 12 sessions of treatment.

Table 3
Means and Standard Deviations of the Continuous-Readiness Index and Its Three Component Scales

Scale	Mean	
	Time 1 (N = 57)	Time 2 (N = 38)
Continuous Index	149.44 (SD = 45.76)	163.61 (SD = 41.48)
Precontemplation Scale	11.68 (SD = 4.21)	11.82 (SD = 4.33)
Contemplation Scale	30.54 (SD = 2.85)	29.28 (SD = 3.51)
Action Scale	28.19 (SD = 4.32)	30.08 (SD = 3.50)

Note. Time 1 = pretreatment; Time 2 = after the first 12 sessions of treatment. Individual scale score means are presented as raw scores; the continuous index was computed by summing the weighted scale scores (T-scores) of the three component scales as follows:

$$\text{continuous index} = (-1 * \text{precontemplation}) + (1 * \text{contemplation}) + (3 * \text{action}).$$

Table 4
Correlations Among Pretreatment Demand-Withdraw Interaction Variables (N = 57)

DWI variable	Wd/Hw Pattern		Hd/Ww Pattern	
	drinking	conflict	drinking	conflict
Wd/Hw Pattern				
drinking	-	-	-	-
conflict	.38**	-	-	-
Hd/Ww Pattern				
drinking	.09	.08	-	-
conflict	.28*	.16	.50**	-

Note. * = $p < .05$; ** = $p < .01$; two-tailed test. Wd/Hw = wife-demand/husband-withdraw;
Hd/Ww = husband-demand/wife-withdraw.

Table 5
Means and Standard Deviations of Demand-Withdraw Interaction Role Patterns

Group	Time 1				Time 2	
	Wd/Hw		Hd/Ww		Wd/Hw	Hd/Ww
	drinking	conflict	drinking	conflict	drinking	
Entire Sample (N = 31)	23.91 (SD = 6.65)	23.82 (SD = 6.0)	17.02 (SD = 5.44)	21.80 (SD = 7.0)	19.92 (SD = 6.72)	15.73 (SD = 4.67)

Note. Wd/Hw = wife-demand/husband-withdraw; Hd/Ww = husband-demand/wife-withdraw. Time 1 = pretreatment; Time 2 = after the first 12 sessions of treatment.

Table 6
Correlations Among Demand-Withdraw Interaction Variables and the Continuous-Readiness Index (T1 and T2)

Readiness to Change Variable	Time 1 (N = 57)				Time 2 (N = 31)	
	Wd/Hw		Hd/Ww		Wd/Hw	Hd/Ww
	drinking	conflict	drinking	conflict	drinking	
<u>Time 1</u>						
Continuous Index	-.14	-.29*	.16	-.01	-.34	-.28
Precontemplation Scale	.27*	.30*	-.03	.17	.28	.17
Contemplation Scale	.00	-.26	.04	-.00	-.32	-.21
Action Scale	-.11	-.24	.19	.08	-.27	-.27
<u>Time 2</u>						
Continuous Index	-.46*	-.22	-.07	.11	-.31	-.08
Precontemplation Scale	.33*	-.06	-.02	.06	.18	.06
Contemplation Scale	-.14	-.04	.15	-.08	-.08	.13
Action Scale	-.39*	-.31	-.14	.17	-.16	-.08

Note. * = $p < .05$; ** = $p < .01$; two-tailed test. Wd/Hw = wife-demand/husband-withdraw; Hd/Ww = husband-demand/wife-withdraw. Time 1 = pretreatment; Time 2 = after the first 12 sessions of treatment.

Table 7
The Relationship Between Readiness to Change and the Wd/Hw and Hd/Ww Role Patterns:
The Results of Two Multiple Regression Analyses

Dependent Variable	Independent Variables	B	SE B	Beta	Significance
T2 Continuous- Readiness Index (R ² = .52)	T1 Wd/Hw	-2.32	.78	-.38	.00
T2 Wd/Hw (R ² = .22)	T1 Continuous- Readiness Index	-.04	.02	-.29	.10
T2 Continuous- Readiness Index (R ² = .40)	T1 Hd/Ww	-1.17	1.01	-.17	.25
T2 Hd/Ww (R ² = .22)	T1 Continuous- Readiness Index	-.03	.02	-.34	.06

Note. Wd/Hw = wife-demand/husband-withdraw. Time 1 = pretreatment; Time 2 = after the first 12 sessions of treatment.

Table 8
Correlations Among Disease-Model Beliefs and Readiness to Change Variables

Disease-Model-Belief Variable	Time 1 (N = 57)				Time 2 (N = 31)			
	Continuous - Readiness Index	Precontemplation Scale	Contemplation Scale	Action Scale	Continuous -Readiness Index	Precontemplation Scale	Contemplation Scale	Action Scale
T1 Partner Score	.00	-.09	.17	-.06	-.14	.16	-.12	-.11
T2 Partner Score	-.11	.21	-.05	.00	-.01	-.09	.11	.00
T1 Alcoholic Score	.13	-.02	.02	.20	-.14	.04	-.02	.10
T2 Alcoholic Score	.12	-.14	.05	.14	.16	-.24	.17	.16

Note. None of these correlations were statistically significant at the .05 level; Time 1 = pretreatment; Time 2 = after the first 12 sessions of treatment.

Table 9
Correlations Among Disease-Model Beliefs and Demand-Withdraw Interaction Variables

Disease- Model- Belief Variable	Time 1 (N = 57)				Time 2 (N = 31)	
	Wd/Hw		Hd/Ww		Wd/Hw	Hd/Ww
	drinking	conflict	drinking	conflict	drinking	
T1 Partner Score	.00	-.01	.07	.01	.08	-.09
T2 Partner Score	-.19	.04	.27	.04	.13	.08
T1 Alcoholic Score	.09	.01	.17	.27	-.16	.06
T2 Alcoholic Score	-.08	.14	.03	-.03	-.12	.18

Note. None of these correlations were statistically significant at the .05 level. Wd/Hw = wife-demand/husband-withdraw; Hd/Ww = husband-demand/wife-withdraw; Time 1 = pretreatment; Time 2 = after the first 12 sessions of treatment.

Table 10
Correlations Among Readiness to Change and Treatment-Outcome Measures

Readiness to Change Measure	Abstinence Ratings at Termination	Treatment Completion	Number of Sessions Attended
<u>Time 1</u>			
Continuous-Readiness Index	.18	-.06	.10
Cluster Index	.41**	.04	.18
<u>Time 2</u>			
Continuous-Readiness Index	.18	.13	.34*
Cluster Index	.14	-.14	-.06

Note. * = $p < .05$; ** = $p < .01$; two-tailed test. Time 1 = pretreatment; Time 2 = after the first 12 sessions of treatment.

APPENDIX A

THE UNIVERSITY OF RHODE ISLAND CHANGE ASSESSMENT SCALE:

SAMPLE ITEMS

Precontemplation Scale

As far as I'm concerned, I don't have any problems that need changing.

I'm not the problem one. It doesn't make much sense for me to be in treatment.

Contemplation Scale

I've been thinking that I might want to change something about myself.

Maybe a treatment facility will be able to help me.

Action Scale

I am actively working on my problem.

I am doing something about the problems that have been bothering me.

Maintenance Scale

I'm trying to prevent myself from having a relapse of the problem.

I may need a boost right now to help me maintain the change I've already made.

APPENDIX B**THE DISEASE-MODEL-BELIEF SCALE: SAMPLE ITEMS**

People should be taught that being an alcoholic is like having any other illness.

Alcoholism is genetic.

Alcoholism is a disease.

Alcoholism is a learned behavior, like everything else (reverse-scored).

It's possible for alcoholics to learn to drink responsibly (reverse-scored).

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