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Rohrbaugh, M.J., & Shoham, V. (2011). Family consultation for couples coping with health problems: A social-cybernetic approach. In H.S. Friedman (Ed.), *Oxford handbook of health psychology*, pp. 480-501. New York: Oxford University Press.

Family Consultation for Couples Coping with Health Problems:
A Social Cybernetic Approach

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Author Note

The research in this chapter was supported by awards R21-DA13121, R01-DA17539-01, U10-DA13720, and U10-DA15815 from the National Institute on Drug Abuse; award 0051286Z from the American Heart Association; award AA08970 from the National Institute on Alcoholism and Alcohol Abuse; and by supplemental grants from the University of Arizona Agricultural Experiment Station and the Sarver Heart Foundation.

We thank the many colleagues and students who contributed to the work described in this chapter.

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Abstract

We describe a *social cybernetic* view of health behavior problems and a *family consultation* (FAMCON) format for intervention based on that view. Resurrecting foundational ideas from cybernetic family systems theory, this approach takes relationships rather than individuals as a primary unit of analysis, attaches more importance to problem maintenance than to etiology, downplays linear causality, and blurs the conceptual boundary between an individual patient and factors such as stress or support in his or her social environment. Intervention aims to interrupt two types of interpersonal problem maintenance – *ironic processes* and *symptom-system fit* (conceptualized, respectively, as positive and negative feedback cycles) – and to mobilize *communal coping* as a relational resource for change. Although this chapter draws primarily on a couple-focused intervention project with health-compromised smokers to illustrate both the clinical approach and supporting research, we have also applied both the FAMCON format and the social cybernetic view of problem maintenance to help couples and families cope with problems related to heart disease, cancer, arthritis, diabetes, dementia, traumatic brain injury, depression, bi-polar disorder, post-traumatic stress, alcoholism, and prescription drug abuse. If FAMCON proves effective with health problems that do not respond to other, more straightforward behavioral approaches, it could offer a useful alternative to psycho-educational and cognitive-behavioral interventions in the framework of stepped care.

Key words: Family consultation, couples, coping, chronic illness, smoking, social cybernetics

Family Consultation for Couples Coping with Health Problems:
A Social Cybernetic Approach

How are close relationships relevant to chronic health problems and addictions? Research in health psychology provides persuasive evidence that causal arrows go both ways: Positive support from family members (or its opposite, conflict and criticism) predicts the future course of diverse problems such as heart disease, cancer, renal disease, arthritis, diabetes, alcoholism, dementia, and pain (Fisher, 2006; Rohrbaugh, Shoham & Coyne, 2006; Weihs, Enright & Simmens, 2008); yet it is also clear that a patient's chronic illness can burden or disrupt family relations, even to the point of putting family caregivers at risk for health problems themselves (Schulz & Beach, 1999; Vitaliano, Zhang & Scanlan, 2003). Each of these causal paths suggests an approach to intervention, such as attempting on one hand to improve the social support chronically ill patients receive from spouses and other family members (Martire & Schulz, 2007), or on the other hand to reduce caregiver burden directly (Belle, Burgio, Burns, et al., 2006).

Our own work aligns mainly with the first path, addressing how close relationships simultaneously “get under the skin” (Taylor, Repetti & Seeman, 1997) *and* provide a vital resource for clinical change. Yet we depart from mainstream health psychology by downplaying both linear causality and the conceptual boundary between an individual patient and factors such as stress or support in his or her social environment. For more than 15 years we have investigated the role close relationships play in maintaining and resolving various “individual” problems ranging from alcoholism to adolescent drug abuse, and from change-resistant smoking to coping with chronic heart disease. Reflecting our shared background as systemic family psychologists, we assume these problems rarely occur in a vacuum: Rather, they persist as an aspect of current close relationships in which causes and effects appear inextricably interwoven, with one person's behavior feeding back to set the stage for what another person does, and vice versa, in ongoing, circular sequences of interaction.

We call this approach “cybernetic” to highlight the circularity embodied in feedback systems where the effect or result of some problem behavior operates to modify, control, or regulate that very same behavior. While internal feedback loops (e.g., physiological homeostasis) are well known in clinical biology, the transposition of this idea to systems of behavior outside the skin is less familiar – hence we add the modifier “social” to underscore the primacy of feedback-control circuits operating *between* people rather than within them. This social cybernetic view takes relationships rather than individuals as a primary unit of analysis and attaches more importance to problem maintenance than to etiology – what keeps a problem going is usually much more relevant to intervention than whatever may have initiated the problem in the first place. A corollary is that patterns of problem maintenance – and the interventions we design to interrupt them – are inherently idiographic, or case specific: This is because problem-maintaining interpersonal cycles can take drastically different, even opposite forms across cases involving topographically similar complaints (e.g., nagging vs. protecting a spouse who smokes, overeats, or shows distress.)

This chapter describes a *social cybernetic* view of health behavior problems and a *family consultation* (FAMCON) intervention format based on that view. The conceptual underpinnings of social cybernetics are not new, but date back at least 50 years to Gregory Bateson, Don Jackson, and the beginnings of the family therapy movement (Hoffman, 1981; Nichols, 2008). Unfortunately, subsequent dilution by individualist and post-modern trends obstructed the focused empirical examination we think social-cybernetic ideas still deserve – and which we aim to resurrect here. Similarly, the consultation format we use to apply these ideas, consisting essentially of an assessment phase followed by strategic pattern-interruption introduced in a

carefully-prepared “opinion” session, borrows elements from earlier work in family systems medicine (e.g., Wynne, McDaniel & Weber, 1986) and strategic/systemic family therapy (e.g., Fisch, Weakland & Segal, 1982; Selvini-Palazzoli et al., 1978). Although the present chapter focuses on couples and uses an intervention project with health-compromised smokers to exemplify central principles, procedures, and research methods, we routinely apply both the FAMCON format and the cybernetic view of problem maintenance to other problems and client configurations as well.

Finally, the approach we take here may interest some readers because it challenges several common assumptions in clinical health psychology. For example, in contrast to most psycho-educational and cognitive-behavioral approaches, we do *not* assume that effective interventions require understanding the development or etiology of an individual patient's problems or teaching the patient better coping or health-management skills. Rather, we assume that identifying and interrupting current cycles of persistent problem-maintaining social interaction between the patient and intimate others can be sufficient to initiate sustainable change in diverse problems of health and behavior – including behavior relevant to such topographically distinct risk factors as nicotine addiction, depression, and obesity. Indeed, the lines of inquiry implied here portend shifts of emphasis on multiple dimensions: from individual to relational problem units, from problem development (etiology) to problem maintenance (course), from instructive skill-building interventions to strategic pattern interruption, and from group-based comparisons of average outcomes to bottom-up analyses of idiographic, yet rule-governed change.

Two Social-Cybernetic Feedback Processes

A key distinction in the cybernetic framework is between *positive feedback*, referring to the enhancement or amplification of an effect by its own influence on the process that gives rise to it (e.g., an arms race, amplifier gain in electronics), and *negative feedback*, referring to the dampening or counteraction of an effect by its own influence on antecedent processes (e.g., the operation of a simple thermostat, inhibition of hormone secretion by high hormone levels in the blood). Analogously, two patterns of social-cybernetic problem maintenance reflecting positive and negative feedback loops are of particular interest in the realm of behavior: *Ironic processes* are deviation-amplifying positive feedback cycles that occur when well-intended, persistently applied “solutions” keep problem behavior going or make it worse. *Symptom-system fit*, on the other hand, refers to deviation-minimizing negative feedback cycles where a problem or risk behavior appears to preserve some aspect of relational stability for the people involved.

Where human problems persist, ironic positive-feedback processes are ubiquitous: They happen when trying harder to fall asleep keeps a person awake; when demands for intimacy provoke withdrawal; when urging one's spouse to eat, drink, or smoke less leads her to do it more; when encouraging a depressed partner to cheer up results in more despondency; and when attempting to resolve a disagreement through frank and open discussion serves only to intensify the conflict. Although social psychologist Dan Wegner (1994) first coined the term “ironic process” to describe ironic effects of attempted thought suppression on mental control, it captures well a much broader range of ironic phenomena introduced decades earlier by family therapists at Palo Alto's Mental Research Institute (Weakland, Fisch, Watzlawick & Bodin, 1974; Watzlawick, Weakland & Fisch, 1974; Fisch et al., 1982). Whether occurring within or between people, these processes persist because problem and attempted solution become intertwined in a vicious cycle, or positive-feedback loop, in which more of the solution leads to more of the problem, leading to more of the same solution, and so on. Most important, formulations of ironic problem-solution loops provide a template for assessment and strategic intervention: They tell us where to look to understand what keeps a problem going (look for “more of the same” solution) and suggest what needs to happen for the problem to be resolved (someone

must apply “less of the same” solution). Thus, to resolve a problem, it should not be necessary to understand or change its antecedent cause (assuming that can be determined), but simply to break the ironic pattern of problem maintenance by promoting less of the same solution. If this can be done – even in a small way – virtuous cycles can develop that lead to further positive change (cf. Shoham & Rohrbaugh, 1997; Rohrbaugh & Shoham, 2001, 2005).

Problem maintenance via *negative* feedback – emphasized in the writings of family therapists like Jackson (1957), Haley (1976), and Minuchin (1974) – relates to the interpersonal functions a problem serves, not so much for the patient, but for the current close relationships in which he or she participates. Thus, problem behavior may persist because it provides a basis for the restoration or preservation of some vital relationship parameter (e.g., marital cohesion, conflict reduction, engagement of a disengaged family member) in a kind of interpersonal homeostasis. In the addictions arena, clinicians have observed that drinking and smoking can serve important communication functions in family relationships, particularly for regulating emotional closeness and distance (Doherty & Whitehead, 1986; Leipman, Silvia & Nirenberg, 1989; Steinglass, Bennett, Wolin & Reiss, 1987; Whitehead & Doherty, 1989). The pattern we call *symptom-system fit* occurs when a problem such as drinking or smoking appears to have adaptive consequences for a relationship, at least in the short run (Rohrbaugh, Shoham & Racioppo, 2002; Rohrbaugh, Shoham, Trost, Muramoto, Cate & Leischow, 2001; Shoham, Butler, Rohrbaugh & Trost, 2007). For example, in couples where both partners smoke or drink, shared substance use might create a context for mutually supportive interactions or help partners stay positive, even when they disagree. Because one can only hypothesize about what interpersonal “function” a problem might serve based on observing the interaction sequences in which it occurs, identifying symptom-system fit typically involves more inference than identifying an ironic process. Formulations of symptom-system fit are nonetheless useful because they suggest approaches to pattern interruption that target this aspect of problem maintenance directly (e.g., helping a couple disagree or stay connected without smoking or drinking).

Finally, to anticipate a common confusion, the cybernetic usage of “negative feedback” has little to do with giving or receiving criticism, and “positive feedback” relates only tangentially to reinforcement or praise. On the other hand, positive close relationships do matter: In fact, a crucial flip side of social-cybernetic problem maintenance is the fact that positive, collaborative relationships not only confer health benefits but also provide a powerful resource for helping people change. For this reason, cultivation of *communal coping* has a central place in the FAMCON intervention format we will describe shortly.

Why Look Beyond the Patient?

As the root word “psyche” suggests, psychology has long been concerned with events and processes occurring inside the skin – and more recently, the brain – of the individual. Yet to understand health and health behavior, there are also good reasons to look outward, at least as far as the close relationships in which individuals participate. Prospective epidemiological studies controlling for initial health status show unequivocal health-protective effects of close relationships, linking both their quantity and quality to future morbidity and mortality (Berkman, 1985; House, Landis & Umberson, 1988). Thus, people with high levels of social support are less likely to become sick, more likely to recover rapidly when illness does occur, and less likely to die from an established disease. Such findings span problems ranging from the common cold (Cohen, Doyle, Skoner, Rabin & Gwaltney, 1997) to pain, diabetes, multiple sclerosis, pregnancy complications, heart and lung disease, various forms of cancer, and psychological distress (Brown, Sheffield, Leary & Robinson, 2003; Collins, Dunkel-Schetter, Lobel & Scrimshaw, 1993; Stone, Mezzacappa, Donatone & Gonder, 1999).

Research in this area also highlights diverse pathways along which relationships may affect health – for example, by buffering the effects of stressful life experiences (Cohen & Hoberman, 1983); by influencing crucial health *behaviors* such as diet, exercise, alcohol or tobacco use, and adherence to medical regimen (DiMatteo, 2004); and by influencing physiological and neuroendocrine responses directly (Uchino, Cacioppo & Kiecolt-Glaser, 1996). Interestingly, the emerging field of social neuroscience is finding evidence that, in very fundamental ways, "we are wired to connect" (Goleman, 2006): Our ongoing interactions with other people (especially those we care about most) appear to have far reaching biological consequences, with brain-to-brain links triggering hormones that regulate, among other things, how partners' cardiovascular and immune systems function.

A compelling illustration of the power of close relationships comes from our own studies of couples coping with heart failure, a chronic condition that makes stringent and complex demands on patients and their families. In a study of 189 heart-failure patients (139 men and 50 women) and their spouses, we found that interview and observational measures of marital quality predicted all-cause patient mortality over the next eight years, independent of how well the patient's heart functioned at baseline (Rohrbaugh et al., 2006; see Figure 1). Marital quality was a substantially stronger predictor of survival than individual (patient-level) risk and protective factors such as psychological distress, hostility, neuroticism, self-efficacy, optimism, and breadth of perceived emotional support – and the overall statistical effect of marital quality was greater for female patients than males (cf. Coyne, Rohrbaugh, et al., 2001; Rohrbaugh, Shoham, et al., 2004).

A related justification for looking beyond the patient comes from evidence of so-called "partner" or "transitive" effects in couples, where an individual attribute of one partner (e.g., a personality characteristic or level of psychological distress) predicts some health outcome for the other partner independent of what the same attribute in the actor can predict (Kenny, 1996; Ruiz, Mathews, Scheier & Schulz, 2006). For example, a striking spouse-to-patient partner effect in the heart-failure study was that a spouse's confidence in the patient's ability to manage day-to-day aspects of the illness predicted patient survival over and above what the patient's own cardiac self-efficacy (an actor effect) could predict (Rohrbaugh et al., 2004). And with another sample of heart failure patients and their spouses, we found a partner effect of the spouse's psychological distress, which predicted worsening of the patient's cardiac symptoms over the next 6 months (Rohrbaugh, Shoham, Cleary, Berman & Ewy, 2009). While the presence of such a statistical partner effect implies interpersonal influence, explicating the nature or mechanism of that influence often requires taking into account possibly relevant third variables. Thus, the partner effect of spouse confidence on survival appeared largely due to the spouse's confidence correlating with (and serving as a proxy for) the broader construct of dyadic marital quality; however, in Rohrbaugh et al. (2009) we could not explain the partner effect of spouse distress by taking into account either marital quality or the patient's adherence to medical regimen.

Another finding in the heart-failure studies – that the frequency of a couple's useful discussions about the patient's illness strongly predicted survival (Rohrbaugh et al., 2006) – highlights a component of marital quality we think has special relevance to intervention: This is a couple's propensity for *communal coping*, which involves defining a health problem as 'ours' rather than 'yours' or 'mine' and taking cooperative action to solve it (Lyons, Mickelson, Sullivan & Coyne, 1998). Consistent with this idea, a follow-up study with a different sample of heart patients found that communal coping, unobtrusively measured by a spouse's first-person-plural pronoun use (*we-talk*) during a conjoint coping interview, predicted a favorable heart-failure symptom course over the next 6 months (Rohrbaugh, Mehl, Shoham, Reilly & Ewy, 2008). Strikingly, we also found that increased *we-talk* during the course of a couple-focused

(FAMCON) intervention for smokers with heart or lung disease predicted stable cessation a year after the smoker had quit (Rohrbaugh, Shoham, Skoyen, Jensen & Mehl, under review). Not coincidentally, a central thrust of FAMCON is to promote and mobilize communal coping to support social-cybernetic intervention.

Whereas other researchers have documented direct (physiological) pathways between marital conflict and neuroendocrine systems related to cardiovascular and immune function (Kiecolt-Glaser & Newton, 2001), our own work focuses more on indirect (behavioral) pathways through which marital interaction facilitates or undermines health *behavior*, such as a patient's adherence to dietary, exercise, medication, and stress-management regimens that, in turn, influences the course of cardiovascular and other chronic illnesses. For example, we find diminished patient adherence associated with ironic demand-withdraw couple interaction in which one partner (usually the spouse) criticizes, complains, and pressures for change, while the other resists, avoids, and withdraws (Shoham & Rohrbaugh, 2006). This positive-feedback pattern is also common in couples where one partner smokes against the other's wishes – hence the connection to our work with health-compromised smokers, for whom smoking is an indirect (behavioral) pathway to poor cardiac health.

An Application to Change-Resistant Smoking

To illustrate both the social cybernetic model of problem maintenance and the family consultation (FAMCON) intervention format, we will draw on work with couples in which at least one partner has a health problem directly aggravated by continued tobacco use. Despite increasing societal prohibitions, cigarette smoking remains a pressing public health problem: A substantial minority of U.S. adults continues to smoke, and many do so despite having smoking-related illnesses (Brandon, 2001). Although effective cessation treatments exist, their overall success rates are modest, and they rarely reach the high-risk, health-compromised smokers who need them most (Compas, Haaga, Keefe, Leitenberg, & Williams, 1998; Fiore et al., 1996, 2000, 2008; Lichtenstein & Glasgow, 1992). In addition, average effect sizes in controlled clinical trials appear to have diminished over the past few decades (Irvin & Brandon, 2000), perhaps reflecting a residual core of treatment-resistant smokers (Hughes, 2003; Hughes, Goldstein, Hurt & Shiffman, 1999).

We focus here on patients at the intersection of two overlapping risk groups: (a) those ambivalent about giving up tobacco use and (b) those with established smoking-related health problems who nonetheless continue to use tobacco. The overlap is not complete because many ambivalent smokers have no established health problem (at least not yet), and some smokers with health problems have no interest in quitting. Survey data indicate that surprisingly high proportions of patients continue to smoke despite having chronic illnesses like emphysema (37.9%), asthma (24.8%), heart disease (20.3%), hypertension (19.5%), and diabetes (18.5%) – and despite receiving medical advice to quit (Agency for Healthcare Research and Quality, 2006). Even if these percentages have declined somewhat in the past few years, it is evident that health-compromised smokers have moved beyond the mere possibility of suffering from a tobacco-related disease; they face a heightened likelihood of further negative impact and a trajectory of deteriorating health that cessation can help to attenuate or reverse (Chuahirun et al., 2004; Dresler & Leon, 2007).

Curiously, evidenced-based cessation treatments recommended in successive versions of the Public Health Service (PHS) Clinical Practice Guideline (Fiore et al., 1996, 2000, 2008) focus almost exclusively on the individual smoker, even though substantial evidence indicates that social support provided by significant others, especially spouses, predicts whether smokers are able to quit and stay quit (Campbell & Patterson, 1995; Roski et al., 1996). More than a dozen studies link the success of a smoker's cessation efforts to spousal support and the absence

of spousal criticism, yet clinical trials of so-called "social support" interventions based on teaching partners better support skills have had consistently disappointing results (Lichtenstein, Glasgow, & Abrams, 1986; Lichtenstein & Glasgow, 1992; Palmer, Baucom, & McBride, 2000; Park, Tudiver, Schultz & Campbell, 2004). The latter findings apparently prompted the PHS panel to exclude relationship-focused interventions from the Guideline. Unlike the 1996 and 2008 Guideline documents, the 2000 document did recommend helping smokers enlist support for quitting from people outside the treatment context (Fiore et al., 2000, pp. 65-69) – for example, by training them how to solicit support from friends, family, and co-workers – but this component is typically packaged with other kinds of behavioral skill training and does not focus on couple-specific relationship patterns that facilitate or hinder stable cessation.

We have argued elsewhere that the failure of social-support training should not deter attempts to develop more effective couple and family-level interventions for change-resistant smoking (Rohrbaugh et al., 2001; Shoham et al., 2006). One reason is that the early interventions apparently also failed to increase the targeted mediating variable of social support (Lichtenstein et al., 1986). In addition, some of these interventions occurred in formats that mixed dual- and single-smoker couples in the same treatment group, while others made little distinction between committed partners and other relatives or acquaintances. The most crucial problem may be that teaching one-size-fits-all support skills and problem-solving strategies in group formats detracts attention from how particular support behaviors fit (or don't fit) idiosyncratic couple relationships: In some couples, for example, a spouse's persistent positive encouragement provokes resistance, and in others a spouse's refusal to allow smoking in the house (counted as "negative" support in some studies) actually functions to help a smoker stay quit.

Converging lines of research suggest further that taking relationships as a unit for intervention may pay special dividends when the patient is female and/or has a partner who also smokes. For example, the *quality* of marital relations appears generally more crucial to the health of women than men (Kiecolt-Glaser & Newton, 2001; Rohrbaugh et al., 2006); women who smoke tend to have more difficulty quitting and staying abstinent than men (Bjornson et al., 1995; Escobedo & Peddicard, 1996; Wetter et al., 1999); having a partner who smokes is a major risk factor for continued smoking and failure in future quit attempts (Ferguson, Bauld, Chesterman & Judge, 2005; Murray et al., 1995); and women who attempt to quit are more handicapped by a smoking partner than men are (Derby, Lasater, Vass, Gonzalez & Carleton, 1994; Homish & Leonard, 2005).

Against this background we developed and pilot tested a family-consultation (FAMCON) intervention for couples in which one partner (the primary smoker) continued to smoke despite having or being at significant risk for heart or lung disease, and despite receiving repeated advice to quit. Based on social-cybernetic and family-systems principles, the FAMCON approach is substantially different in concept and format from "social-support" interventions tested in the past. As we detail below, the preliminary results were promising, as primary smokers achieved a 50% rate of stable abstinence over at least 6 months, which compares favorably to cessation benchmarks in the literature, especially those reported for smokers initially unmotivated to quit (Shoham et al., 2006). There were also indications that FAMCON may be particularly well suited to female smokers and tobacco users whose partner also smokes – two sub-groups at the highest risk for relapse.

The Family Consultation (FAMCON) Approach

Family systems theory provides a useful perspective on how close relationships can both maintain, and be maintained by, change-resistant smoking – and why including family members can enhance treatment outcome (Doherty & Whitehead, 1986). The FAMCON

intervention we designed for health-compromised smokers differs in several key respects from the social-support interventions tested in the past (Rohrbaugh et al., 2001). While the latter assume that cessation depends on whether individual smokers and their partners learn and implement various problem-solving, coping, or support skills (Lichtenstein & Glasgow, 1992), FAMCON assumes that (a) smoking is inextricably interwoven with the family and social relationships in which it occurs; (b) these relationships can play a key (albeit inadvertent) role in maintaining change-resistant smoking; and (c) partners and important family members should be involved in treatment, not merely as adjunct therapists or providers of social support, but as full participants with a stake in the process of change (Doherty & Whitehead, 1986).

Consistent with these ideas, FAMCON focuses on the two types of interpersonal problem maintenance mentioned earlier – *ironic processes* and *symptom-system fit* (conceptualized, respectively, as positive and negative feedback cycles) – and aims to mobilize *communal coping* as a relational resource for change. An ironic process occurs when well-intentioned but persistent "solutions" to a problem feed back to keep the problem going or make it worse (Fisch et al., 1982; Rohrbaugh & Shoham, 2001, 2005; Shoham & Rohrbaugh, 1997). For example, a partner's nagging may lead to more smoking, which leads to more nagging, and so on. Symptom-system fit, on the other hand, occurs when a problem such as smoking or drinking appears to have adaptive consequences for a relationship, at least in the short run. Thus, smoking could help to regulate closeness and distance for a couple – or more commonly, when both partners smoke, it could provide a context for mutually supportive interactions (Doherty & Whitehead, 1986; Rohrbaugh et al., 2002; Rohrbaugh, Shoham, Butler, Hasler & Berman, 2009; Shoham, Butler, Rohrbaugh & Trost, 2007). Interventions aimed at interrupting ironic processes or helping partners realign their relationship in ways not organized around smoking can vary substantially from couple to couple, depending on the (case-specific) dynamics of problem maintenance. In all cases, however, FAMCON emphasizes the importance of partners working together (coping communally) to help one or both smokers achieve stable cessation. Finally, unlike most treatments for tobacco dependence, FAMCON avoids educational or prescriptive approaches to change, relying instead on strategic interventions that emphasize client choice. In this way, it is less an alternative treatment than a complementary format that can incorporate empirically-supported components such as pharmacotherapy, behavioral skills training, and even smoking reduction, if clients so choose, as long as this occurs in ways that fit and protect the partners' relationship.

Procedurally, FAMCON provides up to 10 "consultation" sessions for single- or dual-smoker couples, ideally proceeding through a *preparation* phase (sessions 1-3), a *quit* phase (sessions 4-5), and a *consolidation* phase (session 6+). The treatment typically unfolds over 4 months, with sessions 1-3 conducted during the first month in a structured format and subsequent sessions allocated according to each couple's quit plan and progress. The preparation phase includes indirect interventions (e.g., solution-oriented questions and a daily-diary procedure) as well as detailed assessment of smoking-related interaction patterns, past quit attempts (and how they failed), and couple strengths. In session 3, after reviewing assessment information with the treatment team, the consultant presents a carefully tailored "opinion," providing specific observations and feedback about how smoking fits the couple's relationship; why/how quitting will be difficult; reasons to be optimistic about success; and issues for the couple to consider in developing a quit plan. The opinion session also includes gently proffered suggestions intended to interrupt certain interaction patterns, and it typically concludes with an invitation for the couple to consider a quit date. Following principles outlined below, the remaining FAMCON sessions in the quit and consolidation phases focus on helping the couple develop, implement, and sustain a quit plan for one or both partners while preserving and building upon communal qualities of their relationship.

Couple-specific dynamics are relevant throughout FAMCON, both as factors in smoking maintenance and resources for successful cessation. Thus, to understand problem maintenance, the therapist-consultant pays close attention to ironic interpersonal cycles fueled by well-intentioned attempts to control or protect a smoker, as well as to the function(s) smoking appears to serve in the couple's relationship.

Ironic processes

As noted above, an ironic process occurs when persistent, well-intentioned attempts to solve a problem feed back to keep the problem going or make it worse. The following vignettes illustrate how such positive-feedback loops might help to maintain change-resistant smoking:

- A husband (H) smokes in the presence of his non-smoking wife (W), who comments how bad it smells and frequently waves her hand to fan away the smoke. H, who had two heart attacks, shows no inclination to be influenced by this and says, "The more she pushes me the more I'll smoke!" Although W tries not to nag, she finds it difficult not to urge H to "give quitting a try." (She did this when he had bronchitis, and he promptly resumed smoking.) Previously H recovered from alcoholism, but only after W stopped saying, "If you loved me enough, you'd quit": When she said instead, "I don't care what you do," he enrolled in a treatment program.
- H, who values greatly his 30-year "conflict-free" relationship with W, avoids expressing directly his wish for W to quit smoking. Although smoke aggravates H's asthma, he fears that showing disapproval would upset W and create stress in their relationship. W *confides* that she sometimes finds H's indirect (nonverbal) messages disturbing, though she too avoids expressing this directly – and when he does this she feels more like smoking (Rohrbaugh et al., 2001, p. 20).

A central aim in FAMCON is to identify and interrupt ironic positive-feedback cycles such as these. As it turns out, most ironic patterns tend to involve either doing too much, as in the first example, or doing too little, as in the second. They may also bear on smoking either directly (e.g., nagging to quit) or indirectly (e.g., pushing exercise or a particular quit strategy). To interrupt an ironic process successfully, the therapist-consultant must (a) accurately identify particular solution efforts that maintain or exacerbate the problem (here smoking), (b) specify what less of those same solution behaviors might look like, and (c) persuade at least one of the people involved to do less or the opposite of what they have been doing (Fisch et al., 1982; Rohrbaugh & Shoham, 2001). Thus, if the thrust of a spouse's solution effort is to push directly or indirectly for change (and this has the ironic effect of making change less likely), we will look for ways he or she might do "less of the same" – for example, by declaring helplessness, demonstrating acceptance, or simply observing. On the other hand, if the spouse's main solution is to *avoid* dealing with the smoking, we will encourage more direct courses of action, such as gently taking a stand. Compared to the alcohol-involved couples we studied earlier (Rohrbaugh et al., 2002; Shoham et al., 1998), our sample of health-compromised smokers tended to show more ironic patterns centered on avoidance and protection than on direct influence. Consequently, interventions more often aimed to *increase* partner influence attempts than to decrease them.

Symptom-system fit

The negative-feedback construct of symptom-system fit calls attention to the interpersonal functions a problem serves, particularly for the current close relationships in which the problem bearer participates (Haley, 1976; Hoffman, 1981; Minuchin, 1974). From this perspective, problem maintenance involves a kind of interpersonal homeostasis, modeled on a cybernetic negative feedback loop, in which the problem behavior provides a basis for the

restoration or perpetuation of some vital relationship parameter (e.g., marital cohesion, conflict reduction). In couples where both partners smoke or drink, shared substance use might create a context for mutually supportive interactions or help partners stay positive, even when they disagree. For example:

- H and W have an early morning ritual of smoking together in their garage on favorite lawn chairs. W says smoking together is the only thing H will let her initiate: "If we didn't smoke in the garage I doubt we'd talk much – and he wouldn't even miss me". When the couple does talk, W feels that H calms her down – and they mostly talk when they smoke. W had quit smoking some years previously but resumed "because I felt such a distance between us."
- H and W have mostly non-smoking friends but say, "We enjoy our forbidden pleasure together. We like being outside the mainstream." W says, "If one of us quits and the other doesn't, I think our relationship would change – and probably not for the better." (Rohrbaugh et al., 2001, p. 22)

The clinical aim of addressing symptom-system fit is to help couples realign their relationship in ways not organized around tobacco use. For example, if partners anticipate relational difficulties likely to accompany cessation attempts, they can practice exposing themselves to such situations before attempting to quit, or work toward establishing substitute rituals and activities that do not involve smoking. In this way, they begin to make nonsmoking fit the system – a collaborative strategy we think may pay special dividends in managing symptoms of nicotine withdrawal.

Communal coping

FAMCON's third central construct is communal coping, which concerns mobilizing resources for change in ways that compliment social-cybernetic pattern interruption. Thus, regardless of whether one or both partners smoke, the consultant encourages them to view this as a communal problem ("ours," not "yours" or "mine") and work together toward solving it. We also promote communal coping by attending to and reinforcing partners' recollections of how they have successfully resolved difficulties together in the past, and perhaps most directly, by requesting partner agreement and framing suggestions in terms of benefiting "you as a couple."

Procedural considerations

Several features of FAMCON for change-resistant smoking deserve special comment: First, while substantially different in format, this couple-focused treatment is fundamentally compatible with, and in some ways parallel to, recommendations in the PHS Guideline. Like the Guideline, for example, FAMCON encourages uses of pharmacologic quit aids and incorporates empirically supported elements of "practical counseling" to help smokers prepare for and sustain cessation (e.g., identifying high-risk situations, practicing coping strategies, and sometimes smoking reduction). The difference is that FAMCON redefines and repackages these elements with the couple as a primary focus of intervention and a resource for helping the smoker(s) change. Thus, while mindful of ironic processes and symptom-system fit, the consultant encourages a communal approach to decisions about which cessation strategies make most sense for the patient *and* the couple, with both partners fully involved in this process. Also like the Guideline, FAMCON pays close, personalized attention to smokers' readiness to quit, with the consultant adopting a stance not unlike Motivational Interviewing, but the focus again is more relational than individual. By involving the spouse or partner, FAMCON is well positioned to recruit real-life motivational leverage beyond the patient – a strategy used

effectively in other family-focused motivational interventions for addiction (Smith & Meyers, 2004).

Other features of FAMCON go well beyond the PHS Guideline. For example, the assessment phase includes several forms of indirect intervention, such as a *daily-diary phone-in exercise* that calls attention to key smoking-related patterns of interaction and a series of *circular and solution-oriented questions* that highlight individual and couple strengths or imply pathways to future (communal) change (Rohrbaugh et al., 2001). The diary procedure requires that both partners independently call our clinic voice mail each morning for at least 14 consecutive days, leaving answers to a series of questions about the previous day. The questions concern specific problem and solution patterns relevant to the case, as well as mood and relationship quality (e.g., How many cigarettes did you smoke yesterday? How much did you try to discourage your partner from smoking? How close and connected did you feel?). Because answers to the questions are quantitative (most on 0-10 scales), it is possible to identify couple-specific trends over time, such as the extent to which what one person does (e.g., frequency of smoking) correlates from day to day with what the other partner does (e.g., intensity of influence attempts). In addition to using this data in research, we find that presenting selected daily-diary results in the feedback/opinion session enhances the credibility of the consultant's observations and therapeutic recommendations. Couples also do a shortened version of the daily call-ins again later, for at least a week before and after their planned quit date, and this *quit diary* procedure provides a basis for regular contact during the critical transition to non-smoking. (Participants agree in advance to receive a reminder call if they neglect to phone in.)

In addition to conjoint planning and problem solving, the quit phase of FAMCON often includes one or more *enactment modules* aimed at addressing ironic processes or symptom-system fit. The principle here is to bring problem-maintaining interaction patterns into the consulting room in a way that highlights their contribution to smoking maintenance and provides an occasion for what family therapists call enactment-based intervention. Thus, if a spouse or partner persistently engages in some counterproductive support behavior such as nagging (or conversely, avoiding difficult conversations about the patient's health), the consultant may encourage the couple to enact a typical interaction sequence in the session to illustrate this, then invite the partner(s) to try a "less of the same" approach (again via enactment) to solving the problem at hand. Similarly, if smoking seems to "fit" the couple's relationship by helping the partners maintain cohesion or avoid conflict, the consultant may use an enactment-based exposure approach to help them prepare for the (often difficult) transition to tobacco-free family interaction.

In general, negative feedback cycles (reflecting symptom-system fit) appear more difficult to conceptualize, operationalize, and target for intervention than positive feedback cycles (reflecting ironic processes). This is because the former typically require more inference than the latter, particularly in regard to the presumed "function" of a symptom in regulating relationships. Also, negative-feedback cycles sometimes involve triadic (rather than dyadic) interaction sequences and can therefore be more complex. The clinical implications of symptom-system fit sometimes translate to a kind of relationship-level exposure intervention, where the consultant effectively arranges for clients to experience whatever a symptom such as smoking, drinking, or overeating helps them approach or avoid as a couple, but without engaging in the symptom (e.g., consuming a substance). For this reason we sometimes characterize working with symptom-system fit as requiring a more "muscular" approach than, say, interrupting an ironic process by getting someone to do less of some specific "solution" behavior.

During the treatment-development project we made several adjustments to the original protocol (Rohrbaugh et al., 2001), and these appear in the current manual for FAMCON with

change-resistant smokers (Shoham, Rohrbaugh & Trost, 2006). For example, we elevated the importance of communal coping (collaborative problem solving) and added the in-session enactment modules outlined above. We should also note that the name "FAMCON" may be slightly misleading due to the predominant couple-level focus of this intervention, at least as we use it with health-compromised smokers. Although the FAMCON format does allow for involvement of family members other than the spouse (e.g., adult children concerned about a parent's health), we do not typically pursue this in the smoking research unless it is evident that other close relations play a key role in problem maintenance or could be a valuable resource for change. On the other hand, involving other family members is fairly common in our work with other problems, as well as with younger patients and older adults who smoke, when interaction sequences reflecting cross-generation coalitions and other forms of triangulation figure prominently in problem maintenance.

Supporting Research

The next few sections exemplify our research with the FAMCON/social-cybernetic approach, mainly in relation to change-resistant smoking. This work both connects to and departs from the broader literatures on social influence and health-related behavior change. For example, there are clear connections to research on "social control," concerned with the regulatory role relationships play in encouraging (or sometimes hindering) a healthy lifestyle (Lewis & Rook, 1999; Tucker, 2002), and also to recent literature on "dyadic coping" (Lewis, McBride, et al., 2006; Manne, Ostroff, Sherman, Heyman, Ross & Fox, 2004; Revenson, Kayser & Bodenmann, 2004). When our work departs from these traditions, it is usually in the direction of taking dyadic rather than individual processes as a unit of analysis. Thus, a social control study aiming to explain how a partner's influence attempts affect an individual recipient might focus on disentangling the recipient's affective and behavioral responses to different influence strategies (Tucker, Orlando, Elliot & Klein, 2006; Umberson, 1992). A social cybernetic approach, on the other hand, would look for circular redundancies in the interconnected behaviors of *both* participants – what does the patient do in response to the influence attempt, how does the partner responds, what does the patient do then, and so on – and would use this formulation to fashion a dyadic description of the regulatory process. Similarly, while an interdependence theory analysis of dyadic or communal coping might emphasize internal processes like "transformation of motivation" (Lewis et al., 2006), the social cybernetic lens attaches less importance to what partners think than to what they actually *do* as participants in observable, repeating sequences of behavior.

We begin with preliminary data on FAMCON treatment outcomes, then move to studies of the three putative mechanisms of change: communal coping, ironic processes, and symptom-system fit.

Promising cessation outcomes

In a treatment development study (Shoham et al., 2006) we tested FAMCON with 20 couples in which one partner (the patient) continued to smoke despite having or being at significant risk for heart or lung disease. In 8 couples the other partner smoked as well. On average, couples participated in 8 FAMCON sessions and had quit outcomes that compare favorably to benchmarks in the literature. For example, the 50% rate of stable abstinence achieved by primary smokers at 6 months is approximately twice that cited in Fiore et al.'s (2000) meta-analysis involving other, comparably intensive interventions. For the entire sample of 28 smokers, stable co-verified cessation rates were 54% and 46% over 6 and 12 months, respectively (Table 1). Encouragingly, the FAMCON intervention appeared well suited to female smokers and smokers whose partner also smoked – two sub-groups at high risk for relapse (Figure 1). Although *ns* were small, virtually all cessation, health, and client satisfaction indices

were in the direction of better outcomes for women than men, which could reflect the fact that FAMCON, more than most other cessation interventions, explicitly takes relationship dynamics into account. Similarly, the fact that dual-smoker couples were at least as successful as single-smoker couples is consistent with the possibility that FAMCON's emphasis on relational functions of smoking (symptom-system fit) helped to neutralize the risk factor of spousal smoking status.

This pilot outcome study has obvious limitations – notably its small sample size, lack of a control group, and self-report assessment of cessation outcomes. Although having a serious health problem (e.g., a myocardial infarction) may not, on its own, increase the likelihood of giving up smoking (Andrikopoulos, Richter, Dilaveras, et al., 2001), only a randomized clinical trial can unambiguously rule out the possibility that other, individually-focused interventions would have worked just as well, or that a substantial proportion of our health-compromised smokers would have somehow managed to quit on their own.

While it was not possible to document with quantitative rigor *how* FAMCON helped smokers quit and stay quit, our clinical observations were consistent with the family systems principles on which the intervention is based. For example, cessation tended to be most successful when partners worked together and accepted the communal-coping frame for doing so; in fact, each of the three couples in which primary smokers failed to abstain at all (even for two days) essentially never bought the communal coping idea and resisted suggestions to view smoking as "our" problem (rather than just the individual smoker's problem). Cessation seemed most successful when couples found satisfactory ways to protect their relationship during the quit phase, and when the partners freely and conjointly chose and prepared for a quit date without explicit or implicit pressure from the therapist-consultant. It was also evident that rather different patterns of couple interaction served to maintain smoking in different ways for different couples, and that correspondingly different intervention strategies (e.g., encouraging a spouse to back off vs. take a stand) helped to facilitate constructive change.

Ironic processes

An ironic process occurs when persistent attempts to solve a problem keep the problem going or makes it worse (Shoham & Rohrbaugh, 1997). In the health arena, for example, research on "social control" suggests that repeated attempts by spouses and social-network members to influence health-compromising behavior such as smoking, drinking, and non-compliance with medical regimen often appear to increase those behaviors (Helgeson, Novak, Lepore & Eton, 2004; Lewis & Rook, 1999). Our own studies of couples coping with smoking and other health problems (e.g., heart disease, alcoholism) have used both self-report and observational methods to capture ironic aspects of interpersonal influence attempts (Rohrbaugh et al., 2009; Shoham & Rohrbaugh, 2006). One approach has involved adapting a self-report measure of smoking-specific partner "support" (Cohen & Lichtenstein's, 1990, *Partner Interaction Questionnaire* [PIQ]; Roski et al., 1996) for this purpose. As the quotes around "support" imply, partner behaviors intended to promote cessation do not always have supportive consequences in the sense of helping the smoker quit. In fact, a key implication of partner-support research is that negative support (nagging, criticism, etc.) tends not only to be ineffective but could also serve to perpetuate the very behavior a partner wants to eliminate. To assess possible ironic interpersonal influence, we included a bi-polar item capturing perceptions of whether the partner's net influence attempts made it easier or more difficult for a smoker to approach abstinence. In addition, by administering the modified PIQ to both partners in the couple (rather than just smokers as other studies have done), it was possible to estimate inter-partner agreement and take this into account when examining later quit outcomes (Pollak, Baucom, Palmer, Peterson, Ostbye & Stanton (2006).

Data from 34 couples with a health-compromised primary smoker (the 20 FAMCON couples plus 14 from another assessment-only study) indicate that almost half of the respondents rated the helpfulness of partner influence attempts in the negative range of our bipolar response scale (i.e., more toward "makes me want to smoke more" than toward "helps me smoke less"), which points to the likely relevance of ironic interpersonal processes. The modified PIQ results also indicate that women who continued to smoke despite having a health problem received less support for quitting from their spouse or partner than male smokers did, regardless of whether the support was positive or negative, whether the partner also smoked, or whether it was the smoker or partner who rated the partner's support behavior (Rohrbaugh, Shoham & Dempsey, 2009). At the same time, the *quality* of partner support smokers received appeared to predict later quit success or failure more for women than for men, particularly if the support was negative or seen by the patient and partner as unhelpful. A similar gender-linked pattern of prediction emerged from observational ratings of partner-demand/patient-withdraw interaction during a baseline discussion of health-related disagreements (Shoham & Rohrbaugh, 2006). These findings are consistent with a broader literature linking gender, relationships, and health – specifically, with evidence that women are generally more oriented to relationships than men (Taylor, 2006), and that associations between marital quality and health tend to be stronger for women than for men (Kiecolt-Glaser & Newton, 2001; Rohrbaugh et al., 2006; Saxbe, Repetti & Nishina, 2008).

Ironic positive feedback loops can also occur in connection with a rather different interpersonal coping strategy, common in chronic illness, where one partner tries to protect the other from distress by hiding negative emotions and avoiding potentially upsetting topics. Studies of such “protective buffering” in couples coping with heart disease and cancer suggest ironic associations with *increased* distress, not only for the person who protects but also for the “protected” spouse (Coyne & Smith, 1991; Hagedoorn, Kuijer, Buunk, DeJong, Wobbles & Sanderman, 2000; Manne, Norton, Ostroff, Winkel, Fox, & Grana, 2007). We have seen this, too, in studies of partner protection with heart failure (Trost, 2004; Butler, Rohrbaugh, Shoham & Trost, 2004). In fact, a daily-process analysis of co-variation between protection and distress found asymmetrical partner effects, wherein protection by the spouse predicted the patient’s daily distress more than patient protection predicted spouse distress (Butler et al., 2004).

Lastly, the ironic process idea helps illuminate how well intentioned *therapeutic* efforts might go wrong. This could occur, for example, when “working through” a couple complaint in supportive individual therapy makes it possible for the partners to avoid resolving the problem directly, or when pushing a spouse to change recapitulates a problem-maintaining solution applied by the clients themselves. The latter pattern is illustrated by a study comparing two treatments for couples in which the husband abused alcohol (Shoham, Rohrbaugh, Stickle & Jacob, 1998). The two treatments, cognitive-behavioral therapy (CBT) and family-systems therapy (FST), differed substantially in the level of demand they placed on the drinker for abstinence and change. Although drinking was a primary target for change in both approaches, CBT took a firm stance about expected abstinence from alcohol, using adjunctive breathalyzer tests to ensure compliance, FST employed less direct strategies to work with clients’ resistance. Before treatment began, we obtained observational measures of how much each couple engaged in demand-withdraw interaction, focusing on the pattern of wife’s demand and husband’s withdraw during a discussion of the husband’s drinking. The retention and abstinence results were striking: When couples high in this particular demand-withdraw pattern received CBT, they attended fewer sessions and tended to have poorer drinking outcomes – whereas for FST, levels of this pattern made little difference. Thus, for high-demand couples, CBT may have ironically provided “more of the same” ineffective solution: The alcoholic husbands appeared to resist a demanding therapist in the same way they resisted their demanding wives.

Symptom-system fit

Although rarely invoked in the smoking literature, family systems theory provides a useful perspective on why having a spouse or partner who smokes has negative prognostic implications for successful cessation (Doherty & Whitehead, 1986; Homish & Leonard, 2005). As noted above, the pattern we call *symptom-system* (SSF) fit occurs when a problem such as smoking or drinking appears to have adaptive consequences for a relationship, at least in the short run (Rohrbaugh et al., 2001, 2002). Thus, in couples where both partners smoke, shared smoking might create a context for mutually supportive interactions by providing soothing joint experiences or helping partners stay positive, even when they disagree. In a laboratory demonstration of this phenomenon, 25 couples in which one or both partners smoked discussed a health-related disagreement before and during a period of actual smoking (Shoham et al., 2007). Immediately afterwards, the partners used independent joysticks to recall their continuous emotional experience during the interaction while watching themselves on video. Participants in dual-smoker couples reported increased positive emotion contingent upon lighting up, while in single-smoker couples both partners (non-smokers and smokers alike) reported the opposite. Strikingly, changes in individuals' emotional experience from baseline to smoking depended mainly on a couple-level variable (partner smoking status), with no apparent unique contribution from individual characteristics such as a participant's gender, psychological distress, or even (in the case of single-smoker couples) whether he or she was smoking at the time of the assessment.

In interpreting the Shoham et al. (2007) results we speculated that dyad-level emotion regulation might help to explain why smokers have more trouble quitting and remaining abstinent when a spouse or partner also smokes. Still, the results left open the question of whether SSF in dual-smoker couples amounted simply to a surge of positive emotion in each partner as an individual, or whether something inherent in what the partners experienced *together* as a couple played a role as well. To examine more directly the couple as a dynamic, interacting unit, we re-analyzed the same data to determine if the coordination or *synchrony* of partners' moment-to-moment emotional experience also changed coincident with active smoking. The results showed that a couple-level index of *affective synchrony*, operationalized as correlated moment-to-moment change in partners' reported emotional experience, tended to increase during smoking for dual-smoker couples and decrease for single-smoker couples (Rohrbaugh, Shoham, Hasler, et al., 2009). This finding was independent of the parallel mean-level changes in emotional valence reported in Shoham et al. (2007), suggesting that couple-level synchrony represents a different aspect of partners' immediate response to smoking than simply how positive or negative they feel as individuals. In fact, the dual-smoker couples in our sample tended to increase either their affective synchrony *or* their absolute level of positive emotion in response to laboratory smoking, but not both.

Taken together, these results suggest that emotional correlates and consequences of change-resistant smoking have an important social dimension, depending not only on biological or psychological characteristics of the individual smoker, but also on the specific relational context in which smoking occurs. An immediate practical implication of the SSF idea is that clinicians can usefully intervene by helping couples in smoking partnerships realign their relationship in ways not organized around substance use.

We-talk and communal coping

Finally, some intriguing preliminary data on *communal coping*, a central FAMCON mechanism of action, come from automatic text analysis of participants' speech before and during the intervention. In theory, FAMCON aims to mobilize communal coping by encouraging partners to define the smoking problem as "ours" rather than "yours" or "mine" and take

cooperative action to solve it (Lyons et al, 1998; Shoham et al., 2006). Building on evidence that first-person plural pronoun use (*we*-talk) marks effective relational problem solving (Seider, Hirschberger, Nelson & Levenson, 2009; Simmons, Gordon & Chambless, 2005) and has prognostic significance in couples coping with heart failure (Rohrbaugh et al., 2008), we obtained conjoint speech samples from health-compromised smokers and their partners before and during the FAMCON intervention, then obtained pronoun counts from transcripts of each sample using Pennebaker et al.'s (2001) Linguistic Inquiry Word Count (LIWC) software. Of interest was whether pre-treatment *we*-talk, and especially *change* in *we*-talk during the course of treatment, would predict later cessation outcomes. To check this, we examined outcome in relation to partners' *we*-talk during FAMCON session 4 (immediately following the opinion/intervention) and the final session, using word counts from a pre-treatment marital interaction task as a baseline covariate. Results for the 20 treated FAMCON couples described above show that increases in *we*-talk by both partners during therapy (controlling for baseline *we*-talk) predicted stable cessation one year later (Rohrbaugh et al., 2010). This result provides preliminary documentation of communal coping as an empirically supported change mechanism and highlights the potential utility of automatic text analysis in intervention research.

Other Clinical Applications

While working in a couple format with health-compromised smokers and clear-cut behavioral outcomes is useful for research, we also apply the FAMCON social-cybernetic approach clinically to other client configurations and other clinical problems. In fact, when other complaints or behavioral risk factors (e.g., depressed mood, hypertension, obesity) appear intertwined with tobacco use in couples, we typically try to address those additional complaints as well.

Table 2 outlines a generic version of FAMCON we have used to help couples and families resolve problems related to conditions such as alcoholism, heart disease, dementia, depression, cancer, traumatic brain injury, bi-polar disorder, metabolic syndrome, post-traumatic stress, and prescription drug abuse. The generic FAMCON approach is essentially similar to the smoking protocol in both concept and format. In other words, regardless of the specific behavioral or emotional complaint, we begin with a careful assessment of social-cybernetic problem maintenance, then initiate intervention in the form of an expert "opinion" aimed at interrupting problem patterns and mobilizing communal resources for change. The main variations from the smoking protocol involve (a) greater attention in the preparation phase to defining the relevant client system (whom to see in what format), (b) flexible expansion to triadic and structural formulations of problem maintenance (e.g., cross-generation coalition sequences involving other family members or helpers), and (c) more reliance on strategic reframing for interrupting social-cybernetic patterns. In addition, when the target complaint does not involve substance use, the invitation to consider a specific behavior change (offered at the end of the opinion session) is more likely to focus on interrupting some specific aspect of problem maintenance than on initiating change in the problem itself by setting a quit date.

Reflections and Directions

Having conveyed our enthusiasm for social-cybernetic analyses of health behavior problems and the FAMCON intervention format, we will now stand back a bit and reflect on both the strengths and limitations of this approach as we see them. In keeping with Oxford editor Friedman's charge to contributors, we will also attempt to capture some "deeper truths" about important things we have come to understand, including how our approach fits (and doesn't fit) with broader currents in the field and where we would like to go from here.

Deeper truths

Cutting to the chase, here are five “truths” we regard as useful in a psychosocial approach to change-resistant health problems, especially when simpler, more direct approaches have failed. (These are not the only truths, or even the most important truths we can construct – and of course they may not be “truths” at all if the meaning of events and behavior is mainly a matter of social construction.)

Truth 1. How a problem persists, as an aspect of current social interaction, is more relevant to intervention than how the problem originated. A paper by our mentors from the ‘70s and ‘80s captures nicely this basic assumption of the social-cybernetic approach:

Regardless of their origins and etiology – if, indeed, these can ever be reliably determined – the problems people bring [to clinicians] persist only if they are maintained by ongoing current behavior of the client and others with whom he interacts. Correspondingly, if such problem-maintaining behavior is appropriately changed or eliminated, the problem will be resolved or vanish, regardless of its nature, or origin, or duration (Weakland et al., 1974, p. 144).

Truth 2. What one calls psychosocial intervention is not a trivial matter: With health complaints, the term “consultation” is usually preferable to “treatment,” “counseling,” or (perhaps especially) “family therapy.” In our experience, it is rarely a good idea to push people toward acknowledging and addressing relationship problems in the context of helping them cope with physical illness, even when such problems may be obvious to an observer. In fact, suggesting or implying that patients might benefit from couple or family “therapy” can easily turn ironic, as it is likely to arouse resistance when partners or family members avoid overt conflict with each other (a not uncommon correlate of chronic somatic complaints) or if one member of the client system favors a “therapy” solution while another does not. A better approach is to frame the clinical encounter as an in-depth “consultation” about how to handle the complaint, where several heads are better than one and a communal orientation by the people involved will increase the likelihood of success.

Truth 3. To understand a clinical problem and plan intervention, it is more useful to investigate what people do than what they have. From our perspective, attempting to identify and explicate psychological “disorders” is usually more handicapping than helpful: As a rule, we prefer to focus not on what people *have* (in terms of some disorder), but on what they *do*. Asking what people *do* when they have problem such as depression, anxiety, or pain is a short step from following on with questions about what other people do in response. This leads to what happens next, and voila – a circular sequence of interaction may emerge, suggesting a social-cybernetic formulation of how (and why) the problem persists. In this way, the locus of problem maintenance moves more easily from inside to outside the skin, where we think it often belongs.

Truth 4. The path to clinical change is often bumpy, appearing more discontinuous than continuous. Change follows from interrupting what people habitually do with each other, and their doing something differently (less of the same) may require starts and stops and even minor crises before new patterns of interaction take hold to replace the old ones.

Truth 5. The more entrenched a problem and the interaction patterns supporting it, the more helpful are indirect, strategic approaches to intervention. This includes tactics such as using metaphor, framing suggestions in terms consistent with people’s own idiosyncratic language and preferred views, restraining people from precipitous change, prescribing the very experience clients aim to avoid, or providing feedback about change-resistant patterns by having clients listen from behind a mirror to the clinical team discussing their situation. Also useful can

be direct, enactment-based strategies where the clinician elicits, then attempts to restructure, problematic interaction patterns in the consulting room. Whatever the approach, interrupting entrenched relational patterns usually requires more than educating clients about their condition or teaching them better coping skills.

In the next (and final) few sections of the essay we will reflect on a number of challenges we face and outline some avenues we hope to explore in future work.

Scientific challenges

A central scientific challenge is to investigate the efficacy and effectiveness of FAMCON with specific clinical populations in randomized clinical trials. Starting with health-compromised, change-resistant smokers, one approach could compare FAMCON to a more accessible, individually focused smoking cessation intervention based on the current Public Health Service Clinical Practice Guideline (Fiore et al., 2008). A limitation, however, is that the two treatments would also differ in dosage or intensity, a confound necessary from a public-health standpoint to test whether a best-shot approach such as FAMCON justifies the additional time and expense involved. Alternatively, one could aim to maximize internal validity by comparing FAMCON to an equally intensive control intervention that perhaps even allows spouse participation in some way.

A related line of inquiry is to investigate *for whom* the intervention works best, or is most indicated – a question bearing on the possibility of stepped care. In general, we hypothesize that FAMCON will have the largest effect sizes relative to standard individually-focused treatments (a) when the problem or complaint has not changed in response to other intervention efforts, (b) when the principal complainant is female, and (c) when participating partners or family members are concordant for the problem or risk behavior targeted for intervention.

We would also like to explore systematic applications of FAMCON to other pressing health problems, particularly metabolic syndrome and treatment-resistant post-traumatic stress disorder. With metabolic syndrome (characterized by abdominal obesity, elevated blood pressure, blood fat disorders, and insulin resistance), a key initial step is to assess and define a patient-specific set of problem-maintaining *behaviors* related to eating, exercise, stress management, or other aspects of medical regimen that, by their commission or omission, help to perpetuate the physiological syndrome. The next step, of course, is to identify couple or family interaction patterns in the form of ironic processes or symptom-system fit (e.g., concordant overeating) that help to maintain the targeted patient behaviors. This in turn sets the FAMCON stage for interrupting problem maintaining patterns while promoting communal coping by the people involved.

Almost by definition, PTSD is a condition that encourages linear-etiological accounts of the presenting symptoms and individually focused intervention. When PTSD symptoms persist, however, a social-cybernetic analysis focused on current, ongoing social interaction may suggest alternative avenues of intervention. For example, a spouse or family members may be responding to a combat veteran's distress in ways that inadvertently help to perpetuate it, or a veteran may disengage from the very people who could help most because "they can't understand what I've been through." Careful tracking of interaction sequences in the FAMCON format can open possibilities for productive pattern interruption and revitalized communal coping by the veteran and his or her important others.

The most difficult scientific challenge is to study *how* these interventions work. In pursuing this we hope to make more and better use of idiographic methods, both to examine mechanisms of action in the FAMCON intervention format, and to examine basic aspects of

social-cybernetic problem maintenance. Although nomothetic group designs (like RCTs) have dominated behavioral research for over a century, findings from such analyses of *inter-individual* variation generalize poorly to understanding and explaining *intra-individual* variation at the level of any given case (Molenaar, 2004). In other words, what applies for everyone on average says little about anyone in particular. Without demeaning the importance of aggregate mediation analyses, we see underappreciated benefits of idiographic strategies that illuminate rather than obscure the anatomy of case-level behavior change. Fortunately, the FAMCON format, with several weeks of assessment preceding the initiation of intervention in a carefully prepared feedback session, provides a convenient interrupted time-series framework for examining idiographic (case-level) questions. The central idiographic questions are (a) whether fluctuations over time in relevant social-process variables (e.g., influence and protection attempts, relational cohesion) correlate as predicted with fluctuations in target risk behaviors within any given case; (b) whether changes in problem-maintaining social-cybernetic patterns are demonstrable following intervention in any given case; and (c) whether dynamics of social-cybernetic problem maintenance, reflected in co-variation over time between relationship and risk-behavior variables, change from before to after intervention as predicted. To address these questions we envision analyzing time series data from individual FAMCON cases using both straightforward statistical techniques (Borckardt, Nash, Murphy, Moore, Shaw & O'Neil, 2007) and more sophisticated ones (Hamaker, Dolan & Molenaar, 2005).

A more basic challenge is how best to study social-cybernetic processes *per se*, apart from whether or not they change in response to intervention. To document an ironic process, for example, one needs to establish bi-directional functional links between the persistent application of some solution behavior and the persistence or exacerbation of the very problem that solution is intended to remedy. Moreover, given the idiographic nature of ironic problem maintenance (i.e., that drastically different solution patterns can maintain the same clinical problem), a truly relevant methodology must allow for heterogeneous problem-solution dynamics in different cases and situations – even with the same clinical problem. This implies a methodology capable of detecting and documenting *within-case* associations between problem and solution patterns (either within or between people) through repeated observations over time. Thus, if repeated applications of some solution behavior (e.g., exhorting one's child or partner to change) co-vary over time with the frequency or intensity of some targeted problem behavior, we have – *for that case* – an empirical pattern consistent with ironic process. Further quantitative refinements such as testing for lagged associations between solution and problem components can strengthen the inference that more solution leads (ironically) to more of the problem, and vice versa. Another potentially promising methodology involves using state space grids to examine how dyadic systems change, often discontinuously, from one state to another (Hollenstein, 2007). In dynamic systems terms, any given system tends to stabilize in only a small subset of all possible states or patterns: *Attractors* are stable and recurrent states to which a system frequently returns (e.g., a particular problem-solution loop, or a period of reciprocated positivity), and *phase transitions* involve a period of increased behavioral variability and unpredictability as the system reconfigures toward a different attractor state.

Several current projects in our laboratory apply these ideas. For example, in studies of heart patients and change-resistant smokers we use daily-diary reports to document ironic within-couple associations between one partner's smoking and perceptions of the other's influence attempts, and likewise between the two partners' protective buffering and distress. Another methodology uses micro-analytic, stimulated-recall data (based on joy-stick ratings by couples watching themselves on videotape) to link moment-to-moment fluctuations in one partner's ongoing intention to protect vs. engage with the other partner's experience of positive vs. negative affect. A common aim of these methods is to examine dynamic within-couple

associations between health-related complaint behaviors (here, smoking and negative affect) and a spouse's attempted solutions to those complaints.

Clinical and conceptual challenges

As a clinical matter, it is fair to ask when and for whom the social-cybernetic FAMCON model might *not* apply. First, we see this approach as most suited to stable, persistent problems, where clients or clinicians in some way feel stuck; it is probably least suited to crisis situations, health transitions (e.g., adapting to a cancer diagnosis), or prevention aims – although some forms of consultation or education based on other (e.g., social learning or bio-medical) assumptions might well be useful in those contexts. Second, the FAMCON approach may not be ideal as a first line treatment: If other, more straightforward, empirically-supported approaches work, we should use them. Fourth, because communal coping is a central change mechanisms, FAMCON seems to work best when there are stable relationship on which to build: Having to treat couple problems first can be an overload.

Finally, one might ask: What are the most common and telling criticisms of this model, and how do we respond to them?

Criticism 1. This is a superficial, oversimplified theory of problems and change: Interrupting problems isn't enough because people will just get stuck again in the same old ways. The idea here is that the social-cybernetic model makes unrealistic assumptions about how people change and/or ignore aspects of the clinical situation that may be crucial to appropriate intervention. For example, some critics find implausible the rolling-snowball idea that a few well-targeted interventions producing small changes in clients' interactions can kick off a process that will lead to significant shifts in the problem pattern; others grant that brief interventions sometimes produce dramatic changes, but doubt that those changes last. Not surprisingly, clinicians from competing theoretical persuasions object to our ignoring personality and past relationship dynamics that, from other perspectives, may be fundamental to the problems at hand. For example, a psychodynamic clinician might be skeptical about how interrupting a demand-withdraw sequence of marital interaction could possibly address a problem rooted in one partner's insecure attachment or life-long fear of intimacy. Defenders of a social-cybernetic approach would reply that such "iceberg" assumptions about what lies beneath a couple's complaint serve only to complicate the clinician's task and make meaningful change more difficult to achieve.

Criticism 2. The approach discounts individual determinants of behavior. It is well known that stable individual differences in personality (e.g., Big 5, Type A and D) predict health behavior and well being, as do individually based motivational constructs like cognitive dissonance and psychological reactance. How, then, can the FAMCON social-cybernetic approach basically ignore such factors? In the past, we have written about individual constructs such as "psychological reactance" in connection with some of the same problems and interpersonal phenomena described here (Rohrbaugh, Tennen, Press & White, 1981; Shoham-Salomon, Avner & Neeman, 1989). We also appreciate the obvious relevance of constructs like "attachment security" (Shaver & Mikulincer, 2007) and "autonomy support" (Williams, McGregor, Sharp, et al., 2006) to health behavior change in close relationships. The problem we have with embracing or integrating such ideas with a social-cybernetic analysis is that individual constructs are simply too seductive: They distract attention from circular, complimentary relational aspects of the situations in which a particular problem is embedded. If we are "wired to connect," as the Goleman quote cited earlier suggests, we may also be wired to think individually and linearly, at least insofar as prevailing individualistic cultural injunctions might shape the relevant neural circuitry. Identifying the social-cybernetic sequences crucial to FAMCON requires deliberately setting aside more familiar and convenient individualistic

schemas – and this doesn't come easily. In actuality, relatively stable individual factors – especially participants' preferred views of the problem, themselves, and each other – *do* play an important role in FAMCON intervention: That role is secondary, however, as we are more likely to accept and *use* a particular view to frame suggestions for pattern interruption rather than treating the view itself (even if it appears problematic) as a target for change. (We are reminded here of a remark attributed to family therapy pioneer Carl Whittaker, who described his own conceptual evolution as nearing a point where “I don't ‘see’ individuals any more – I see only fragments of families.”)

Criticism 3. By focusing only on pattern interruption, this approach fails to teach people the skills and insights they will need to solve similar problems in the future. For better or worse, it is true that our approach attaches little importance to traditional curative factors such as understanding, skill acquisition, and emotional catharsis. The focus is entirely on interrupting ironic processes in the present, with no assumption that insight or understanding is necessary for such interruption to happen. History may be relevant to clients' views, which are in turn relevant to how a therapist encourages less-of-the-same solution behavior; however, “interpretations” (or frames) offered in this context are pragmatic tools for effecting change, not attempts to illuminate any psychological “reality.”

Criticism 4. Because the therapist/consultant is not always explicit with clients about the rationale for strategic intervention, the social-cybernetic intervention approach is unnecessarily manipulative. In our view, responsible behavioral intervention is inherently manipulative, and as Truth 5 above suggests, the strategic stance is most indicated when clinical problems or the relational patterns supporting them have been resistant to change. We prefer to create situations in which people construct their own explanations of why change happens and endures – this is in contrast to imposing our own explanations, as psycho-educational approaches typically do. We also assume that constructive change is more dependent upon getting people to *do* something differently than to think or feel differently. In other words, cognitive and emotional change is more likely to follow behavior change than vice versa.

Criticism 5. Because systems of human behavior are open rather than closed, cybernetic concepts originally applied to closed systems are not truly applicable. In a strict sense this is true, as Moyer (1994), McHale and Sullivan (2008) and others have pointed out. On the other hand, the conceptual abstractions of ‘open’ systems theory do not translate easily to tangible operations and clinical interventions. As a conceptual road map guiding where and how to intervene, we much prefer the more pragmatic (if epistemologically flawed) social cybernetic metaphors outlined above.

Coda

Commentators from de Toqueville to Malcolm Gladwell have noted our culture's preoccupation with the individual, which reaches almost caricature proportions in the prevailing paradigms of psychology and psychiatry. The social-cybernetic ideas we present here challenge individualistic explanations of problematic behavior and behavior change by shifting attention from individuals to relationships and offering alternatives to medication, psycho-education, skill-building, and cognitive-behavioral intervention.

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Table 1

FAMCON Cessation Outcomes by Smoking Status and Follow-up Interval

Follow-up interval	Primary smokers (n=20)	Secondary smokers(n=8)	All smokers (n=28)
30-day abstinence (point prevalence)			
1 month	55%	75%	61%
6 months	50	63	54
12 months	40	63	46
Percent abstinent days during follow-up interval			
1 month	$M = 65 (SD = 43)$	$M = 75 (SD = 46)$	$M = 68 (SD = 43)$
6 months	53 (46)	73 (46)	58 (46)
12 months	48 (47)	68 (47)	54 (47)

From Shoham, V., Rohrbaugh, M.J., Trost, S.E., & Muramoto, M. (2006). A family consultation intervention for health-compromised smokers. *Journal of Substance Abuse Treatment, 31*, 395-402.

*Table 2**A Generic Template for Family Consultation (FAMCON) Intervention*

I. Preparation (pre-consultation phone contact)

- Decide whom to see in what format
- Frame clinical work as “consultation” rather than “therapy”

II. Assessment (2 sessions plus daily phone-ins)

- Define complaint(s) in behavioral terms
- Investigate solution patterns (ironic processes), structural alignments, and symptom-system fit
- Understand clients’ preferred views
- Intervene indirectly (e.g., to promote communal coping) with circular and solution-focused questions
- Invite daily diary phone-ins for 14+ days (optional)
 - Track complaint and solution/relationship patterns
 - Identify patterns of co-variation over time, especially patterns relevant to problem maintenance
- [Prepare opinion]

III. Feedback, opinion (1 session)

- Compliment couple/family strengths, noble intentions
- Frame change as difficult but offer reasons to be optimistic
- Present selected diary data to highlight relevant patterns (optional)
- Offer direct or indirect suggestions for ‘less of the same’ solutions (interrupting ironic processes)
- Highlight relational consequences of change (accommodating symptom-system fit)
- Encourage communal problem-solving and support (by ‘you as a couple’)
- Invite couple-level consideration and/or commitment to a specific change (e.g., a quit date for smokers)

IV. Follow-up (2-7 sessions)

- Adjust suggestions and tactics according to clients’ response to intervention
- Introduce enactment modules to interrupt ironic interaction patterns or challenge symptom-system fit (optional)
- Nurture and solidify incipient change

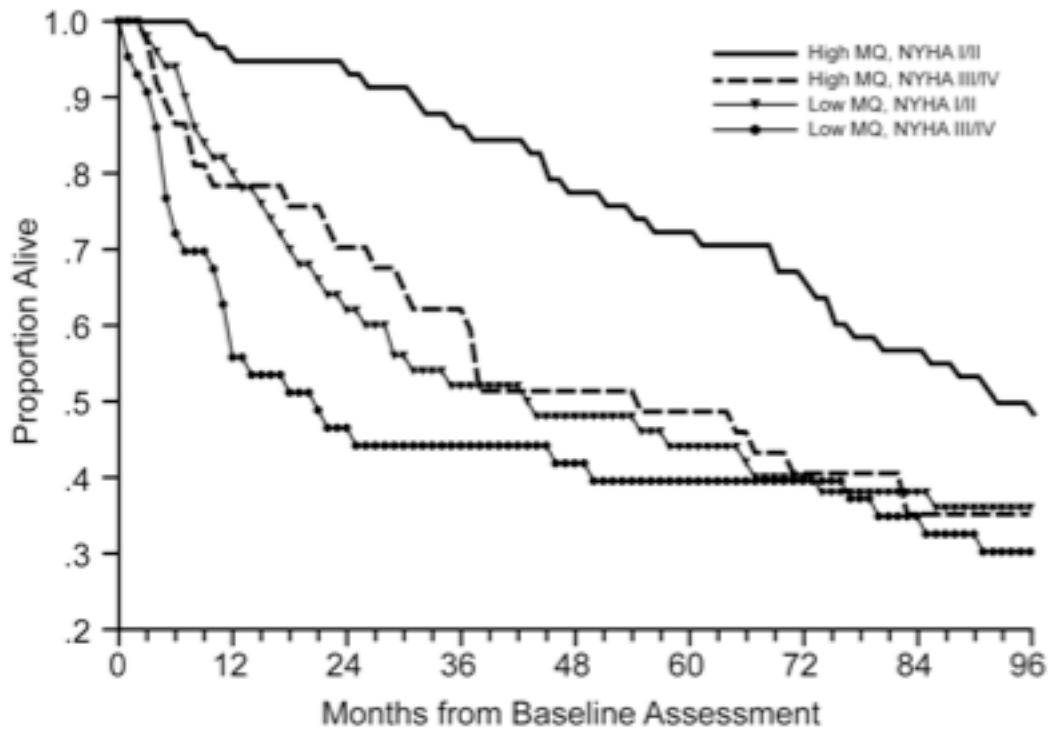


Figure 1. Patient survival for sub-groups formed by crossing high/low marital quality (MQ) and high/low HF severity (NYHA class): High MQ, NYHA I/II (n = 58), High MQ, NYHA III/IV (n = 38), Low MQ, NYHA I/II (n = 50), Low MQ, NYHA III/IV (n = 43). Cox regression shows significant main effects for both marital quality and NYHA class ($p < .001$), and the two predictors do not interact.

From Rohrbaugh, M.J., Shoham, V., & Coyne, J.C. (2006). Effects of marital quality on 8-year survival of patients with heart failure. *American Journal of Cardiology*, 98, 1069-1072.

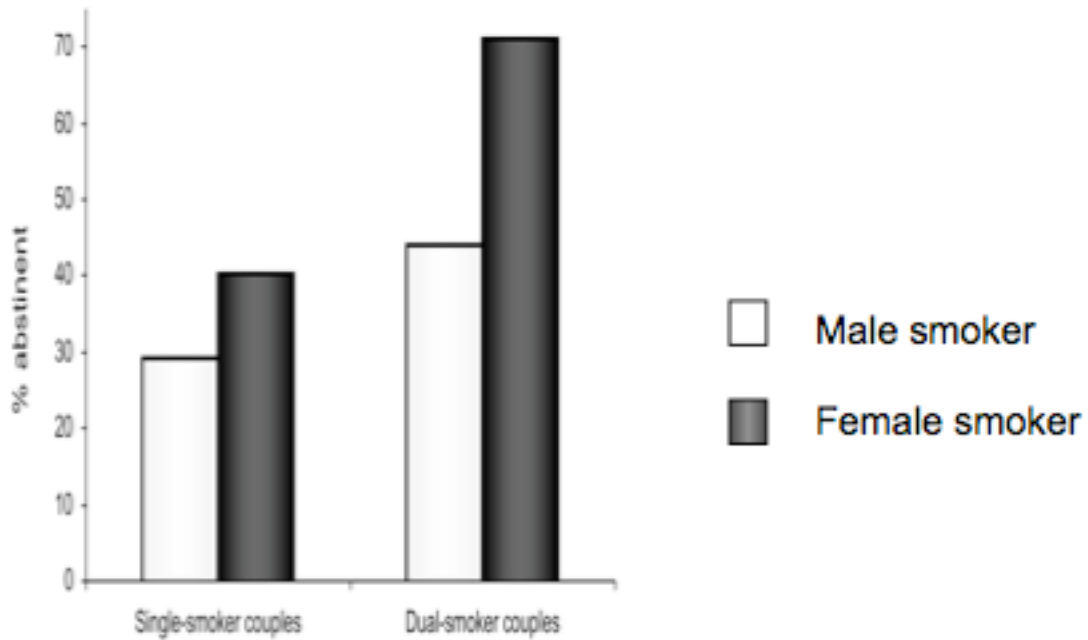


Figure 2. FAMCON 12-month point-prevalence cessation rates by gender and partner smoking status.

From Shoham, V., Rohrbaugh, M.J., Trost, S.E., & Muramoto, M. (2006). A family consultation intervention for health-compromised smokers. *Journal of Substance Abuse Treatment, 31*, 395-402.