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Marital Interaction in Alcoholic and Nonalcoholic Couples: Alcoholic Subtype Variations and Wives' Alcoholism Status

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Abstract

The authors examined problem-solving marital interactions of alcoholic and nonalcoholic couples ($N = 132$). Four alcoholic groups (husband alcoholic with antisocial personality disorder or not, paired with alcoholic or nonalcoholic wives) were compared with each other and with a both-spouses-nonalcoholic group. Consistent with the alcoholic subtypes hypothesis, couples with an antisocial alcoholic husband had higher levels of hostile behavior regardless of wives' alcoholism status. In contrast, rates of positive behaviors and the ratio of positive to negative behaviors were greatest among couples in which either both or neither of the spouses had alcoholic diagnoses and were lowest among alcoholic husbands with nonalcoholic wives. Discussion focuses on possible mechanisms linking antisocial alcoholism and discrepant alcoholic diagnoses to poorer marital outcomes.

Keywords

alcohol and marriage; alcoholic subtypes; discordant alcoholism diagnoses; antisocial alcoholism; marital interaction

The destructive effects of alcoholism on marital outcomes have been well documented (for reviews, see Marshal, 2003; Roberts & Linney, 2000). For example, Leonard and Roberts (1998) found that both husbands' and wives' drinking were predictive of lower marital quality and increased marital instability over 1 year. Also, Chilcoat and Breslau (1906) found that presence of an alcohol use disorder predicted subsequent divorce in a sample of young adults (see also Amato & Rogers, 1997; Kessler, Walters, & Forthofer, 1998; Prescott & Kendler, 2001). Existing evidence demonstrates positive relationships between alcoholism and marital conflict (e.g., Whisman, Sheldon, & Goering, 2000) as well as marital violence (Leonard,

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1999, 2002), which suggests that important mechanisms for the destructive effects of alcoholism on marriage are through negative marital interaction processes. Thus, identification of the interaction processes associated with marital disruption in alcoholic couples may reveal targets for intervention efforts designed to prevent negative marital outcomes. Possible mechanisms may only emerge when researchers understand heterogeneity among couples affected by alcoholism. Accordingly, in the present study, we examined a community sample of alcoholic men in order to evaluate whether and how the marital interactions of alcoholic couples differ across alcoholic subtypes and also to examine the role of the wife's alcoholism status on couples' problem-solving interactions.

Marital Interaction in Alcoholic (ALC) Couples

Behavioral observational methods have been used in previous research to understand how marital interaction processes underlie the observed associations between alcoholism and marital outcomes. Whereas early research found few differences between marital interactions of ALC and distressed nonalcoholic (NA) couples (e.g., Becker & Miller, 1976), subsequent studies produced more informative findings as the study designs grew in sophistication. These studies have drawn from the broader literature on marital interaction to focus on couples' behaviors in the context of marital conflict discussions (for reviews, see Fincham, 2003; Gottman & Notarius, 2000; Kiecolt-Glaser & Newton, 2001) and have examined the possibility that ALC couples have deficits in marital problem solving that exacerbate the effects of marital conflict. Multiple comparison samples, including couples who are not experiencing marital problems, as well as multiple observation contexts have also been used in early studies. For example, Billings, Kessler, Gomberg, and Weiner (1979) compared the marital interactions of ALC couples with both maritally distressed-NA and nondistressed-NA couples as they enacted four conflict resolution scenarios during drink and no-drink conditions. Across conditions, the ALC and distressed-NA couples were more hostile and less friendly than the nondistressed-NA couples. Yet, no statistically significant differences were observed between the ALC and distressed-NA couples.

Similar findings were reported by Jacob and colleagues. For example, Jacob, Ritchey, Cvitkovic, and Blane (1981) studied ALC and NA couples as they discussed two areas in which both spouses had expressed a desire for change, with half the couples in each group provided with alcoholic beverages. Across conditions, the ALC couples showed greater negative affect and less positive affect than the NA couples, and their negative affect was higher in the drink versus the no-drink condition. In contrast, the NA couples showed higher levels of instrumental behaviors (e.g., problem solving) than the ALC couples (see also Haber & Jacob, 1997; Jacob & Krahn, 1988).

Marital Interaction in ALC Couples: Importance of ALC Subtypes

In summary, these studies show that the marital interactions of ALC couples are as negative as interactions in distressed married couples, which differ from the interactions of happy, nondistressed couples. However, the studies are limited by the fact that they have treated ALCs as a homogeneous group. Much theoretical and empirical work of the past decade recognizes that alcoholism is a heterogeneous condition (Babor, 1996; Zucker, Ellis, Bingham, & Fitzgerald, 1996). Yet, as noted by McCrady and Epstein (1995, p. 164), "existing research on heterogeneity of alcoholic couples has not drawn on the newer research on alcoholic subtypes."

An initial effort to consider the effects of alcoholism subtypes on couples' interactions was completed by Jacob and Leonard (1988), who reanalyzed data from the Jacob and Krahn (1988) study and distinguished between ALCs who had episodic versus steady drinking patterns. There were no differences between the subtypes in positive marital interaction behaviors, but episodic drinking husbands were more negative than their wives in the drinking

condition, whereas steady drinking husbands were less negative than their wives in the drinking condition. Jacob and Leonard interpreted these findings as suggesting that episodic drinkers represented the hostile-antisocial alcoholic subtype identified in earlier work (e.g., Cloninger, Bohman, & Sigvardsson, 1981; Jellinek, 1960), whereas the steady drinkers represented a more dependent personality style.

Another approach to subtypes was followed by Murphy and O'Farrell (1994, 1997), who studied 90 couples with a newly abstinent ALC husband and used the Conflict Tactics Scale (Straus, 1979) to identify physically aggressive and nonaggressive male alcoholics. In the initial report, the physically aggressive ALCs scored higher than the nonaggressive ALCs on self-reports of antisocial behavior and verbal aggression, but the two groups did not differ on marital disharmony or marital conflict. The follow-up study compared the problem-solving interactions of these two groups and found that the couples with physically aggressive husbands showed higher rates of aversive-defensive behaviors than the nonaggressive couples, but the groups did not differ on facilitative-enhancing behaviors. Also, the physically aggressive husbands showed greater negative reciprocity than the nonaggressive husbands. In both groups, wives showed higher rates of facilitative-enhancing behaviors than did husbands.

A more comprehensive approach to subtypes considers not only single behavioral indices, such as drinking styles or marital aggression, but also focuses on general patterns of antisocial adjustment to distinguish between antisocial alcoholics (AAL) and non-antisocial alcoholics (NAAL). This conceptualization of the AAL subtype is based on lifetime antisocial behavior. This particular subtype, compared with NAALs, is characterized by earlier onset of drinking, higher levels of drinking-related problems, and other psychopathology, including depression (Zucker, Ellis, Bingham, & Fitzgerald, 1996; see also Zucker, 1994; Zucker, Fitzgerald, & Moses, 1995). There is also evidence for deficits in executive cognitive functioning among men with antisocial personality disorder (Stephens, Kaplan, & Hesselbrock, 2003), suggesting that AALs may have poorer problem-solving skills. Such deficits may increase the likelihood of escalation in marital conflicts. The antisocial pattern is also associated with a lack of empathy, care and concern for others, and a tendency to hold others responsible for one's life problems, which in the case of marital interactions would be associated with blaming their wives, criticizing them, and being unresponsive and inconsiderate of their needs.

Consistent with this formulation, Ichiyama, Zucker, Fitzgerald, and Bingham (1996) examined differences in ratings of self and spouse in a community sample of AAL, NAAL, and NA men. AALs were more blaming and less trusting of their spouses than were both NAALs and NAs. Similar results were obtained in an observational study by Jacob, Haber, Leonard, and Rushe (2000). Family dinnertime conversations of the high antisocial (HAS), low antisocial (LAS), and control families were audiotaped for 2 weeks. Wives of HAS ALCs were less positive and less instrumental than were wives of LAS ALCs. In addition, the HAS families showed lower levels of positive, disagree, and instrumental behaviors than families of control husbands. Jacob et al. (2000) interpreted these findings as evidence for greater disengagement among HAS ALC families (see also Jacob, Leonard, & Haber, 2001).

Marital Interaction in ALC Couples: Does Wife's Alcoholism Status Make a Difference?

In contrast to the large literature on husbands' alcoholism status, relatively few studies have examined what effect, if any, the wife's alcoholism status has on marital interaction. Yet, there is evidence that wives' drinking may be an important consideration (e.g., Haber & Jacob, 1997). For example, Kelly, Halford, and Young (2002) formed three groups of couples according to marital distress and wives' problem drinking: (a) neither marital distress nor wife problem drinking; (b) marital distress, with no wife problem drinking; and (c) marital distress

with wife problem drinking. Couples were videotaped during a problem-solving task, and comparisons across the three groups indicated that women in the two marital distress groups, both with and without drinking problems, showed higher levels of negative listening, criticism, withdrawal, and justification, and lower levels of positive listening than women in the nondistressed group. Unfortunately, the investigators did not provide the alcohol status of the husbands. However, men in the two distressed groups showed higher levels of negative speaking and criticism than men in the nondistressed couples. These findings are consistent with research with ALC husbands in showing that lower levels of positive behavior and higher levels of negative behavior are associated with marital distress and that couples with problem drinking are similar to other distressed couples. However, the findings do not differentiate the distress effect from the problem-drinking effect, and, because husbands' alcohol status was not assessed, they do not address the effect that husbands' and wives' alcoholism in tandem might have.

A contrasting pattern is suggested by the "drinking partnership" concept advanced by Roberts and Leonard (1998), which emphasizes the importance of discrepancy and concordance between spouses' drinking patterns. In a sample of couples who had been married for 1 year, Roberts and Leonard (1998) identified five types of couples on the basis of wives' and husbands' drinking behavior. Discrepant-use couples (i.e., couples in which the husband but not the wife engaged in heavy drinking) were characterized by high levels of verbal aggression reported by the husband along with low levels of marital adjustment and high depression levels reported by wives. In a more recent study, Mudar, Leonard, and Soltysinski (2001) found that concordant couples (i.e., couples in which both husband and wife consumed or did not consume alcohol) had higher marital satisfaction than discordant couples (i.e., couples in which either the husband or the wife only consumed alcohol; see also Leadley, Clark, & Caetano, 1999; Quigley & Leonard, 2000).

Purpose of the Present Study

Taken together, the available evidence suggests that (a) husbands' ALC subtype and (b) wives' alcoholism status may have important implications for marital interaction. In the present investigation, we examined the effects of husband's antisocial personality diagnosis and concordance between spouses on alcoholism diagnosis on the marital interactions of ALC and NA couples. Drawing on previous observational research with ALC couples, the following hypotheses were tested:

Hypothesis 1: Couples with an AAL husband will show higher levels of negative behavior (i.e., hostility and avoidance), lower levels of positive behavior (i.e., total positive behaviors and the ratio of positive to negative behaviors), and less neutral problem talk than (a) couples with an NAAL husband and (b) couples with an NA husband.

Hypothesis 2: Couples with *discordant alcoholism diagnoses*, in which ALC husbands are married to wives without alcoholism, will show higher levels of negative behavior and lower levels of positive behavior than couples who are concordant, either with both spouses or with neither spouse having an alcoholism diagnosis.

Hypothesis 3: The effects of husbands' antisocial alcoholism will be stronger among couples with discordant alcoholism diagnoses. This hypothesis is speculative, based on the assumption that the negative effects of antisocial alcoholism will be compounded by discordant couple alcoholism status, so that elevated levels of marital conflict among couples with an AAL husband will be further exacerbated by the presence of a wife who is NA.

Method

This research is part of the Michigan Longitudinal Study (MLS; Zucker et al., 2000), an ongoing, long-term prospective multimethod investigation of ALC and NA families. A community-based sample of initially intact families was recruited using three interconnected techniques. One identified men on the basis of a drunk driving conviction with a high blood alcohol concentration (0.15% if a first conviction, 0.12% if not the first). All men made a probable or definite diagnosis for alcoholism using Feighner Diagnostic criteria (Feighner et al., 1972) and were later confirmed with *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., *DSM-IV*; American Psychiatric Association, 1994) criteria to have alcoholism. Families were required to have at least one son in the 3- to 5-year-old age range, and both biological parents were required to be living with the child at the time of recruitment. Mothers' substance use status was free to vary. Second, a contrast/control group of families with no lifetime substance use disorder for either parent was recruited through community canvassing in the same neighborhoods as the families of the drunk driver. Third, another subset of substance-abusing parents meeting similar inclusion criteria was discovered during the community canvass, and they were recruited also. Census data from the four counties where recruitment took place indicated that less than 4% of the population was non-Caucasian, and the present sample consists of all Caucasian, non-Hispanic participants.

After initial recruitment and assessment, individuals participated in multisession assessments every 3 years. Data collection was completed by staff blind to participants' diagnostic status (Zucker et al., 2000). All families were compensated for their participation.

Participants

One hundred thirty-eight couples completed the videotaped marital problem-solving task. Of these couples, 94 had a husband with a lifetime *DSM-IV* diagnosis of alcohol use disorder, and 44 had a husband with no alcohol use disorder. ALC husbands had a mean age of 37.95 years ($SD = 5.64$) and had an average of 13.24 years ($SD = 2.11$) of education. Their wives had a mean age of 35.49 years ($SD = 4.32$) and had an average of 13.33 years ($SD = 2.11$) of education. These couples had an average yearly family income of \$45,889 ($SD = \$20,730$), had been married for an average of 12.20 years ($SD = 3.61$), and typically had two or three children (range = 1–5). NA husbands had a mean age of 35.45 years ($SD = 3.93$) and had an average of 14.30 years ($SD = 2.02$) of education. Their wives had a mean age of 34.04 years ($SD = 3.50$) and had an average of 13.45 years ($SD = 1.65$) of education. These couples had an average yearly family income of \$44,488 ($SD = \$15,250$), had been married for an average of 12.27 years ($SD = 3.25$), and typically had two children (range = 1–4). Tests of group differences indicated that the ALC husbands were significantly older, $t(136) = 2.65, p < .01$, and had fewer years of education, $t(136) = -2.77, p < .01$, than the NA husbands. More important, however, neither husband age nor education was significantly correlated with any of the dependent variables, mean $r(136) = -.03$, range $r(136) = -.12-.07$.

Measures

Husband and wife alcoholism diagnosis—*DSM-IV* lifetime alcoholism diagnosis for husbands and wives was assessed using several measures, including the Short Michigan Alcoholism Screening Test (SMAST; Selzer, Vinokur, & van Rooijen, 1975), the Drinking and Drug History Questionnaire (DDH; Zucker, 1991), and the National Institute of Mental Health Diagnostic Interview Schedule-Version IV (DIS-IV; Robins, Helzer, Croughan, & Ratcliff, 1981). The SMAST is a 13-item screening inventory that assesses alcohol problems. Evidence indicates that the SMAST has good internal consistency, test-retest reliability, and concurrent validity (Dyson et al., 1998). The DDH contains a series of questions asking about alcohol and other drug use and alcohol-related consequences over the past 6 months. The DDH

incorporates consumption items from the American Drinking Practices Survey (Cahalan, Cisin, & Crossley, 1969) and a series of 22 problem items from the VA Medical Center Research Questionnaire (Schuckit, 1978), to which the respondent answers in a yes–no format and also provides age of first and most recent experience of the problem, for every item that is responded to positively. These items have been extensively used in a variety of survey and clinical settings (see Room, 2000). The DIS-IV is a structured diagnostic interview during which extensive information about physical, alcohol- and drug-related symptoms, and other psychiatric symptoms is collected. Reliability and validity of the alcohol section of the DIS appear to be acceptable (Erdman et al., 1992; Hasin, 1991).

Data from all three measures were used to create a best-estimate diagnosis (Leckman, Sholomskas, Thompson, Belanger, & Weisman, 1982) for husbands and wives. DIS data were used as the base supplemented by the DDH and SMAST data, guided by the principle that when a symptom was admitted, even from only one source, it probably was present. To evaluate the reliability of this pooled diagnosis, two raters independently diagnosed a series of 26 protocols. Agreement as evaluated by kappa was .81, indicating acceptable reliability.

Antisocial Behavior Checklist—The Antisocial Behavior Checklist (ASB; Zucker, Ellis, Fitzgerald, Bingham, & Sanford, 1996; Zucker & Noll, 1980) is a 46-item questionnaire that assesses the frequency of aggressive and antisocial activities in childhood (e.g., lying to parents, being suspended or expelled from school for fighting) and adulthood (e.g., being fired for absenteeism, defaulting on a debt, resisting arrest). Participants responded to each item using a 4-point scale ranging from 0 (*never*) to 3 (*often*). A series of reliability and validity studies has shown adequate test–retest reliability (.91 over 4 weeks) and internal consistency ($\alpha = .67-.93$). The instrument differentiates between individuals with histories of antisocial behavior (e.g., convicted felons) versus individuals with minor offenses versus university students (Ham, Zucker, & Fitzgerald, 1993).

The degree to which a trajectory of antisocial behavior from childhood through adulthood exists was established by way of classification of both childhood and adulthood antisociality. Following procedures used by Zucker, Ellis, Fitzgerald, et al. (1996), ALC men who scored 10 or higher on both the Child and Adult subscales of the ASB were categorized as AALs; these men are also referred to as *high antisocial continuity alcoholics*. Men scoring below 10 on one or both subscales of the ASB were categorized as NAALs. These scores were chosen as cutpoints on the basis of a dual criterion involving (a) their absolute deviation from normative levels of antisociality and (b) parallelism to *DSM-IV* criteria, which require at least three childhood and three adulthood symptoms for a diagnosis of antisocial personality disorder (see Zucker, Ellis, Fitzgerald, et al., 1996, for more discussion of this issue). Thus, NAALs in the present study consisted of ALCs who exhibited a pattern of low antisocial involvement during both childhood and adulthood as well as those who were antisocial in childhood but not adulthood, or vice versa. These antisociality specifications mirror those in *DSM-IV*, which requires lifetime persistence for the symptomatology to be classified as an Axis II disorder.¹

We used this classification scheme to create four groups of ALC couples that differed on husbands' antisocial personality and wives' alcoholism status. The groups were (a) AAL husbands/NA wives (H-AAL/W-NA, $n = 17$); (b) AAL husbands/ALC wives (H-AAL/W-ALC, $n = 19$); (c) NAAL husbands/NA wives (H-NAAL/W-NA, $n = 37$); and (d) NAAL husbands/ALC wives (H-NAAL/W-ALC, $n = 21$). Although the differentiation of antisocial

¹This NAAL classification differs from the low antisocial continuity alcoholic groups of Zucker, Ellis, Fitzgerald, et al. (1996) by including ALCs whose antisocial involvement was high in childhood but low in adulthood. This was done in order to have less restrictive classifications in an effort to enhance the generalizability of the findings. Thus, the AAL group used here has sustained life course antisocial involvement, and the NAAL group is reflective of the more general variation among NAAL men.

versus nonantisocial alcoholism for wives was not relevant here because no wives made the antisocial cutoff criterion, in fact the AAL husbands had wives whose antisocial behavior scores were significantly higher ($M = 13.90$) than those of their counterparts married to NAAL husbands ($M = 9.01$) and were also higher than those of the wives of NA husbands ($M = 7.84$) (main effect of husband status), $F(2, 129) = 13.87, p < .01$. In addition to the four alcoholism groups, the control group consisted of (e) NA husbands with NA wives (H-NA/W-NA, $n = 38$). Six couples in which the husband was NA but the wife was ALC were excluded because the subsample size was too small to allow meaningful comparative analyses.²

Procedures

As part of the protocol for the MLS, couples engaged in a marital problem-solving task at the university laboratory, in a room equipped with a one-way mirror. Couples were introduced to the task, and each partner was asked to complete the Marital Problem Inventory, which lists a series of 10 common marital problems (e.g., money; children; communication; and so forth; taken from Knox, 1971) and asks participants to rate the current importance of each problem in their relationship, using a 6-point scale ranging from 0 (*minor*) to 5 (*major*). The spouses then jointly identified the problem currently causing the most intense disagreement between them, which was selected as the discussion problem.

Couples were asked to discuss this problem for 10 min and were asked specifically (a) to talk about what the problem means to both of them and (b) to attempt to resolve the problem in a mutually satisfying way. All couples were videotaped from behind a one-way mirror, and the task administrator left the room during the interaction task. No participants were intoxicated at the time the task was administered.

Coding of Marital Interaction Videotapes

All marital interaction videotapes were coded with the Communication Skills Test (CST; Floyd, 2004; Floyd & Markman, 1984), a coding system designed to assess couples' communication and problem-solving proficiency in the context of marital problem-solving interactions. Previous research with the CST has shown that it assesses behaviors that distinguish satisfied married couples from distressed couples, including couples with alcohol problems (e.g., Floyd, O'Farrell, & Goldberg, 1987). Typically, the coding system uses as the coding unit the *speech turn*, that is, each spouse's verbal and nonverbal behaviors when he or she has the floor and the other spouse is listening. The verbal and nonverbal aspects of all marital behaviors enacted during a speech turn, along with information on its timing, sequence, and context, are all taken into consideration when a speech turn is evaluated. The CST classifies 40 specific verbal and nonverbal actions into broader categories, which are typically used as guidelines for the assignment of ratings along a 5-point scale where 1 = *very negative* (e.g., put-down, blaming, off topic), 2 = *negative* (e.g., negative nonverbal, disruptive extraneous comment), 3 = *neutral* (e.g., problem talk, question, providing information), 4 = *positive* (e.g., empathy, agree, positive non-verbal), and 5 = *very positive* (e.g., solution proposal, opinion probe, accept responsibility). However, in order to better distinguish among various forms of negative behaviors expected to be relevant for couples with alcohol problems, for the present study, the *very negative* and *negative* codes were reclassified as *hostility* (e.g., put-down, blaming, cross-complaining, dogmatic disagreement), *avoidant behaviors* (e.g., off topic, deny responsibility, avoidant withdrawal), and *negative nonverbal behaviors* (e.g., whining,

²As noted, both the husbands' and the wives' alcoholism status was determined by the presence of a lifetime *DSM-IV* diagnosis of abuse or dependence. However, because many of the ALC wives had no recent symptomatology, we conducted follow-up analyses with the groups reconstituted on the basis of a positive wife diagnosis within the 3 years prior to the study. These analyses demonstrated a similar, although weaker, pattern of results.

impatient). Also, speech turns that included mixtures of behaviors from more than one category received multiple codes for each category represented.

Coding of the marital videotapes was completed by a professional coder supervisor and several undergraduate psychology students who were trained in six sessions with the CST manual. Training was terminated when interrater reliability for specific codes between each coder and the supervisor reached $\kappa = .70$. Afterward, coder reliability was monitored on approximately 20% of all videotapes. The interrater reliabilities on specific codes for this study ranged from $\kappa = .60$ to $.90$, with average $\kappa = .83$.

The coded data were summarized into four relative frequency scores for each spouse that are the dependent measures for this study. The summary categories are the “relative frequencies of hostile behaviors, total positive behaviors” (*very positive* and *positive* codes combined), “neutral behaviors,” and “avoidant behaviors.” We included neutral behaviors because, in this context, they are on-task discussions of the issue at hand and, thus, reflect the ability to discuss a problem area without escalating into hostility. The relative frequencies were calculated by dividing the number of coded behaviors in each category by the total number of coded behaviors emitted by that spouse. Additionally, in order to evaluate the ratio of positive-to-negative behaviors displayed by each spouse, we calculated a proportion score, which indicated the amount of positive behaviors relative to all positive and negative behaviors (including *hostile* and *negative nonverbal* codes) emitted by the spouse (i.e., sum of positive codes/sum of positive and negative codes). These scores were distributed from 0 to 1.0, with a score of .5 indicating equal frequencies of positive and negative behaviors, scores greater than .5 indicating relatively more positive than negative behaviors, and scores less than .5 indicating relatively more negative than positive behaviors. As ratios, the scores were undefined for individuals who failed to emit any positive or negative behaviors. This situation occurred for spouses in 10 of the couples, 2 AAL, 6 NAAL, and 2 NA couples, who were thus excluded from the analysis of this variable. The distributions of scores were skewed right for two variables, which were improved with a log transformation. However, analyses conducted with log-transformed scores produced the same findings as the analyses with the raw scores; therefore, only the raw score results are presented.

Results

The analyses were conducted in two stages. First, a series of three-way analyses of variance (ANOVAs), with Duncan post hoc tests, contrasted the four alcoholism groups on the quality of their interaction behaviors during the marital problem-solving discussions. For these analyses, the between-subjects variables were husband subtype (AAL, NAAL) and wife alcoholism status (ALC, NA), with spouse (husband, wife) treated as a within-subjects variable.³ The second set of analyses was a series of planned contrasts in which each of the four alcoholism groups was compared with the control group of NA couples. In all analyses, there were no significant main effects or interactions involving the spouse variable, so we present the post hocs and planned contrasts that were conducted with couple-level scores, which reflect the behaviors of the dyad. Analyses with separate scores for the husbands and the wives essentially mimicked these findings. The correlations between husbands' and wives' scores were as follows: $r(130) = .57$ for hostile behaviors, $r(130) = .36$ for positive behaviors, $r(130)$

³In follow-up analyses, we compared the marital behaviors of the 6 couples in which the husbands were NA and the wives were ALC. This group showed a unique pattern of extreme scores on three of the measures. Similar to the other couples with ALC wives, they displayed relatively high rates of positive behaviors as compared with couples with NA wives ($d = 0.50$). However, similar to couples with antisocial husbands, they also displayed relatively high rates of hostile behaviors as compared with controls ($d = 0.70$). Finally, similar to other couples in which ALC husbands were paired with NA wives, these couples obtained the lowest scores overall for the ratio of positive-to-negative behaviors, which was significantly different from the controls ($d = 0.79$).

= .66 for neutral behaviors, $r(130) = .98$ for avoidant behaviors, and $r(120) = .43$ for positive:negative ratio (all $ps < .001$).

Effects of Husbands' and Wives' Alcoholism Status on Hostile Behaviors

The ANOVA comparing the ALC groups on relative frequencies of hostile behaviors produced a main effect only for husband subtype, $F(1, 90) = 6.00, p < .05, \eta^2 = .06$, with no other significant main effects or interactions. As shown in Table 1, regardless of wives' alcoholism status, the two groups of couples with an AAL husband showed relatively high levels of hostile behaviors. The highest rate occurred for the husband AAL/wife NA couples, and post hoc tests indicated that they were significantly more hostile than the husband NAAL/wife ALC couples. Furthermore, the planned contrasts comparing the ALC couples with the NA controls revealed relatively higher rates of hostility for both the husband AAL/wife NA couples, $t(127) = 2.55, p < .05, d = 0.73$, and the husband AAL/wife ALC couples, $t(127) = 2.13, p < .05, d = 0.58$, as compared with the control couples.

These results provided mixed support for our hypotheses. Consistent with Hypothesis 1, we found higher rates of hostile behaviors in couples with an AAL husband. Contrary to Hypothesis 2, there was no evidence that levels of hostile behaviors varied as a function of concordance on alcoholism status, as indicated by the lack of significant effects for wife alcoholism status. Regarding Hypothesis 3, there was no significant interaction between husband subtype and wife alcoholism status.⁴

Effects of Husbands' and Wives' Alcoholism Status on Positive Behaviors

The ANOVA comparing the alcoholism groups on the relative frequencies of total positive behaviors produced a main effect for wife alcoholism status, $F(1, 90) = 4.37, p < .05, \eta^2 = .05$, and no other significant main effects or interactions. As seen in Table 1, the highest rates of positive behaviors occurred within the two groups of couples in which the wives had a history of alcohol problems. The post hoc comparisons revealed one significant group difference in which the husband AAL/wife ALC couples emitted higher rates of positive behaviors than the husband NAAL/wife NA couples. The planned contrasts comparing the ALC couples with the NA controls produced no significant differences, with the mean rate of positive behaviors for the NA couples falling at a midrange between the highest and lowest alcoholism groups.

Similar to the findings for negative behaviors, these results also provided mixed support for our hypotheses. Contrary to Hypothesis 1, we did not find lower levels of positive behaviors in couples with an AAL husband. However, consistent with Hypothesis 2, we found higher rates of positive behaviors in couples in which both spouses were alcoholic, as indicated by the significant main effect of wife alcoholism status. With respect to Hypothesis 3, which predicted the lowest levels of positive behavior among couples discordant for alcoholism status that also had an AAL husband, we found that levels of positive behavior were actually lowest in the discordant couples with an NAAL husband. More generally, the findings to this point, particularly the ANOVA main effects, suggest that, whereas the husbands' antisocial alcoholism is associated with hostile behaviors, as expected, the wives' alcoholism status has more relevance for high rates of positive behaviors among couples with an ALC husband.

Effects of Husbands' and Wives' Alcoholism Status on Neutral and Avoidant Behaviors

The ANOVA comparing the alcoholism groups on the relative frequencies of neutral behaviors produced no significant main effects or interactions, indicating no significant differences among the groups on this behavior. However, the planned contrasts with the control couples

⁴The interaction of husband subtype and wife alcoholism status was nonsignificant in all ANOVAs, with very small effect sizes ($\eta^2 = .001-.008$).

revealed that three of the four alcoholism groups differed significantly from the control couples. The means in Table 1 show that, as compared with the control couples, lower rates of neutral behaviors occurred among the husband AAL/wife NA couples, $t(127) = -2.13, p < .05, d = 0.61$; the husband AAL/wife ALC couples, $t(127) = -2.42, p < .05, d = 0.66$; and the husband NAAL/wife ALC couples, $t(127) = -2.04, p < .05, d = 0.54$. These findings are in accord with Hypothesis 1 in showing low rates of neutral behaviors for both groups of AALs and their wives, though only the husband NAAL/wife NA couples engaged in as much neutral problem discussion as controls.

Contrary to Hypotheses 1, 2, and 3, the ANOVA with the relative frequencies of avoidant behaviors produced no significant main effects or interactions, and none of the planned contrasts with the control couples were significant.

Effects of Husbands' and Wives' Alcoholism Status on the Ratio of Positive-to-Negative Behaviors

Finally, the ANOVA comparing the four ALC groups on the proportion of positive-to-negative behaviors produced a significant main effect for wife alcoholism status, $F(1, 82) = 10.29, p < .01, \eta^2 = .11$, and no other significant main effects or interactions. As seen in Table 1, the lowest proportions of positive behaviors occurred in the two groups with discordant alcohol diagnoses, in which either AAL or NAAL husbands were married to NA wives. The ratios indicate nearly equal amounts of positive and negative behaviors for these couples on average, with an average ratio of 1.4:1 positives to negatives. In contrast, the two groups of couples in which both spouses had alcoholism had the highest ratios of positive behaviors, which averaged about 3:1 positives to negatives. The post hoc tests indicated that the groups with both ALC husbands and wives scored higher on this ratio than the husband AAL/wife NA couples. The planned contrasts indicated that, as compared with the control couples, significantly lower ratios of positive-to-negative behaviors occurred among both groups of couples with NA wives: the husband AAL/wife NA couples, $t(127) = -2.10, p < .05, d = 0.59$; and the husband NAAL/wife NA couples, $t(127) = -1.96, p < .05, d = 0.43$.

These findings are most consistent with Hypothesis 2 in showing that the couples who were discordant for alcoholism had the lowest ratios of positive-to-negative behaviors.

Supplemental Analyses Controlling for Wife's and Husband's Drinking Behavior

The findings show significant differences among the alcoholism groups on three of the marital interaction variables. To evaluate whether these effects were attributable to current drinking instead of the alcoholism diagnosis per se, we conducted a series of analyses of covariance (ANCOVAs) in which we examined the group differences after covarying both the wife's and the husband's current alcohol use. We used a revised version of the quantity-frequency-variability index (QFV-R; see Cahalan et al., 1969) to assess average volume of alcohol consumption in the past 6 months. Results show that, controlling for current alcohol consumption, the effects of husband subtype and wife alcoholism status remained virtually the same; that is, most ANCOVAs showed no change in significant effects, and the one that changed moved from significance to trend ($p < .10$) level. For the contrasts of the ALC subgroups with the NA comparison couples, the QFV-R showed significantly higher alcohol consumption compared with controls for both the husbands, $F(4, 127) = 2.50, p < .05, \eta^2 = .07$, and the wives in the ALC subgroups, $F(4, 127) = 5.53, p < .001, \eta^2 = .15$. Nevertheless, after partialing out the effects of QFV-R on marital interactions, two thirds of the significant contrasts with the comparison sample remained significant, and the other effects remained trends ($p < .10$). Thus, the present findings are likely attributable to the effects of the alcoholism as a longer term behavioral adaptation and are not explainable on the basis of the wife's or husband's current drinking behavior.

Discussion

The purpose of this study was to examine the effects of ALC subtypes and wives' alcoholism status on marital interactions. Our findings showed that (a) couples with an AAL husband, regardless of wives' alcoholism status, had high levels of hostile behaviors and low levels of neutral behaviors; and (b) couples in which either both partners were ALC or neither partner was had higher levels of positive behaviors and a higher ratio of positive-to-negative behaviors than did couples in which only the husband was ALC. Taken as a whole, these findings show that, whereas negative and hostile behaviors are more a function of antisocial personality paired with alcoholism status of the husband, the alcoholism status of the wife relative to the husband has significant implications for positive marital behaviors (Roberts & Leonard, 1998).

Husband's Antisocial Alcoholism Status and Hostile Behaviors

In this study, the high levels of hostile behaviors among couples with an AAL husband were observed under nondrinking conditions. These results differ from those of Jacob and colleagues, who found that AAL husbands were more negative (but not less positive) than NAAL husbands only in drink but not in no-drink conditions (Jacob & Leonard, 1988) and were increasingly negative in drink versus no-drink conditions (Jacob et al., 2001). The different findings across studies likely emerge from differences in recruitment and inclusion criteria. Whereas the Jacob et al. studies recruited from advertisements and excluded individuals on the basis of current psychiatric comorbidity, we recruited from courts, where approximately 15% of participants had prior prison histories, and current nonpsychotic psychiatric disorder was not a rule-out. On both of these grounds, it is reasonable to anticipate that expressed negativity would be higher in the MLS.

Although the present findings show higher levels of hostility and lower levels of on-task neutral behaviors among couples with an AAL husband compared with couples with an NAL husband, our design did not include couples with an antisocial nonalcoholic husband. On the one hand, the comorbid antisocial personality disorder/alcohol use disorder (ASPD/AUD) combination is far more the rule for persons with ASPD than the exception. Thus, Epidemiologic Catchment Area Study data (Regier et al., 1990) indicate that comorbid prevalence of AUDs in persons with ASPD is 74%. Nonetheless, the design constrains interpretation because we cannot determine whether heightened hostility is a function of the husband's antisociality, his alcoholism, or their combination. However, the existing evidence in the literature suggests that comorbid antisociality and alcoholism is a different phenomenon than ASPD or alcoholism alone. Accordingly, Finn, Mazas, Justus, and Steinmetz (2002) compared AALs, NAALs, and a group with conduct disorder (CD), but without alcoholism. Results showed that the AALs had more problems with behavioral disinhibition and were more impulsive than both the NAAL and the CD groups. In the same vein, in a recently published daily diary study, Fals-Stewart, Leonard, and Birchler (2005) found that among men entering an alcoholism treatment program, ASPD predicted severe male-to-female physical violence, and the effect of ASPD on severe physical violence was stronger on days of heavy drinking compared with days of nonheavy drinking. Moreover, the combination of ASPD and heavy drinking was predictive of severe physical violence over and above the effects of ASPD and heavy drinking alone. Together, the Finn et al. and the Fals-Stewart et al. studies indicate that the comorbid combination is different than ASPD alone, and such differences are exacerbated during drinking. Although the present study did not include an ASPD-only group, this other work suggests that it is the AAL combination rather than the ASPD component alone that accounts for the hostility difference. This clearly needs to be settled by future research, given the centrality of the question to an understanding of alcoholic behavior.

There are several possible mechanisms by which antisocial alcoholism would lead to heightened negativity in marital interaction. The behavioral disinhibition observed in this group

is one such mechanism linking higher hostility and lower neutrality to negativity (Iacono, Carlson, Taylor, Elkins, & McGue, 1999; Sher & Gotham, 1999). The greater hostility may also be because of factors nonspecific to antisocial alcoholism (e.g., drug abuse; Fals-Stewart & Birchler, 1998). Finally, not only have AALs had a history of conduct problems in childhood and adulthood (by definition) but also they have earlier onset of drinking, higher levels of drinking-related problems, and more other psychopathology than NAALs (Zucker, Ellis, Fitzgerald, et al., 1996; see also Zucker, 1994; Zucker et al., 1995). The multiple problems experienced by these AAL husbands, and the resulting distress, would be expected to spill over into their marital interactions via emotional transmission processes (e.g., Thompson & Bolger, 1999). These are all important issues for future research to explore.

Wife Alcoholism and Positive Marital Behaviors

With respect to positive behaviors and the ratio of positive-to-negative behaviors, the findings that support the hypothesis that concordance between spouses on alcoholism status, with either both or none having ALC diagnoses, would be associated with relative high levels of positive behaviors during marital problem solving and are consistent with the “drinking partnership” concept advanced by Roberts and Leonard (1998). Relatively young couples with subdiagnosable levels of drinking were examined in previous investigations (e.g., Mudar et al., 2001; Quigley & Leonard, 2000) as well as concordance in terms of current drinking patterns (e.g., Leadley et al., 1999). In showing concordance effects in couples with more severe forms of drinking for the husbands, and concordance with respect to alcoholism status rather than current drinking per se, the present findings are consistent with Mudar et al.’s conclusion that concordance is most important with respect to severe forms of problem drinking rather than a more general use of alcohol. Findings also suggest that, to the extent that discordant alcoholism status has negative effects on marital adjustment, it does so in part by decreasing the frequency of positive marital behaviors during conflict discussions, and thus creating a decreased ratio of positive-to-negative behaviors. Longitudinal research on couples has shown that this ratio is important for the maintenance of marital stability (Gottman, 1993, 1994), at least partially because positive affect is associated with de-escalation of conflict and with physiological soothing (i.e., lower heart rate) of the husband (Gottman, Coan, Carrere, & Swanson, 1998). These mechanisms may also be operative in concordant ALC couples, and disruptions in these processes may help to explain why discordant couples show poorer marital outcomes. However, our ability to form firm conclusions about the impact of husband–wife concordance versus discordance is limited by the fact that the ALC wife-NA husband group was too small to include in the analyses. Thus, because concordance in the analyses was confounded with the presence of wife alcoholism, it is possible that effects can be attributed to some degree to the influence of wife alcoholism rather than to couple concordance per se.

Limitations, Contributions, and Directions for Future Work

Several limitations of the present study should be noted. Couples were observed in a laboratory setting, and there is evidence that couples are less negative in such settings than they are in home settings (Gottman, 1979; Heyman, 2001). Also, the behavior samples were obtained from conflict discussions, and we do not know whether similar marital interaction patterns are characteristic of nonconflict discussions. In addition, low base rates in some of the marital behaviors led us to collapse across categories to create broader interaction variables. It may be that this strategy obscures important effects for more specific kinds of positive and negative behaviors. Relatedly, whereas our focus on relative frequencies of interaction behaviors yielded interesting results, it may be fruitful to investigate patterns of sequential interactions (see Jacob et al., 2001). Finally, our sample comprised Caucasian couples in early middle adulthood. It is not clear whether these interaction patterns would characterize newlywed couples and older couples or whether the findings would generalize to ethnic minority couples.

Nonetheless, our findings highlight the utility of distinguishing spouses on the basis of AAL status. Along with work by Jacob et al. (2001), our findings indicate that AAL couples engage in higher levels of hostile behaviors, regardless of their wives' alcoholism status. An important question for future research concerns the implications of these patterns for other aspects of marital and family functioning, including marital aggression, movement toward divorce, and marital dissolution. Also, to our knowledge, these findings are the first to suggest that concordance on alcoholism diagnosis rather than drinking behavior may have implications for marital interaction. An earlier study showing that couples who are concordant for drug abuse have worse treatment outcomes than couples in which only one partner abuses drugs (Fals-Stewart, Birchler, & O'Farrell, 1999) suggests that successful treatment of one spouse's alcoholism may lead to greater relationship instability among concordant couples. However, this hypothesis has not been formally evaluated because treatment studies typically exclude couples in which both partners meet criteria for a substance use disorder (Fals-Stewart & Birchler, 2001). Thus, further research on the individual and marital outcomes of these concordant couples is warranted.

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Table 1
Means and Standard Deviations on Marital Interaction Variables for Separate Groups of Couples

Behavior	H-AAL/W-NA (<i>n</i> = 17)		H-AAL/W-ALC (<i>n</i> = 19)		H-NAAL/W-NA (<i>n</i> = 37)		H-NAAL/W-ALC (<i>n</i> = 21)		H-NA/W-NA (<i>n</i> = 38)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Hostile	.10^a	.11	.08^{a,b}	.14	.05 ^{a,b}	.09	.03 ^b	.05	.03	.05
Positive	.16 ^{a,b}	.10	.19 ^b	.11	.13 ^a	.07	.18 ^{a,b}	.09	.16	.09
Neutral	.59	.19	.58	.17	.68	.18	.60	.21	.70	.17
Avoidant	.11	.21	.14	.18	.09	.19	.15	.23	.07	.14
Pos:Neg	.56^a	.28	.77 ^b	.30	.58^{a,c}	.31	.77 ^{b,c}	.20	.73	.25

Note. Among the alcoholic groups, means with different superscripts are significantly different at $p < .05$, based on Duncan post hoc tests. Means in bold are significantly different from the nonalcoholic group at $p < .05$, based on planned contrasts. Values for the nonalcoholic group are italicized. H = Husband; W = Wife; NA = Nonalcoholic; AAL = Antisocial, Alcoholic; ALC = Alcoholic; NAAL = Nonantisocial Alcoholic; Pos:Neg = positive-to-negative ratio.