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Citation for the original published paper (version of record):

Glatz, T., Stattin, H., Kerr, M. (2012)

A test of cognitive dissonance theory to explain parents' reactions to youths' alcohol intoxication

Family Relations, 61(4): 629-641

<https://doi.org/10.1111/j.1741-3729.2012.00723.x>

Access to the published version may require subscription.

N.B. When citing this work, cite the original published paper.

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A Test of Cognitive Dissonance Theory to Explain Parents' Reactions to Youths' Alcohol
Intoxication

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This research was supported by a grant to Margaret Kerr and Håkan Stattin from the Swedish Research Council.

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Abstract

Background: Studies have shown that parents reduce control and support in response to youths' drinking. Why they react this way, however, is still much unknown. From cognitive dissonance theory, we derived hypotheses about parents' reactions.

Methods: We used a longitudinal, school-based sample of 494 youths (13 and 14 years, 56% boys) and their parents. General Linear Model (GLM) analyses were used to test the main hypotheses.

Results: In accord with our hypotheses, parents who encountered their youths intoxicated became less opposed to underage drinking over time. In addition, parents who remained strongly opposed to youth drinking experienced more worries than parents who became less opposed.

Alternative explanations for the results were tested, but were not supported.

Conclusions: The findings suggest that to eliminate the dissonance between their strict attitudes against youth drinking and their knowledge of their own youths' drinking, parents changed their attitudes and became more lenient.

Keywords: cognitive dissonance theory, parental attitudes, youth alcohol intoxication.

A Test of Cognitive Dissonance Theory to Explain Parents' Reactions to Youths' Alcohol Intoxication

Beginning in middle adolescence, there is a sharp increase in alcohol drinking (Patrick & Schulenberg, 2010). Because early onset of drinking is related to health and social problems, such as risky sexual behaviors (Cooper, Peirce, & Huselid, 1994), drug use, and delinquency (Komro, Tobler, Maldonado-Molina, & Perry, 2010), parents typically view underage drinking as a problem (Beck, Scaffa, Swift, & Ko, 1995). How parents react when they find out that their own youth has started to drink, however, has received little attention in the literature. This question is important, because theories suggest that escalations in youth problem behavior might best be seen as part of a transactional process in which parents react to youth problem behaviors and youths react to parenting behaviors (Patterson, 1982; Sameroff, 1975). To date, however, most of the research has focused on one part of the process—youths' reactions to parenting. The less understood part is parents' reactions to youth problem behaviors.

Most parents of young adolescents are opposed to youth drinking (van der Vorst, Engels, Meeus, & Deković, 2006), and when asked, parents report that they would do something about their youths' drinking if they found out about it. Most commonly, they envisage using a combination of discussion and disciplinary action (Beck et al., 1995; Tyler, Tyler, Kaljee, & Hopps, 1994). There are few studies in which parents' actual reactions to youth drinking have been examined, but those that have been done have shown that adolescents' alcohol use predicts lessened parental control (Huh, Tristan, Wade, & Stice, 2006; Stice & Barrera, 1995) and support (Stice & Barrera, 1995). These results are at odds with the ways parents say they would react to their youths' drinking if they found out about it. Up to now, however, theoretical explanations for parents' reactions to youth drinking have been lacking.

Longitudinal studies on parents' reactions to youth problem behaviors, more generally, show results similar to those on youth drinking: when parents encounter youth problems, they tend to lessen, rather than increase, their attempts to change their youths' behavior. For example, youths' externalizing behaviors have been related to decreases in parental control and support (Hafen & Laursen, 2009; Huh et al., 2006; Kerr & Stattin, 2003; Kerr, Stattin, & Pakalniskiene, 2008; Stice & Barrera, 1995), and degradations in family management (Dishion, Nelson, & Bullock, 2004). In addition, youth smoking has been shown to predict less restrictive house rules about smoking (Huver, Engels, Vermulst, & de Vries, 2007). These findings suggest that parents, when confronted with youth problem behaviors, tend to decrease their behavioral attempts to change their youths' behaviors. It is still much unknown, however, why parents react this way to problematic behaviors in their youths.

Some explanations have been proposed for parents' reduced attempts to change their youths' problematic behaviors. One is that parents might feel threatened by their youths' behavior, and they might shy away to avoid conflicts (Huh et al., 2006). Another is that low family management paves the way for youths' deviant peer involvement, which causes parents to reduce their attempts to manage youths' behaviors even further (Dishion et al., 2004). A third explanation is that parents interpret their youths' behavior as a sign that they need autonomy (Huver et al., 2007; Kerr & Stattin, 2003). All these explanations were provided post hoc in empirical studies and were not explicitly tested. However, at least two studies have proposed specific ideas a priori and tested them. The first study proposed and showed findings to support the idea that parents feel intimidated by their youths' problem behaviors, and to avoid conflicts, they monitor their youths less (Kerr & Stattin, 2003). The second study proposed that parents' reactions are a normal response to social signals from their youths (Kerr et al., 2008). The

results showed that when parents perceived their youths as cold and closed they decreased in support and control over time, but they increased in the same behaviors if they perceived their youths as warm and open toward them. Thus, some explanations for parents' reactions have been offered. However, to our knowledge, no previous study has used an established theoretical framework to develop and test hypotheses about parents' reactions to underage drinking.

Most parents of early adolescents are opposed to underage drinking (van der Vorst et al., 2006), and few young adolescents drink. This changes considerably during the next few years, and during these years, some parents will come face to face with this change when they encounter their youths intoxicated. How does encountering a youth intoxicated affect parents' opposition to underage drinking? Theoretically, the juxtaposition between parents' opposition to underage drinking and the first-hand knowledge that their youth has been intoxicated can be seen as a case of cognitive dissonance, or a clash between two cognitions. According to cognitive dissonance theory (Festinger, 1957), dissonance is an aversive state in which people experience discomfort, and to reduce this discomfort, people must change one of the cognitions. Studies of cognitive dissonance and substance use have shown that people tend to change their attitudes about a health-comprising behavior to reach consistency between their behavior and attitudes (Halpern, 1994; McMaster & Lee, 1991; Mäkelä, 1997; Peretti-Watel, 2006; Tagliacozzo, 1979). For example, smokers tend to underestimate the risks associated with their own smoking behavior, and through this, they reduce the dissonance produced by knowing that they smoke and that smoking is a health hazard (Halpern, 1994; McMaster & Lee, 1991; Tagliacozzo, 1979). Applied to youth drinking, when parents who are opposed to youth drinking encounter their own youth intoxicated, they might experience dissonance between their opposition to youth drinking and their knowledge that their own youth has been intoxicated. According to cognitive

dissonance theory (Festinger, 1957), they would eliminate the dissonance by becoming less opposed to youth drinking. To our knowledge, however, this has never before been proposed or tested.

In this study, we tested two hypotheses derived from cognitive dissonance theory (Festinger, 1957). First, the theory suggests that parents who experience a clash between their attitudes about appropriate youth behavior and their knowledge of their own youths' behavior should respond by changing their attitudes rather than trying to change the behavior of their youths. Earlier studies have shown that people tend to change their attitudes about their own health-related behaviors instead of changing the actual behaviors (Halpern, 1994; McMaster & Lee, 1991; Mäkelä, 1997; Peretti-Watel, 2006; Tagliacozzo, 1979), but the idea has never before been applied to parents' attitudes about youth behavior. Thus, we hypothesized that after encountering their youths intoxicated, parents with strict attitudes against youth drinking would be more likely to change their opposition to youth drinking than to increase control of their youths' whereabouts and activities. Second, cognitive dissonance theory suggests that reducing dissonance should be followed by a reduction in discomfort. In this study, we defined discomfort as parents' worries that their youths would begin to abuse alcohol, and we tested how this was related to parents' experiences of encountering their youths intoxicated and their changes in attitudes to youth drinking. We hypothesized that among parents who encountered their youths intoxicated, those who maintained their opposition to youth drinking would experience more discomfort than those who became more tolerant to youth drinking.

In addition, we tested two alternative explanations for our expected findings. The first involved what youth behavior parents actually react to. Youth drinking and delinquency often co-occur (Komro et al., 2010), and it is possible that parents' reactions might be reactions to their

youths' problem behavior generally, rather than to drinking, specifically. Consequently, we examined parents' reactions to their youths' drinking over and above the influence of the youths' delinquency. The other concerned the direction of influence between youths' alcohol intoxication and parents' opposition to youth drinking. According to this alternative explanation, parents' lenient attitudes would prompt youths to drink more over time, rather than youths' drinking prompting parents to change their attitudes.

Method

Participants and Procedure

Data were drawn from a longitudinal cohort-sequential study in a mid-sized, Swedish town (about 26,000 inhabitants). The target sample was all youths who were registered in grades 4 (approximately age 10) through 12 (approximately age 18) each year over five years (starting in 2001). The target sample at the first wave included 3,120 pupils. At the start of the study, the mean income level in this town was somewhat lower than in the rest of the country (20,394 US dollars/person, compared with 20,958 US dollars/person for the whole country). The unemployment rate was 6.5% (in comparison with 5.8% nationally) and the average percentage of immigrants in the town was 11.8% (in comparison with 8.4% nationally).

The University Ethics Review Board approved the study and all procedures before the project started. School principals were asked if they wanted their schools to participate, and all agreed. Thus, youths were contacted through the schools. Parents or other caretakers acting in the parental role were contacted by mail. Because 99% of these were biological parents, we refer to them hereafter as parents. Before each data collection, parents received information by mail and could refuse to allow their youths' participation. Only 1% of parents did so. Neither parents nor youths were paid for participating in the project, but a drawing for movie tickets was held in

each class. Every year over five years, the youths in 4th through 12th grade filled in questionnaires in school about their home situations, leisure time, and school experiences. Participation was voluntary. At the first wave of the data collection, 2,721 youths (87.2% of the target sample) participated in the project. Trained research assistants distributed questionnaires to the youths in their classrooms. Teachers were not present. Parents received questionnaires by mail and participated in Waves 1, 3, and 5.

For this study, we aggregated data from two waves to maximize sample size and increase power in the analyses. We used youths who were 13 and 14 years old at Wave 1 and Wave 3 and followed them over two years. Hence, the 13- and 14-year-olds at Wave 1 were followed to Wave 3, when they were 15 and 16 years old, and the 13- and 14-year-olds at Wave 3 were followed to Wave 5, when they were 15 and 16 years old. From here on, we label the first of the two waves Time 1 (T1), and the second Time 2 (T2).

Of the 1,373 youths who participated at T1, 937 (68%) of their parents filled in the questionnaires. From this sample of parents, we first selected the parents who had not encountered their youth intoxicated at T1 ($n = 870$, or 93% of the parents who answered this question at T1). Second, we only used reports from the parents who were most opposed to youth drinking at T1 (those who scored four on the four-point scale measuring parents' opposition to youth alcohol use [see description below]). At T1, 700 parents endorsed the most restrictive attitude. This represented 75% of the parents who answered this question at T1. The choice not to include parents with more lenient initial attitudes was based on the premises of cognitive dissonance theory (Festinger, 1957). By limiting the sample to parents with the strictest initial attitudes and no experience of having encountered their youths intoxicated, we insured that the conditions were in place for the creation of dissonance if parents subsequently encountered their

youths intoxicated. At T1, 658 parents had not encountered their youth intoxicated *and* endorsed the most restrictive attitude. This represented 70% of the parents who answered both these questions at that time point. Third, to be included in the sample, parents needed to have information about their opposition to youth alcohol use and whether they had encountered their youths intoxicated at T2 (494 of the 658 parents at T1, or 75%, met these criteria). Thus, for this study, the analytic sample consisted of 494 parents of youths (277 boys and 217 girls) aged 13 or 14 at T1 who had strict attitudes and had not encountered their youths intoxicated at T1 and had also provided data about their attitudes and whether they had encountered their youths intoxicated at T2. About 72% of questionnaires were filled out by mothers, 13% by fathers, and the rest by either both parents together or another caretaker. In Table 1, characteristics of the sample are presented.

- Table 1 about here -

Measures

Encountering the youth intoxicated. Parents were asked: “Have you ever encountered your youth drunk?” (Kerr & Stattin, 2000). The response options were 1 (*No, hasn't happened*), 2 (*Yes, once*), and 3 (*Yes, two or more times*). We dichotomized this measure to differentiate parents who had encountered their youth intoxicated at least once (coded 1) from those who had not (coded 0). Of the parents in our analytic sample, 95 (19%) had encountered their youths intoxicated by the time their youths were 15 or 16 years old (T2).

Parents' opposition to youth alcohol use. Parents were asked which of four descriptions best reflected their own attitudes (Kerr et al., 2008; Koutakis, Stattin, & Kerr, 2008): 1 (*It is natural for youths our son or daughter's age to be curious about trying alcohol. We trust that our son/daughter drinks in a responsible way.*); 2 (*A youth our son or daughter's age is*

adult enough to be responsible for his/her actions. If they want to drink alcohol, they will, regardless of what parents do or say. We have given our son/daughter alcohol to drink at home, so it will not be as exciting. Hence, we know what he/she is drinking, and the risk that he/she will get home-distilled alcohol or drugs is lessened.); 3 (We think it is totally unacceptable for our son/daughter to drink alcohol outside the home. On the other hand, we have allowed our son/daughter to taste wine or beer when we are having it with a weekend dinner or something like that.); and 4 (A youth our son or daughter's age is way too young to drink alcohol at all. We think it is obvious that adolescents under 18 years should not concern themselves with alcohol.).

This measure is sensitive to the child's chronological age (Koutakis et al., 2008). Similar measures about parents' attitudes to youth drinking have been used in North American (Ennett et al., 2001) and European samples (Koning, van den Eijnden, Engels, Verdurmen, & Vollebergh, 2010).

Parental discomfort. To measure parental discomfort about youths' problematic drinking, parents were asked: "Are you worried that your youth will start to abuse alcohol?" This question was included in a more general parental worries scale, which has been used and validated in earlier studies (Kerr et al., 2008). The mean for parental worries about alcohol abuse was similar to the means for parental worries about other issues (using drugs, not finishing school, getting in trouble with the police, and having deviant friends). Thus, worrying that a youth would start to abuse alcohol should be a relevant alcohol-related worry for Swedish parents. The response scale ranged from 1 (*No, not at all*) to 5 (*Yes, very much*).

Parental control. Parents answered five questions concerning setting and enforcing rules that required youths to give information about their activities and associations away from home (Kerr & Stattin, 2000). The questions were: "Does the youth need to have your permission

to stay out late on a *weekday* evening,” “Does the youth need to ask you before he or she can make plans with friends for a Saturday evening,” “If the youth has been out past curfew, do you require him or her to explain what he or she has been doing and whom he or she has been with,” “Does the youth have to tell you where he or she is at night, whom he or she is with, and what he or she is doing,” and “Before the youth goes out on a *Saturday* night, does he or she have to tell you where he or she is going and with whom?” The response options ranged from 1 (*No, never*) to 5 (*Yes, always*). The alpha reliabilities were .70 and .76 at T1 and T2, respectively.

Youth delinquency. Parents answered 10 questions about their youths' engagement in different delinquent activities (Kerr & Stattin, 2000; Magnusson, Dunér, & Zetterblom, 1975). The questions were about shoplifting, vandalizing public or private property, breaking into a building, being in a physical fight in public, carrying a weapon, and stealing a car. The response scale ranged from 1 (*Never*) to 5 (*More than 10 times*). The alpha reliabilities were .68 and .69 at T1 and T2, respectively. The correlation between the parent reported measure of youth delinquency and youths' reports of their own delinquency at T1 for youths aged 13 to 16, using the same 10 questions for both reporters, was .39 ($p < .001$). It was higher for the 13 and 14 year olds ($r = .52, p < .001$) than for the 15 and 16 year olds ($r = .26, p < .001$). Hence, substantial associations existed between parents' and youths' reports of youth delinquency, particularly when the youths were younger.

Frequency of youths' intoxication. Youths answered a question regarding their frequency of intoxication: “Have you, during the last year, drunk so much beer, liquor, or wine that you became drunk?” (Kerr & Stattin, 2000; Magnusson et al., 1975). The answer options ranged from 1 (*No, it has not happened*) to 5 (*More than 10 times*). The percentages of youths in

this sample who had been drunk at different ages are close to those found in national surveys (Hvitfeldt & Gripe, 2010).

Statistical Analyses

We used General Linear Model (GLM) analyses to answer the main questions in this study. A small number of participants had missing values on some of the outcome measures, and were excluded from one or more of the analyses. This explains the different numbers of participants in the GLM analyses. However, it should be mentioned that the number of deleted participants due to partial missing data in the analyses was very small (maximum 16 persons in the analysis involving parental control). In addition to the GLMs, we used the MPlus program (Muthén & Muthén, 1998-2006) to examine the direction of influence between youths' alcohol intoxication and parents' opposition to youth alcohol use, as was suggested in the second alternative explanation. Effect Sizes (ES) were calculated using Cohen's *d* (Cohen, 1988), and a confidence interval of 95% was used. In this study, we controlled for several factors that might have influenced the results of the study. First, inconsistent results have been reported regarding parents' reactions to girls and boys (Hoeve, Dubas, Eichelsheim, van der Laan, Smeenk, & Gerris, 2009; Stattin & Kerr, 2000). Consequently, we controlled for youths' gender in all analyses. Second, parents might react differently to 13-year-olds' drinking than to 14-year-olds', so we also controlled for age. Finally, it is possible that parents' SES is important for the results of this study. In earlier studies, parental education has been used as a proxy for parents' SES (Hamilton, Noh, & Adlaf, 2009; Humensky, 2010). Consistent with this, we controlled for parents' education in all analyses.

Attrition Analyses

Some parents fulfilled the criteria for being included in the sample at T1 ($n = 658$), but did not have the relevant data at T2 ($n = 164$). These 164 parents who were lost through attrition over the two years represented 25% of the sample at T1 ($n = 658$). Parents who fulfilled the criteria at both T1 and T2 ($n = 494$) were included in our sample. We used logistic regression analysis to determine whether parents who participated both at T1 and T2 ($n = 494$) differed from parents who participated at T1, but not at T2 ($n = 164$). At T1, these two groups were compared on youth demographic information (age, gender, family structure, and cultural background), parents' employment, education, cultural background, and all variables used in the study. The results showed only one difference: youths of the parents in our sample were intoxicated less frequently than youths whose parents were lost through attrition ($OR = .64, p = .008$). The Nagelkerke R^2 for this model was only .07.

Results

Descriptive Information about the Study Measures

Correlations between all variables used in the study, as well as means and standard deviations, are presented in Table 2. At both T1 and T2, youths' delinquency and alcohol intoxication correlated significantly with each other, and they were both significantly associated with lack of parental control and parental worries about youth alcohol abuse. Moreover, parental control at T2 correlated significantly with parents' restrictive attitudes toward youth drinking.

- Table 2 about here -

Hypothesis 1: Parents who have Encountered their Youth Intoxicated will Become Less Opposed to Youth Drinking Rather than Increase their Control Attempts

According to dissonance theory (Festinger, 1957), parents who are opposed to youth drinking and encounter their youths intoxicated should experience dissonance. Theoretically,

parents could eliminate this dissonance by either trying to reduce their youths' drinking, by increasing their control attempts, or by becoming less opposed to youth drinking. From earlier studies of cognitive dissonance (Halpern, 1994; McMaster & Lee, 1991; Mäkelä, 1997; Peretti-Watel, 2006; Tagliacozzo, 1979), we expected that parents would be more likely to change their own attitudes than to try to change their youths' behavior. To test for differences between parents who had encountered their youths intoxicated ($n = 95$) and those who had not ($n = 399$), we used repeated-measures GLMs where we included two Group (having encountered youth intoxicated or not) x Time interactions, with parents' control and opposition to youth drinking as the within-subjects factors.

The results for parental control showed that parents generally controlled their youths less over time $F(1, 478) = 105.37, p < .001$. Further, the Group x Time interaction, with parents' control as the within-subjects factor, was non-significant, $F(1, 478) = .27, p = .601$. Parents who encountered their youths intoxicated ($M = 4.33, SD = .65$ at T1, and $M = 3.86, SD = .75$ at T2) were not significantly different from parents who did not encounter their youths intoxicated ($M = 4.37, SD = .65$ at T1, and $M = 3.97, SD = .83$ at T2) in their over-time changes in control. Thus, parents who encountered their youths intoxicated did not try to change their youths' behavior more, through control attempts, than parents who did not encounter their youths intoxicated. The question is whether these two groups differed in attitude changes.

The results for parents' attitudes showed that parents generally became less opposed to youth drinking over time, $F(1, 490) = 112.81, p < .001$. In addition, there was a significant Group x Time interaction, with opposition to youth drinking as the within-subjects factor, $F(1, 490) = 19.32, p < .001$ (ES = .46 at T2). As shown in Figure 1, the decreasing trend for opposition to youth drinking was particularly evident for parents who encountered their youth

intoxicated between T1 and T2. In terms of effect size, the differences in means at T2 between the parents who had encountered their youth intoxicated and the parents who had not produced a Cohen's *d* of .39, which is a small to medium effect. To sum, these results were consistent with our hypothesis that when encountering their youths intoxicated parents would become less tolerant to youth drinking rather than increasing their control attempts.

- Figure 1 about here -

Hypothesis 2: After Encountering their Youths Intoxicated, Parents who Maintain their Opposition to Youth Drinking Should Experience More Discomfort than Parents who Become More Lenient Toward Youth Drinking

If becoming less opposed to youth drinking reflects dissonance reduction, then the parents who encountered their youth intoxicated and maintained their opposition to youth drinking over time should experience more discomfort (i.e., worries about the youths' alcohol abuse) than the parents who encountered their youth intoxicated and became less opposed to youth drinking over time. We defined parents as having become less opposed to youth drinking if they scored 4 on the attitude measure at T1, but scored 1, 2, or 3 at T2. In contrast, we defined them as having maintained their opposition to youth drinking if they scored 4 on the attitude measure at both T1 and T2. Of the 494 parents included in the sample, we created four groups: (a) parents who did not encounter their youths intoxicated between T1 and T2, and became less opposed to youth drinking ($n = 69$), (b) parents who did not encounter their youths intoxicated between T1 and T2, and maintained their attitudes ($n = 330$), (c) parents who encountered their youths intoxicated between T1 and T2, and became less opposed to youth drinking ($n = 35$), and (d) parents who encountered their youths intoxicated between T1 and T2, and maintained their attitudes ($n = 60$).

A repeated-measures GLM with worries as the within-subjects, repeated measure was used to examine differences between these four groups. The results showed significant over-time differences in worries between the groups, $F(3, 479) = 3.06, p = .028$. As seen in Figure 2, among parents who encountered their youths intoxicated, those who maintained their strict attitudes increased in worries from T1 to T2. This was not true for parents who became less opposed to youth drinking. At T1, these two groups did not differ significantly in worries, $t(93) = .19, p = .848$, but at T2 they did, $t(93) = -2.55, p = .004$ (ES = .47 at T2). In addition, using Group C (parents who encountered their youths intoxicated between T1 and T2, and became less opposed to youth drinking) as a reference group, we examined whether this group differed from the three other groups in their changes in worries over time. We did this by using group membership as a predictor of the slope of parental worries. The results showed that Group C differed significantly from Group D (parents who encountered the youth intoxicated between T1 and T2, and maintained their attitudes) in their over-time changes in worries ($\beta = .16, p = .001$). Parents who had encountered their youths intoxicated and changed their attitudes (Group C) did not differ significantly from the two groups of parents who had not encountered their youths intoxicated (Groups A and B). To sum, the results for the parents who encountered their youths intoxicated were consistent with our hypothesis; those who maintained their opposition to youth drinking between T1 and T2 reported more discomfort over time than those who became less opposed to youth drinking.

- Figure 2 about here -

Test of an Alternative Explanation Why Parents Became Less Opposed to Youth Drinking

Because youth drinking and delinquency often co-occur (Komro et al., 2010), it is possible that parents reacted to the youths' problem behavior more generally, rather than

drinking specifically. There were significant correlations between youths' reports of their alcohol intoxication and parents' reports of their youths' delinquency both at T1 ($r = .11, p = .016$) and T2 ($r = .16, p = .001$). In addition, encountering the youth intoxicated was significantly related to parents' reports of youth delinquency at T2, $r = .30, p < .001$.

To test whether parents' changes in opposition to youth drinking were due to their knowledge of their youths' delinquency rather than their knowledge of their youths' intoxication, we performed a repeated-measures GLM, with parental opposition to youth drinking as the within-subjects, repeated measure and having encountered the youth intoxicated at T2 versus not as the between-subjects measure. In this analysis, we controlled for parents' reports of youths' delinquency at T2. We used parents' reports of youths' delinquency, rather than youths' self-reports because parents should only be expected to react to what they actually have knowledge about. The results showed a significant Group x Time interaction, $F(1, 483) = 19.50, p < .001$. Parents who encountered their youths intoxicated became less opposed to youth drinking over time than parents who did not, after controlling for parents' knowledge of their youths' delinquency. The GLM analysis showed no significant effects involving delinquency. Overall, then, parents becoming less opposed to youth drinking seemed to be a reaction to their youths' drinking, specifically, rather than to their youths' problem behavior, more generally.

Test of an Alternative Explanation for the Link between Encountering the Youth Intoxicated and Change in Opposition to Youth Drinking

In this study, encountering the youth intoxicated and becoming less opposed to youth drinking both happened between T1 and T2, which raises questions about the direction of influence. Parents' attitude changes might be a response to their youths' intoxication, as we have assumed, but youths' intoxication might be a response to parents' attitudes, as well. To examine

the direction of influence between youths' intoxication frequency and parents' attitudes, we used an auto-regressive cross-lagged model with youths' reports of their intoxication frequency and parents' attitudes at T1 and T2, including both within-time associations and stability paths. We used the MPlus program (Muthén & Muthén, 1998-2006) to test this model.

In this analysis, we used youths' own reports of their intoxication rather than parent reports. This choice was based on parents' possible lack of knowledge about their youths' intoxication. In line with the alternative explanation, if youths view less strict attitudes in parents as a sign that it is okay to drink alcohol, we would see the effects in youths' own reports of their intoxication. Thus, using youth reports made sense when testing this alternative explanation. The sample for this analysis was parents who had not encountered their youth intoxicated at T1, but who might have endorsed any of the four alternatives concerning their attitudes about youth drinking ($n = 638$). The reason for including all parents, independent of their attitudes at T1, was to ensure that the whole variation in parents' attitudes to youth drinking was represented. As reported in Figure 3, the results showed that youths' intoxication frequency predicted decreases in parents' opposition to youth drinking two years later ($\beta = -.08, p = .028$), controlling for opposition to youth drinking at T1. The path from parents' attitudes to youths' intoxication did not reach significance ($\beta = -.01, p = .815$). Thus, youth drinking predicted changes in parents' attitudes about youth drinking; parents' attitudes did not predict changes in youth drinking.

- Figure 3 about here -

Youths' Gender, Age, and Parental Education as Control Variables

In all analyses, youths' gender and age, and parental educational level, were used as between-subjects factors to control for possible effects on the results. The results showed that,

generally, these control variables did not influence the processes over time. The only significant difference was for changes in parental control. Parents of boys showed steeper decreases in control over time, than parents of girls, $F(1, 478) = 4.45, p = .035$. No other significant differences were found in any of the analyses. Thus, for the most part, parents reacted similarly to boys and girls, to 13-year-old and 14-year-old youths, and independent of their own educational levels.

Discussion

In this study, we examined how parents react when they encounter their youth intoxicated. The unique aspect of this study is that it offers a theoretically based explanation for parents' reactions to problematic youth behaviors. From cognitive dissonance theory (Festinger, 1957), we predicted that parents who encountered their youths intoxicated would experience cognitive dissonance, and to reduce the discomfort associated with dissonance, they would change their attitudes and become more tolerant of youth drinking over time, rather than trying to change their youths' behaviors. The results were consistent with this hypothesis.

Two alternative explanations for the results in this study were tested. First, we examined the hypothesis that parents reacted to youths' problematic behaviors more generally rather than to youths' drinking, per se. The results suggested that parents' reactions were not attributable to their youths' delinquent behavior, generally, but to their specific, first-hand encounters with their youths' intoxication. The second alternative explanation dealt with the direction of influence between youths' intoxication and parents' attitudes. This alternative explanation posited that, in contrast to our assumption that parents' attitude changes were responses to their youths' intoxication, increased intoxication among the youths was a response to lenient parental attitudes. We examined the over-time ordering of these two events using a cross-lagged model

and found evidence for our hypothesis—youths' intoxication frequency predicted decreases in parents' opposition to youth drinking, but parents' lenient attitudes did not predict increases in youths' intoxication frequency. In this model, we controlled for the stability of youths' intoxication and parents' opposition to youth drinking, and we included within-time associations between these two variables. In addition, we predicted changes over two years. These two aspects make it hard to obtain strong cross-lagged effects. Thus, it is noteworthy that our hypothesized path was significant, whereas the reverse path was not.

It is possible that decreases in strict attitudes could be explained by other processes, rather than being a result of dissonance reduction. First, becoming less opposed to youth drinking might be an indication of general disengagement in parents (Dishion et al., 2004). If this explanation were true, then we should have seen that parents who encountered their youth intoxicated and became less opposed to youth drinking also (because of their general disengagement) made fewer attempts to manage their youths' behavior. We did not find this. Parents who became more lenient toward youth drinking over time did not reduce their control of their youths more than parents who maintained their opposition to youth drinking. For this reason, parental disengagement does not seem to be a viable explanation for the results of this study. Second, as children get older, parents might think it is more acceptable for them to drink alcohol, and a decrease in control and strict attitudes to alcohol might be a natural process. In addition, parents probably want to limit their youths' drinking in the future, and might use strategies other than increasing control to accomplish this goal. It has been suggested that parents use reasoning rather than power assertion when they have long-term socialization goals (Kuczynski, 1984), which might explain the general decrease we found in parents' control over time. However, consistent with our expectations, in comparison with parents who had not

encountered their youths intoxicated, those who did showed a sharper decrease in strict attitudes over time. Hence, the decrease in strict attitudes among these parents indicates that there is something more than just normal development toward more acceptance of youth drinking.

According to dissonance theory (Festinger, 1957), reducing dissonance should result in reduced discomfort; not eliminating dissonance should leave people in an uncomfortable state. Consistent with this, our results showed that parents who encountered their youths intoxicated and kept their strict attitudes increased in worries over time. In addition, parents who encountered their youths intoxicated and became less opposed to youth drinking showed a small decrease in worries over time. These two groups of parents differed significantly in their changes over time. Thus, in line with our hypotheses, the change in attitudes could be interpreted as a strategy to reduce the discomfort caused by the dissonance between parents' opposition to youth drinking and the knowledge of their own youths' drinking.

For a number of youth problem behaviors, there is mounting evidence that when parents encounter problems, they tend to reduce their attempts to change the behavior (Hafen & Laursen, 2009; Huh et al., 2006; Kerr & Stattin, 2003; Kerr et al., 2008; Stice & Barrera, 1995). The findings of this study are convergent with those, not in showing behavioral changes, but in showing changes in parents' willingness to define the behavior as problematic. This, in itself, is important knowledge, because parents' attitudes about youth drinking have been shown, in an intervention program, to play a significant role in reducing youth drinking (Koutakis et al., 2008). In this intervention program, parents were encouraged to maintain strict attitudes toward youth drinking, and they were offered strategies to communicate their attitudes to their youths. Overall, maintaining strict attitudes was associated with less youth drinking over time. The results of the current study suggest that in the normal course of events parents do not tend to

maintain their strict attitudes, and this seems to be especially so when youths begin using alcohol in a problematic way. The current study provides insights about *why* parents do not maintain their strict attitudes in the normal course of events, and that knowledge can be used to improve interventions to reinforce parents' strict attitudes.

The present study has some limitations that warrant mention. We used only two waves of longitudinal data with a two-year interval, and because of that, we had to test our theoretical model in different steps, rather than in one model. However, all the results are consistent with our hypotheses from cognitive dissonance theory (Festinger, 1957), even with the two-year interval between measurements, which contributes to our confidence in the results. Another limitation is that we do not know about the parents' own drinking habits. Parents' drinking has been found to be moderately associated with youth alcohol use (van Zundert, van der Vorst, Vermulst, & Engels, 2006; White, Johnson, & Buyske, 2000), and parents who themselves drink alcohol have been found to use less restrictive alcohol-specific rules than other parents (van der Vorst et al., 2006). In this study, we do not know if parents' own drinking affected their reactions when they had encountered their youths intoxicated, and this is a limitation. It is possible that heavy-drinking parents feel that they cannot impose strict limitations on their youths' drinking because they are setting a poor example. If this were so, however, we should expect their attitudes toward youth drinking to be relatively lenient already at T1. By limiting our analytic sample to the most restrictive parents at T1, we decreased the likelihood of these parents being included, which helps to lessen concern about this issue. Nonetheless, whether and how parents' drinking might moderate their reactions to youth intoxication remains to be investigated in future studies.

The findings reported in this study should be seen in their cultural context. In many societies, youth drinking is not an issue because most youths do not drink, and in other societies, drinking among youths is not considered problematic by most parents. It is likely that parents in countries with relatively lenient attitudes toward youth drinking are less likely to face cognitive dissonance than parents in countries that have stricter attitudes toward youth drinking. Studies conducted in northern European countries (e.g. van der Vorst et al., 2006) as well as North America (e.g. Beck et al., 1995) have shown similar parental attitudes to youth drinking as were shown in this study. Overall, it can be expected that the findings reported in this study should be most generalizable to countries where most parents consider youth drinking a problem. However, the fact that parents might react differently in different cultures is an important aspect to be examined in future research.

Despite these limitations, this study has several strengths. One is the testing of theoretically based hypotheses about how youth influence their parents. A second strength is the use of a developmentally appropriate design, in the sense that we examined how parents reacted to youth intoxication at the ages of 13 to 16, which is the time when youth normally start to engage in drinking (Patrick & Schulenberg, 2010) and other problematic behaviors (Moffitt, 1993). Since parents are initially opposed to underage drinking, this is a legitimate time to expect a clash between parents' attitudes and youth drinking. Further, in this study we used parents' reports of their attitudes, which have not been used often in past research. Commonly, youths' reports of their parents' attitudes have been used, and they make interpretations somewhat unclear. Basing the study on parents' own reports gives us greater confidence in the results. Another strength of this study is the longitudinal design. Many studies concerning youth drinking have been cross-sectional, and parents' possible reactions to youth alcohol use have not

been considered. With the longitudinal design, we were able to show that youths' drinking predicted changes in parents' opposition to youth drinking, which would not have been possible with cross-sectional data. Finally, we had a high participation rate among parents. At T1, 68% of parents who were targeted participated in the project. Such a high participation rate among parents is very uncommon in the literature, and it gives us confidence that we covered the individual variations that existed in the sample.

Recent theorizing and empirical findings suggest transactional processes in which parents react to youth problem behaviors and youth react to parenting behaviors (Patterson, 1982; Sameroff, 1975). For many years, the less understood part of this process has been parents' reactions to youth problem behaviors. The results of this study showed that parents became less opposed to underage drinking after they had encountered their youth intoxicated. This reaction was explained as a way of eliminating the dissonance they experienced between their attitudes and their youths' behavior. The theoretical nature of this study and the empirical results help to fill a gap in earlier research, and as such, the study represents a step toward producing the knowledge needed for a better understanding of transactional family processes.

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Table 1

Descriptive Information About the Youth and Parent Samples

		Youth sample	
Age		M = 13.54	
Gender	Boys	56%	
	Girls	44%	
Ethnicity	Scandinavian	95%	
	Non-Scandinavian	5%	
Household	Two-parent	70%	
	One-parent	21%	
		Parent sample	
		Mother	Father
Ethnicity	Scandinavian	94%	92%
	Non-Scandinavian	6%	8%
Employment	Full-time	58%	95%
	Part-time	37%	2%
	Not working	5%	3%
Education	Elementary school	10%	11%
	High school	59%	71%
	University	31%	18%

Table 2

Correlations and Descriptive Information of Parents' and Youths' Behaviors at T1 and T2

Variable	1	2	3	4	5	6	7	8	9	10	<i>M (SD)</i>
1. Youths' delinquency T1	.										11.30 (0.74)
2. Parental worries T1	.17***	.									1.91 (0.90)
3. Parental control T1	-.10*	-.03	.								4.36 (0.65)
4. Youths' intoxication T1	.14**	.17***	-.11*	.							1.26 (0.78)
5. Parents' restrictive attitudes T2	-.05	-.13**	.14**	-.09*	.						3.57 (0.94)
6. Youths' delinquency T2	.40***	.09*	-.03	.08	-.07	.					11.56 (1.36)
7. Parental worries T2	.18***	.40***	-.01	.09	-.11*	.20***	.				1.94 (0.89)
8. Parental control T2	-.06	-.04	.60***	-.04	.22***	-.10*	-.01	.			3.95 (0.82)
9. Youths' intoxication T2	.13**	.15**	-.04	.33***	-.15**	.16**	.32***	-.11*	.		2.41 (1.57)
10. Encountered youth intoxicated T2	.26***	.15**	-.02	.18***	-.21***	.28***	.28***	-.05	.41***	.	0.19 (0.39)

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

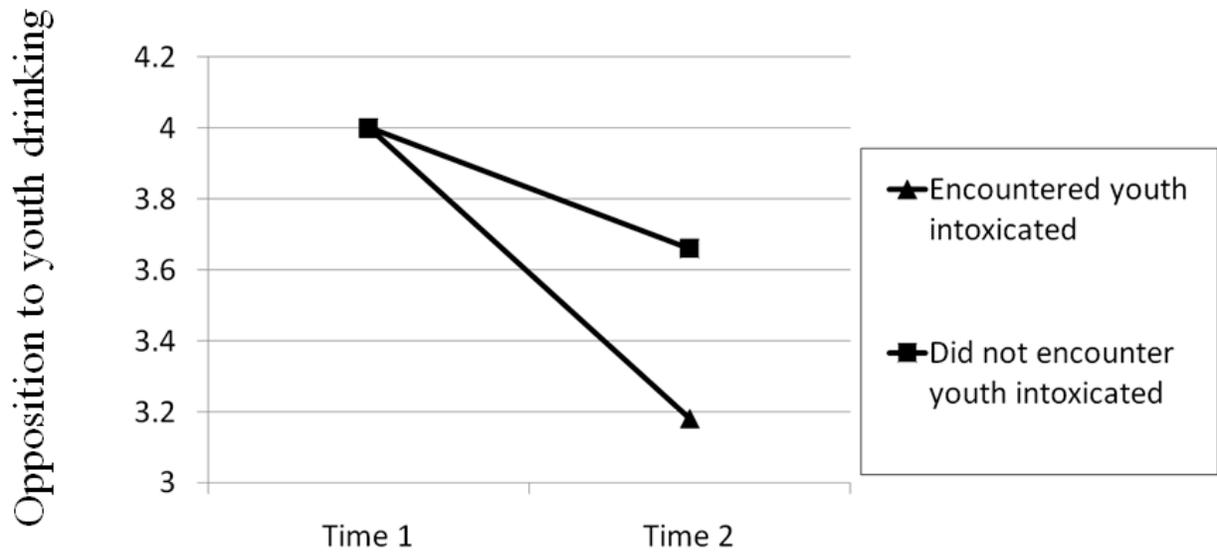


Figure 1. Opposition to youth drinking at T2 among parents who encountered their youth intoxicated between T1 and T2 and those who did not.

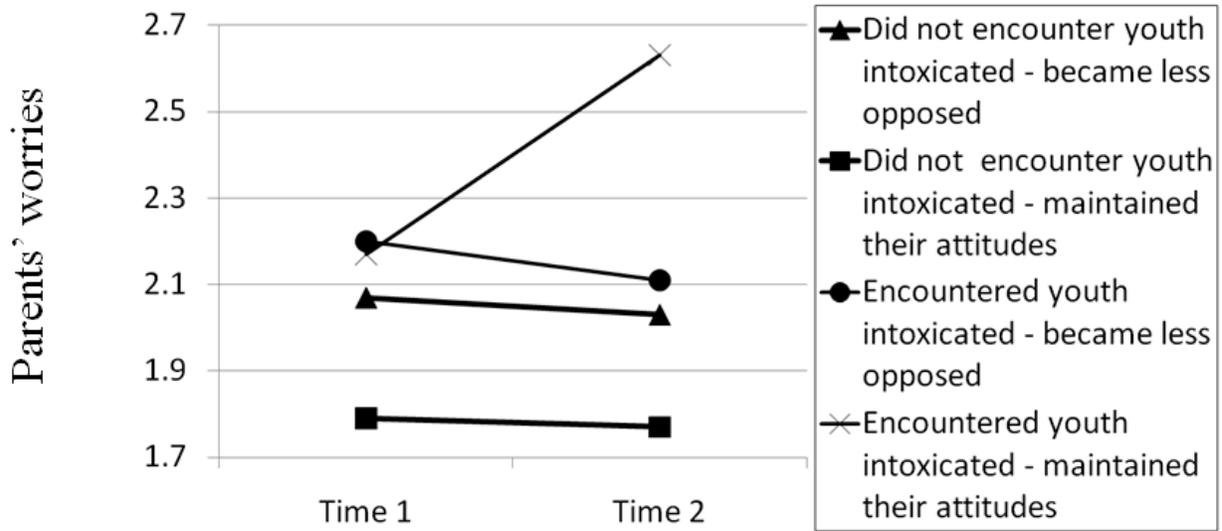


Figure 2. Worries about youth alcohol abuse among parents who between T1 and T2 (a) encountered their youth intoxicated or not and (b) became less opposed to youth drinking or not.

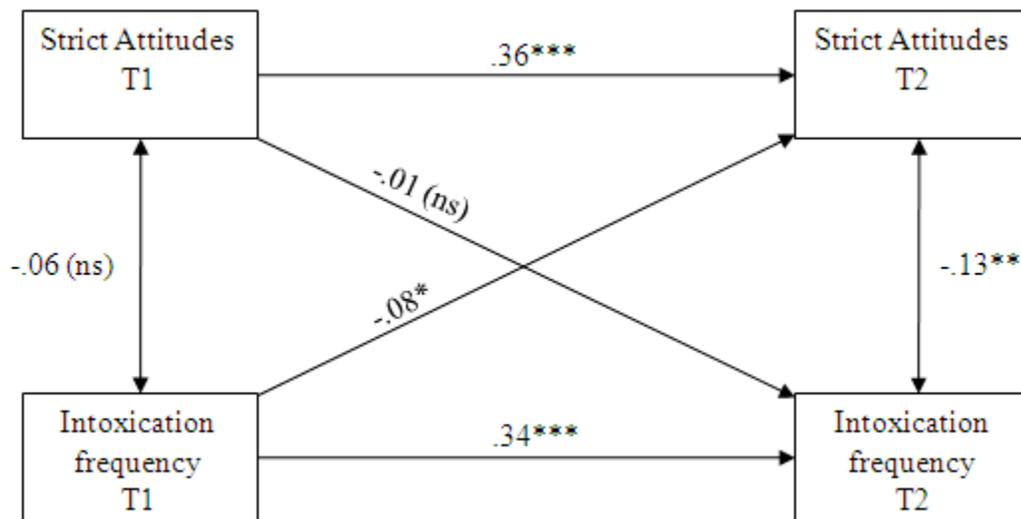


Figure 3. Cross-lagged model examining direction of influence between parents' strict attitudes about youth alcohol use and their youths' alcohol intoxication frequency.