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Fragile High Self-esteem and Alcohol Use
(Under the direction of MICHAEL H. KERNIS)

The relationship between fragile high self-esteem (SE) and daily alcohol use was examined in the present study. Seventy-six undergraduates completed Rosenberg's (1965) SE Scale to assess global SE. Fragile SE was assessed with the Contingent SE Scale (Paradise & Kernis, 2000) and a measure of SE Stability (Kernis et al., 1993) derived from multiple assessments of a modified SE scale in naturalistic contexts. For a two-week period, participants made daily reports of 1) their alcohol use, 2) their subjective preoccupations, and 3) the occurrence of objective events. Fragile SE was associated with greater alcohol consumption on days with more negative events than on days with fewer negative events. Fragile SE was also a significant predictor of consumption in conjunction with socializing and preoccupation with appearance. These relationships varied as a function of age and sex. The current findings suggest that fragile SE influences drinking behaviors in combination with the occurrence of day-to-day events and concerns.

INDEX WORDS: Self-esteem, Alcohol, Daily events, Fragile Self-Esteem,
                Self-esteem Stability, Contingent Self-esteem

FRAGILE HIGH SELF-ESTEEM AND ALCOHOL USE

by

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INTRODUCTION

"I feel sorry for people who don't drink because when they wake up

in the morning, that's as good as they're gonna feel all day."

Frank Sinatra

Overview

In this paper, I will describe a study examining the role of fragile high self-esteem

(SE) as a predictor of alcohol consumption. Recent research on fragile SE (e.g. Kernis,

Paradise, Whitaker, Wheatman, & Goldman, 2000) has revealed that people with high SE

(as well as people with low SE) exhibit varying degrees of fluctuations in their feelings of

self-worth. People whose positive feelings of self-worth are vulnerable to challenge can

be referred to as having fragile high SE (Kernis & Paradise, in press). I will first describe

evidence relating fragile high SE to a defensive, highly evaluation-sensitive outlook.

Second, I will present evidence from several studies on alcohol use and self-processes

that are relevant to my argument. Third, I will offer a set of predictions and describe the

methods employed to test them. Finally, I will describe the results of the investigation

and their implications.

Fragile High SE vs. Secure High SE

Fragile high SE refers to positive feelings of self-worth that are fragile and

vulnerable to threat (Kernis & Paradise, in press). People with fragile high SE are very

sensitive about how they feel about themselves and tend to do whatever it takes to

maintain, defend, or enhance their positive self-feelings. According to Kernis and

Paradise (in press), fragile high SEs exhibit many different types of self-protective or self-enhancement strategies. For people with fragile high SE, everyday events implicate their global feelings of worth or value. Specifically, positive outcomes typically bolster their positive self-feelings, whereas negative outcomes usually threaten their SE (Greenier, et al., 1999). Negative events are likely to evoke defensive strategies aimed at restoring positive feelings of worth (Kernis, Granneman, & Barclay, 1989). Due to the inevitable adversities that occur in life, someone with fragile high SE presumably experiences frequent declines (or drops) in his or her positive feelings of self-worth. In addition to a defensive or ego-involved outlook, fragile high SE is thought to reflect an impoverished sense of self (Kernis, Cornell, Sun, Berry, & Harlow, 1993; Kernis & Paradise, in press). Fragile high SE individuals might not have a clear sense of "who they are" because their feelings of self-worth are inconsistent and tend to vary from day to day. It is also possible that this impoverished sense of self contributes to fragile high SE because it promotes overreaction to specific events.

Secure high SE, on the other hand, is associated with stable and consistent positive feelings of self-worth (Kernis & Paradise, in press). People with secure high SE typically do not allow daily events to interfere with their positive self-feelings. Secure high SE is maintained over time and across different situations. Secure high SEs rarely attempt to bolster their feelings of self-worth because their feelings of self-worth are not easily threatened. Secure high SE, compared to fragile high SE, is thought to reflect a more integrated, coherent sense of self. Secure high SE individuals typically do not experience conflicted self-feelings that vary across time and situations like fragile high SE individuals do.

Both fragile high SE and secure high SE are theoretically independent from SE Level. SE Level refers to how one typically or generally feels about oneself (Rosenberg, 1965). SE Level is usually partitioned into high SE and low SE, but both of these classifications of SE Level involve a *typical* style of self-regard. Typical self-feelings reflect "evaluative judgments of personal qualities that are abstracted from numerous experiences whose self-relevant implications have been stored in memory" (Kernis & Johnson, 1990, p.243). SE Level can be thought of as a normal resting point for self-feelings, from which *current* self-feelings either fluctuate from that point or remain relatively fixed at that point (see Savin-Williams & Demo, 1983, for a related perspective). Current self-feelings reflect immediate feelings of self-worth and can be steady and consistently at a specific value (secure SE) or unsteady and inconsistent (fragile SE). Fragile high SE refers to the combination of high SE Level and fragile SE, which reflects typical positive feelings of self-worth coupled with current feelings of self-worth that are prone to fluctuation. Secure high SE is the combination of high SE Level and secure SE, which represents consistent positive feelings of self-worth. I have chosen to focus on the distinction between fragile high SE and secure high SE (and not on "fragile" vs. "secure" low SE) because fragile high SE has been continually associated with defensive, maladaptive self-processes, whereas secure high SE has been reliably related to positive psychological functioning (e.g. Kernis et al., 1993; Paradise & Kernis, 2000). The distinction between the positive and negative self-processes of "fragile" low SEs and "secure" low SEs is considerably less clear, in that research findings have not yielded a consistent pattern (see Kernis & Waschull, 1995).

Types of Fragile High SE

Two subtypes of fragile high SE will be investigated in the present study: unstable high SE (Kernis et al., 1993) and contingent high SE (Deci & Ryan, 1995; Paradise & Kernis, 2000). Both unstable high SE and contingent high SE can be considered fragile because they are associated with frequent fluctuations in self-worth, but the two have some distinct qualities as well (Kernis & Paradise, in press). For each form, I will present a description followed by empirical findings.

Unstable High SE. Unstable high SE is defined as the tendency to experience momentary, contextually-based fluctuations in positive feelings of self-worth (Kernis et al., 1989; Kernis et al., 1993). Unstable high SEs display greater variability in their immediate positive self-feelings compared to stable high SEs, who do not exhibit such fluctuations. Additionally, unstable high SEs adopt a defensive outlook to forestall the aversiveness of frequent drops in feelings of self-worth (Kernis et al., 1993). They continually feel like their positive self-worth is on the line and vulnerable to attack, and so they adopt a defensive, self-protective orientation to everyday events. Unstable high SEs are extremely sensitive to the SE relevance of everyday situations, referred to as being highly ego-involved in their daily lives (Deci & Ryan, 1995).

Kernis, Greenier, Herlocker, Whisenhunt, and Abend (1997) referred to this heightened ego-involvement as an "evaluative set" comprised of three interlocking components. First, an attentional component involves an enhanced focus on information or events with potentially self-evaluative implications. Second, a bias component involves interpreting ambiguous or non-SE relevant events as SE relevant. Third, a generalization component involves linking immediate global feelings of self-worth to specific outcomes and events. The tendency to engage in these processes suggests that

specific events can influence the self-feelings of unstable high SEs dramatically on a daily basis. Unstable high SEs therefore have been characterized as lacking a coherent, unified sense of self which remains consistent over time (Kernis & Paradise, in press).

In contrast, stable high SEs, who possess a strong, secure sense of their self-worth, do not maintain an "evaluative set." Stable high SEs are not susceptible to ego-threats and do not see SE relevance in cases where it does not exist (Kernis & Paradise, in press). They do not display a need to defend their positive self-feelings because they do not experience heightened ego-involvement or frequent threats to their feelings of self-worth. Specific outcomes do not have the same drastic self-evaluative implications for stable high SEs as they do for unstable high SEs.

There is considerable evidence linking unstable SE to an "evaluative set". Waschull and Kernis (1996) demonstrated that unstable SE was associated with a heightened tendency to attend to the self-evaluative implications of hypothetical events among grade-school children. Specifically, compared to children with stable SE, children with unstable SE reported that they would be more likely to become angry because of the SE-threatening aspects of the scenarios. Greenier et al. (1999) asked college students to provide daily descriptions of their most positive and negative experience for two weeks. For each event, participants indicated the extent to which it made them feel better or worse about themselves. The more unstable individuals' SE, the worse they reported feeling in response to negative events and the better they reported feeling in response to positive events. Greenier et al. interpreted these findings as evidence of unstable SEs' enhanced reactivity to daily events and tendency toward generalization of everyday events. As further evidence of the generalization component, Kernis et al. (1998) demonstrated that people with unstable SE experienced greater increases in depressive

symptomotology when dealing with daily hassles than did people with stable SE. Additionally, unstable SE was directly related to the self-reported tendency to overgeneralize the negative implications of failure, which refers to instances where specific failures activate global feelings of incompetence (Carver & Ganellen, 1983). This set of findings provides convergent evidence of the existence of the components of an "evaluative set" among unstable SEs.

Other research by Kernis and his associates has linked unstable high SE with a defensive, SE-protecting perspective. Kernis, Cornell, Sun, Berry, and Harlow (1993) examined the reactions of stable and unstable high SEs to different kinds of feedback. After assessing SE Level and Stability in Phase 1, the experimenters exposed participants to either positive or negative feedback in Phase 2. Following positive feedback, unstable high SEs, compared to stable high SEs, regarded the feedback as more accurate, were more attracted to the evaluator, and experienced more positive affect. In reaction to negative feedback, unstable high SEs offered excuses and maligned the evaluator to a greater extent than did stable high SEs. In short, unstable high SEs displayed greater reactivity to both positive and negative feedback and engaged in self-protective and self-enhancing strategies more so than did stable high SEs.

Kernis, Greenier, Herlocker, Whisenhunt, and Abend (1997) demonstrated that stable and unstable high SEs reported considerable differences in how they would react to either a good or poor performance. Compared to stable high SEs, unstable high SEs reported being less likely to attribute good performance to luck or task ease and being more likely to boast to a friend and feel superior. Following a poor performance, unstable high SEs indicated a greater likelihood of doubting their ability, becoming angry at the evaluator, and blaming uncontrollable factors than did stable high SEs. These

findings suggest that unstable high SEs defend their fragile feelings of self-worth by lashing out at potential threats and by embracing and embellishing their accomplishments.

Heightened affective reactions such as anger are a key component of defensiveness and are often aimed at restoring damaged self-feelings (Felson, 1984). Kernis, Granneman, and Barclay (1989) found that unstable high SEs had higher scores on several well-validated anger and hostility inventories (e.g. the Novaco Anger Inventory; Novaco, 1975) than stable high SEs. Paradise and Kernis (2000) investigated the relationship between fragile SE and defensive reactions to ego-threats. In their study, participants were asked to give a speech that would ostensibly be evaluated by another participant in an adjacent room. In actuality, there was no other participant and the evaluation was pre-fabricated. It contained either an insult with severe attacks on the participant's character or an innocuous comment. In reaction to the insulting evaluation, unstable high SEs reported more anger than did stable high SEs. Instead of dismissing the ego-threat, unstable high SEs became defensive by displaying relatively intense anger and reactivity. Anger appears to be a way for unstable high SEs to deal with the damaging implications of an ego-threat, as well as other negative daily occurrences.

In sum, a variety of research findings indicate that unstable high SE is associated with a defensive, protective (and enhancing where possible) outlook characterized by heightened ego-involvement, enhanced reactivity to daily events, and intense affective experiences. Moreover, unstable high SEs are likely to engage in several kinds of self-protective strategies aimed at preventing drops in their positive self-feelings. Taken as a whole, these findings provide compelling evidence that unstable high SE reflects positive, but fragile feelings of self-worth.

Contingent High SE. Contingent high SE is defined as the tendency to base positive feelings of self-worth on specific outcomes or events (Deci & Ryan, 1995). Someone with relatively contingent high SE tends to interpret his or her self-feelings from performance in a given context. If he or she does well at a certain activity, then he or she tends to feel like a valuable, worthwhile person, but if the result is negative, then he or she tends to feel like a failure. Contingent high SE reflects positive self-feelings that are dependent on matching standards, meeting expectations, or achieving specific outcomes or evaluations. Contingent feelings of self-worth are almost always fragile because people experience a wide range of both negative and positive potential outcomes in life (but it is theoretically possible to maintain a consistent kind of contingent high SE if one is always experiencing positive outcomes; see Deci & Ryan, 1995).

Contingent high SE is contrasted with true high SE, which refers to the tendency toward possessing consistent favorable feelings of self-worth based in a solid sense of self. According to Deci and Ryan (1985), true high SE emerges naturally from satisfaction of fundamental psychological needs for competence, self-determination and relatedness. Someone with relatively true high SE does not require continual validation from situational cues. Negative outcomes might upset someone with relatively true high SE on an affective level, but he or she would not let the negative event threaten his or her feelings of self-worth. True high SE is therefore a form of secure high SE because it reflects positive self-feelings that are not vulnerable to challenge.

Contingent high SE appears to share some qualities with unstable high SE, such as a high degree of ego-involvement (Kernis & Paradise, in press). In other words, people with relatively contingent high SE, like those with unstable high SE, are also highly sensitive to the SE implications of daily events (Deci & Ryan, 1995).

Additionally, contingent high SE is thought to be associated with a defensive outlook aimed at protecting favorable feelings of self-worth (Kernis & Paradise, in press). In fact, recent evidence (Paradise & Kernis, 2000) does link contingent high SE with heightened defensiveness, especially in reaction to ego-threats. In their study on fragile high SE and reactions to ego-threats, Paradise and Kernis (2000) found that people with relatively contingent high SE reported more anger in reaction to an insult than did people with relatively noncontingent high SE. This finding suggests that becoming angry is a means of dealing with SE threats for people with contingent high SE. It also indicates that people with contingent high SE are especially reactive to SE-threatening information. Although more work needs to be done to bolster the arguments regarding contingent high SE, existing evidence links contingent high SE with defensiveness and heightened sensitivity to potential SE threats.

Fragile High SE: A motive to drink?

The foregoing review indicates that fragile high SE is related to heightened sensitivity to potential SE threats, which is often manifested in ego-involvement, overgeneralization, and anger. It is possible that fragile high SEs might turn to alcohol use as a way of distancing or disengaging themselves from these tendencies, i.e. their alcohol consumption could be fueled by the maladaptive self-processes associated with fragile high SE. Having a drink has long been considered a means of relaxation and escaping one's troubles (Banaji & Steele, 1989). In particular, alcohol tends to distract drinkers from typical routines and patterns. It is my contention that alcohol might be especially distracting for fragile high SEs. Alcohol has the potential to reduce the salience of an "evaluative set" among fragile high SEs. When consuming alcohol, fragile high SEs might not display the same attentional, interpretational, and generalization-

related biases that seem to characterize them. By disengaging fragile high SEs from their typical cognitive strategies, alcohol might reduce their sensitivity to daily events and their heightened ego-involvement.

Alcohol use among fragile high SEs may be one of several strategies that they use in attempts to protect themselves against the adverse impact of negative events, which include derogating the source of an ego-threat (Kernis et al., 1993) or blaming outside factors for failure (Kernis et al., 1997). In other words, alcohol consumption might be another way to prevent potentially threatening negative outcomes from undermining fragile high SEs' positive feelings of self-worth. Alcohol has the potential to be protective because of its profound effects on many aspects of cognitive processing. For example, studies have indicated that alcohol consumption undermines self-relevant processing (e.g. Hull & Young, 1983; Hull, Levenson, Young, & Sher, 1983). Prevention of the ability to process negative information about the self might constitute a motive for drinking. Another self-protective motive might involve self-handicapping, where poor performances can become linked to alcohol instead of the self (Jones & Berglas, 1978). On a more general level, alcohol consumption has been related to interference with complex processing of all types of information, which can promote extreme, uncharacteristic behavior (e.g. Steele & Josephs, 1990; Zeichner, Allen, Giancola, & Lating, 1994). In the following sections, I will review evidence related to the disruptive effects of alcohol on typical modes of information-processing that have implications for fragile high SE.

Alcohol and Self-Awareness

Across several studies, alcohol has been shown to decrease self-awareness (Hull & Schnurr, 1986). Hull (1981) introduced the notion that alcohol interferes with self-

awareness by inhibiting the processing of self-relevant information. He argued that people "might at times desire to avoid self-evaluation, particularly when faced with information indicating failure at an important role, [so] self-awareness reduction is proposed to constitute one motive for alcohol consumption" (p. 172). Hull claimed that alcohol affects processing of information about the self by decreasing the propensity of the individual to use self-relevant encoding schemes.

Hull, Levenson, Young, and Sher (1983) demonstrated the self-awareness reduction effects of alcohol in an experimental setting. In Study 1, they asked participants to give an open-ended speech after either consuming an alcoholic or placebo beverage. Participants who had consumed alcohol used significantly fewer self-focused statements (as rated by independent observers) and marginally fewer first-person pronouns than did participants in the placebo condition. In Study 2, the authors tested the hypothesis that alcohol undermines self-awareness by inhibiting the utilization of self-relevant encoding schemata. Participants were characterized as either high or low in private self-consciousness, the dispositional counterpart to situational self-awareness, as assessed with the Self-consciousness Scale (Fenigstein, Scheier, & Buss, 1975). They then were randomly assigned to drink either an alcoholic or placebo beverage. The dependent measure was an incidental memory paradigm developed by Rogers, Kuiper, and Kirker (1977). In the placebo condition, high private self-conscious participants recalled more words encoded in terms of their self-relevance than did low private self-conscious participants (which replicated previous studies). In contrast, no differences emerged between the high and low private self-consciousness groups who had consumed alcohol. These studies provided initial evidence that alcohol inhibits the process of encoding information according to its self-relevance.

Hull (1981) also proposed that alcohol use can vary depending on the kinds of reactions people have to daily events. According to Hull, failure and success have different effects on self-awareness. Specifically, people try to avoid self-awareness following failure and increase self-awareness following success (Fenigstein, 1979). Therefore, alcohol consumption may be a means for highly self-aware individuals to reduce self-awareness after receiving threatening information. Hull and Young (1983) tested the hypothesis that highly self-conscious individuals would display increased alcohol consumption following failure and decreased consumption following success. Participants were characterized as either high or low in private self-consciousness, and then they were assigned to a failure or success condition. After the success/failure manipulation, participants were sent to another apparently unrelated study on wine tasting, where they completed the Multiple Affect Adjective Check List (MAACL; Zuckerman & Lubin, 1965) and had unlimited access to a variety of wines. High private self-conscious participants given failure feedback drank more wine than high private self-conscious participants given success feedback. Low private self-conscious participants fell in between these extremes and did not differ as a function of success/failure feedback. The same pattern emerged for mood scores on the MAACL. Hull and Young demonstrated that alcohol consumption can vary depending on the individual's motives and dispositions. Specifically, low private self-conscious participants did not seem to be affected by the feedback manipulation. In contrast, high private self-conscious participants displayed heightened sensitivity to the events in the experiment and turned to alcohol as a means of coping.

Alcohol and Self-Handicapping

In addition to inhibiting self-awareness, alcohol is frequently used as a means of self-handicapping. Self-handicapping refers to behaviors that are intended to hamper normal abilities, thereby rendering the causes of performance ambiguous (Jones & Berglas, 1978). By engaging in handicapping behaviors, an individual avoids personal responsibility for failure because the poor performance could have been the result of another causal agent. Jones and Berglas (1978) proposed that alcohol creates causal ambiguity because it debilitates performance at a wide variety of tasks. If one is intoxicated during performance, then the true reason for failure cannot be accurately determined; failure might be due to one's lack of ability or to the debilitating effects of alcohol. As an example, suppose a student faces a tough final exam. Instead of studying the night before, he goes out, has several drinks, and makes himself sick. He barely makes it to the exam in the morning and fails it. The student has rendered the cause of his failure ambiguous: was it due to his lack of ability or the damaging effects of the drug? On the other hand, if the student had received an A on the exam, then presumably his success was the result of overwhelming personal ability that overcame the debilitating effects of drinking. Self-handicapping can create a "no-lose" situation where one receives credit for success while avoiding blame for failure.

Self-handicapping often is used as a strategy to prevent negative outcomes from damaging positive self-feelings. Berglas and Jones (1978) provided some evidence that drugs can be used for self-handicapping purposes in threatening contexts. They asked participants to work on either solvable or unsolvable analogies. Both groups received success feedback, which created a contingent success interpretation for the solvable group and a noncontingent success interpretation for the unsolvable group (here,

contingent refers to the type of feedback: contingent means the judgment was based on actual performance, whereas noncontingent means the judgment had no connection to performance). Participants then were given the choice between performance enhancing or debilitating drugs (actually placebos) before retaking a similar intellectual test. For noncontingent success participants, drugs thought to debilitate performance were preferred, which served to reduce the diagnosticity of the future performance. This effect emerged even when publicity of the first test performance was manipulated, so people receiving noncontingent success engaged in self-handicapping even when no one else was aware of their first performance. A drug-related self-handicapping strategy appears to be a way of defending the private self as well as the public self.

Tucker, Vuchnich, and Sobell (1981) replicated Berglas and Jones' (1978) experiment but included alcohol use as the dependent measure instead of drug use. They found that participants in the noncontingent success condition consumed more alcohol and had higher Blood Alcohol Levels than did participants in the contingent success condition. In a follow-up study, the self-handicapping effect emerged regardless of the anticipated difficulty of the subsequent test. These findings suggest that drug-induced self-handicapping is often used for people facing uncertain outcomes, especially when the reasons for the original performance are ambiguous.

Fragile high SEs often interpret their performance in specific situations as markers of their self-worth. Self-handicapping through alcohol use might be a way for fragile high SEs to avoid potential ego-threats by rendering the causes of their actions ambiguous. In cases of failure, fragile high SEs might not be as likely to implicate their feelings of self-worth if they have engaged in self-handicapping.

<u>Alcohol and Information-Processing</u>

Steele and Josephs (1990) proposed a model of alcohol consumption effects that they have termed "alcohol myopia." They argued that alcohol generally impairs perception and thought so that information-processing suffers. According to Steele and Josephs, alcohol changes thoughts and behavior through an interaction of myopia, or short-sighted information processing, and the nature of the cues impinging on the drinker during intoxication. Steele and Josephs identified three consistent effects of alcohol: 1) drunken excess, or the tendency to make social actions more extreme or excessive; 2) drunken self-inflation, referring to the ability to inflate drinkers' egos; and 3) drunken relief, or the ability to relieve psychological stresses under some conditions. The following three sections contain a description of the nature of each alcohol effect and a discussion of the relevant evidence.

<u>Drunken Excess</u>. Alcohol often leads to extreme social behaviors such as increased aggression, risky sexual behavior, and so forth. Steele and Josephs argued that alcohol influences excessive behaviors indirectly, by preventing the drinker from responding normally to inhibiting cues. Several studies have shown that normal information processing capabilities become disrupted during intoxication (e.g. Hull et al., 1983). Steele and Josephs emphasized two impairments as critical in this phenomenon. First, intoxication consistently restricts the range of cues that can be perceived in a situation, so attention becomes narrowed. Second, intoxication reduces the ability to process and extract meaning from the cues and information that are perceived. Drinkers are "less able to elaborate incoming information, to relate it to existing knowledge, and thereby to extract meaning from it" (Steele & Josephs, 1990, p. 923). Alcohol limits the ability to perceive and encode correctly but still leaves one able to respond to salient,

immediate cues. Steele and Josephs (as well as Taylor & Leonard, 1983) maintain that

salient cues are typically associated with responses that become extreme behavior, such

as hearing an insult and punching the perpetrator.

On the other hand, peripheral cues associated with more deliberate processing

become dampened while intoxicated. In particular, peripheral cues normally involving

inhibitory responses tend to be disrupted. Hearing an insult while sober would normally

lead to inhibition conflict where an immediate aggressive response is inhibited (or at least

confronted) by peripheral cues such as fear of injury, potential punishment, etc. Instead,

the drunken insult victim immediately looks to get even without interpreting the

consequences. Evidence from a number of empirical investigations (e.g. Shuntich &

Taylor, 1972; Zeichner, Allen, Giancola, & Lating, 1994) have shown that increases in

disinhibited behavior after alcohol consumption is a function of the interaction of the

pharmacological state induced by alcohol and the environmental cues surrounding the

intoxicated person. Specifically, consumption of alcohol is most likely to lead to

defensive, extreme, or aggressive behavior only when the drinker is exposed to a threat.

Steele, Critchlow, and Liu (1985) offered additional evidence for the drunken

excess hypothesis by examining the effect of alcohol on helping, a behavior which is

often conflictual. Participants were asked to perform tedious vowel-searching on a legal

document for 17 minutes. They expected to relax for the remaining 25 minutes of the

session but the experimenter made an urgent appeal to do more vowel-searching. Steele

et al. assumed that the last-second request would establish a conflict between the impulse

to help (immediate, salient cue) and the desire not to do any more work (peripheral cues

influenced by other concerns such as having to get to class, fatigue, etc.). A weak

conflict condition was created where participants received only mild pressure to help in

the form of a written note at the bottom of a questionnaire. Alcohol consumption was also manipulated so that half of the participants had consumed alcohol before the initial task, whereas the other half had consumed a placebo drink. By itself, alcohol consumption did not affect helping behavior-no significant main effect emerged. Alcohol only increased helping for participants in the high conflict condition. Steele and Josephs (1990) found the same pattern of results when they conducted a meta-analysis of studies involving alcohol consumption and social behavior.

There is compelling evidence that alcohol does make social behaviors more extreme, but only under the right circumstances: times of high inhibitory conflict. Fragile high SEs are prone to defensive reactions such as anger and hostility (Kernis et al., 1989), so they might often be experiencing inhibitory conflict about these reactions. Alcohol consumption has the potential to reduce inhibitory conflict among fragile high SEs and set the stage for defensive behaviors and emotional reactions.

Drunken Self-inflation. Banaji and Steele (1989) argued that another aspect of alcohol's conflict-blocking effect is related to self-evaluation. They theorized that most people have a need to think positively of themselves, but it is easy to activate information that contradicts these desired self-images. A self-evaluative conflict is subsequently created. As it can do with everyday inhibitory conflicts, alcohol is thought to have the potential to disinhibit self-evaluative conflicts. While sober people tend to acknowledge peripheral cues such as past failures, intoxicated people do not devote as much attention to peripheral cues and instead focus on the salient self-evaluative cues that tell them how great they are. For example, suppose a guitar player wants to think of himself as a great talent, but he readily accesses deficiencies in his playing that inhibit his favorable evaluation. After a few drinks, however, he starts to boast that he is the next Jimi

Hendrix. Through the myopia it causes, alcohol impaired access to the more remote inhibiting cues (maybe this is why so many struggling musicians and starving artists are alcoholics).

To test the drunken excess hypothesis, Banaji and Steele (1989) asked participants to rate the personal importance of 35 trait dimensions and their "real" and ideal" standing on each dimension. These ratings were made both before and after participants consumed an alcoholic drink or a placebo drink. Intoxication significantly inflated self-evaluations, but only on traits that were important and for which, before drinking, they had acknowledged that their "real" self was considerably worse than their "ideal" self. For the five traits with the largest ideal-real discrepancies (strong conflict), intoxicated participants significantly increased their ratings of their real selves after drinking. Alcohol had no such effect on weak-conflict traits, i.e. the five smallest ideal-real discrepancies. Consumption of placebo drinks was not associated with change in ratings on any traits. Again, alcohol appears to facilitate extreme responses, even ones related to important self-evaluations, but only in the presence of strong inhibitory conflict.

Fragile high SEs presumably experience conflict between their tenuous feelings of self-worth and everyday negative outcomes. It is possible that alcohol consumption might reduce such self-related conflicts. According to the drunken self-inflation hypothesis, intoxicated fragile high SEs would tend to focus on salient cues that tell them how great they are. Peripheral cues that indicated poor performance would tend to become ignored while drinking.

Drunken Relief. Levenson, Sher, Grossman, Newman, and Newlin (1980) proposed that alcohol can reduce the magnitude of responses to stress in a process they termed stress-response dampening (SRD). Their model posits that a stressor has less of a

threatening impact when a person consumes alcohol. Although the SRD model has widespread intuitive appeal, the literature on SRD contains many contradictory findings, mainly because of methodological inconsistencies and a great degree of inherent variability in human responses to the same stressors (Sayette, 1993; Zeichner, Giancola, & Allen, 1995). Steele and Josephs (1990) argued that alcohol's tension-reducing effects must be interpreted in terms of the myopia it creates.

According to Steele and Josephs, alcohol restricts attention to the salient, immediate aspects of experience. A greater proportion of resources are therefore devoted to ongoing activity. If a drinker is upset about something, then the alcohol-induced myopia would tend to force the drinker to brood over the salient issue. On the other hand, alcohol could help suppress worrisome thoughts if some other prominent aspect of the situation takes up processing capacity. Some ongoing activity requiring attention and thought could use up resources that previously were devoted to stresses. Steele and Josephs are essentially arguing that if a stressed drinker sits around doing nothing, he or she is likely to ruminate over his or her worries because alcohol has constricted attention to this salient, irksome issue. The stressed drinker who engages in some distracting activity, even something as innocuous as watching TV, will not have the processing resources to brood over his or her worries. Alcohol is therefore proposed to have a tension-reducing effect under the right circumstances.

To test the drunken relief hypothesis, Josephs and Steele (1990) investigated the effects of alcohol on situationally anxious undergraduates. Participants consumed either an alcoholic or placebo beverage and were told that they would give a speech on "What I dislike most about my body and physical appearance" to be rated by psychology graduate students. They had to wait 15 minutes before the speech, giving them ample time to

ruminate about the stressor. Half of the intoxicated and sober participants then engaged in a distracting activity for the next 7 minutes, while the other half did nothing during this period of time. Anxiety was measured after the 7-minute time span and again after the experiment was over. Only intoxicated, distracted participants experienced a reduction in anxiety. Intoxicated participants who did nothing actually reported greater anxiety at Time 2. Anxiety levels for participants in both placebo conditions did not change.

In a second experiment, Josephs and Steele replicated the first experiment and manipulated the cognitive demand of the distracting task as well. Intoxicated participants displayed greater reduction in anxiety after performing the moderate and high demand distracter conditions than intoxicated participants in the low demand condition (who still reduced their anxiety). Again, intoxicated participants with no distracter experienced an increase in anxiety. Steele and Josephs (1990) characterize these findings as evidence of a "one-two punch" of alcohol and activity. First, alcohol appears to pharmacologically weaken attentional capacities. Then activity occupies them with immediate distraction rather than worry, thereby providing relief.

Alcohol may have a similar distracting effect for fragile high SEs. When faced with potentially threatening information or situations, fragile high SEs might have a motive that involves reducing the impact of the stressor. By weakening attentional capacities, alcohol might reduce fragile high SEs' sensitivity to the self-evaluative aspects of everyday events. However, the evidence from Steele and Joseph's (1990) experiments suggest that fragile high SEs would require some additional activity to prevent "stewing" over negative outcomes.

Psychological Correlates of Alcohol Use

The foregoing review indicates that alcohol reliably disrupts typical cognitive strategies, particularly in cases of inhibitory conflict. The next section will describe the literature involving the relationship between typical, everyday alcohol consumption and psychosocial variables. In this review, I will focus on research involving undergraduates, because they constituted the sample in the current investigation.

Over the past two decades, several social and biological variables have been linked to drinking. A consistent finding in the literature involves sex differences (Berkowitz & Perkins, 1987). In both quantity and frequency of consumption, men display higher rates of drinking than women. Berkowitz and Perkins (1987) explained that the majority of men and women have light-to-moderate patterns of consumption, but a minority of men exhibits extremely high consumption, which amplifies the sex difference. Men and women also possess different reasons for drinking: men tend to desire escape or simply to "get drunk", whereas women want to increase their sociability (Berkowitz & Perkins, 1987).

Additionally, age-related trends exist in drinking behavior, even among college students. Harford, Wechler, and Rohman (1983) found that frequent light drinking tended to increase with class year for all students, but only female students showed a decline in frequent heavy drinking. Nezlek, Pilkington, and Bilbro (1994) found that frequency of heavy, binge-drinking episodes (defined as 5 or more drinks in one setting) was related to the quality of college students' social interactions. Specifically, undergraduates who had no binge-drinking episodes reported less intimacy and less disclosure in their interactions than those who had some episodes. Nezlek et al. argue that some binge drinking is normative and might be seen as desirable among college

students, so students with an acceptable number of binge episodes could be better integrated into the college community than those with no binge episodes.

The relationship between personality/self-related variables and alcohol use has also been examined among college students. Schall, Kemeny, and Maltzman (1992) asked undergraduates to complete the Eysenck Personality Questionnaire (EPQ; Eysenck & Eysenck, 1975) and a retrospective measure of their drinking habits for the past four weeks. The results indicated that the Extraversion and Psychoticism subscales were positively related to self-reported alcohol consumption whereas the Lie subscale was negatively related to self-reported consumption. Zuckerman, Buchsbaum, and Murphy (1980) demonstrated that typical alcohol use was more prevalent among high sensation-seekers than low sensation-seekers. In an investigation of alcohol use and self-related variables, Valliant and Scanlan (1996) asked undergraduates to complete a total weekly consumption measure, an excessive alcohol behavior measure, the Coopersmith (1981) SE Inventory, and questionnaires regarding their expectancies for drinking. Low SE was related to higher scores on the total consumption measure. Students with high excessive alcohol scores (i.e. frequent binge drinkers) reported that they expected alcohol to increase their SE and psychological well-being.

In the present study, I have further investigated the relationship between self-processes and drinking behavior. Although a negative correlation between SE Level and typical alcohol consumption has emerged in previous research, the relationship between fragile high SE and daily alcohol use has not been investigated. Before describing the current investigation, I turn first to a discussion of the types of methodologies that have been used to measure alcohol consumption in previous studies.

Measurement of Alcohol Consumption

Researchers have utilized several methods for measuring typical patterns of alcohol consumption. Assessments of alcohol use can be made in either a ongoing manner, where respondents maintain current records of their consumption, or in a retrospective manner, where respondents estimate their consumption over a preceding time interval. Most assessments of alcohol use are performed in a retrospective manner, because ongoing accounts often demand more time and resources. Retrospective accounts involve reflecting on an already-elapsed time period and reporting the number of drinks consumed during that period, either per day or in total.

There are several versions of retrospective reports of alcohol use that have appeared in the literature. One version, called "Weekly Recall," asks respondents to report their drinking that took place on the seven days prior to the day of the assessment. Respondents are asked to recall the number of alcoholic drinks consumed on each of the seven days. A variation of the Weekly Recall method is the Timeline Follow-Back technique (TLFB; Sobell & Sobell, 1992), which measures consumption over a longer time-span. In TLFB, respondents are presented with a 28-day calendar and asked to recall their drinking for each day on the calendar. A third kind of retrospective alcohol account is the Typical Consumption measure, which consists of only one question about usual daily consumption of any alcoholic beverage. Daily consumption can be multiplied by 7 to obtain weekly consumption or by 28 to obtain monthly consumption. A more sophisticated version of the Typical Consumption index is the Quantity-Frequency (QF) index. To assess frequency, respondents are asked to report their modal or usual frequency of drinking for each week of a given time period (usually 1 month to 6 months) by selecting from a list of options ranging from "none" to "every day". To estimate

quantity, an open-ended question asks about the number of glasses usually consumed during a drinking occasion in that period. The quantity and frequency scores can be multiplied to obtain an estimate of total weekly consumption. The QF index and the TLFB method are popular techniques because of their efficiency and ease of administration.

All of these retrospective accounts have the advantage of economy. Each technique can be administered in one setting, the administration does not require much time, and the costs are minimal. However, the primary downside of retrospective accounts is the problem of recall error. Accuracy of recall tends to decrease rapidly as the length of the reference period increases (Lemmens, Tan, & Knibbe, 1992). While recalling past behaviors, respondents are especially likely to underreport their drinking (Carney, Tennen, Affleck, Del Boca, & Kranzler, 1998). Another shortcoming of retrospective accounts is that they obtain only habitual patterns of alcohol consumption (Nezlek, Pilkington, & Bilbro, 1994). Actual levels of consumption might vary widely from day to day, especially in cases of binge drinking. For example, one person could consume 10 drinks on only one night, while another person could spread 10 drinks out over three or four occasions in a week. QF or Total consumption measures would not capture the disparity between the two drinkers. Although retrospective measures have methodological advantages, they fail to distinguish total consumption from consumption patterns.

Ongoing accounts, on the other hand, are less likely to contain recall error, and they can provide a reliable way to assess daily consumption patterns. Maintaining a diary is the most common form of ongoing accounts. In diary studies, participants are asked to make daily assessments of the number of drinks that they consumed. Diaries have

traditionally been self-administered in a paper and pencil format, but researchers have begun to rely more on electronic formats, such as daily telephone interviews (Hoppe et al., 2000) and hand-held computers that record each drink consumed (Carney et al., 1998). The diary method is thought to be superior to retrospective accounts because of the shorter time interval between consumption and reporting (Lemmens et al., 1992). Respondents completing their assessments in a "real-time" manner should be less likely to underreport consumption due to recall error. The results of several studies support this assertion. Lemmens et al. (1988) found that a diary method yielded a 22% higher average weekly consumption than the Weekly Recall method. In addition, Lemmens et al. (1992) found that a diary method elicited higher frequency of consumption than the QF, Weekly Recall, and Total Consumption measures among light to moderate drinkers but not among heavy drinkers. Carney et al. (1998) compared the TLFB, traditional diary, and computer diary methods and found that participants reported fewer drinks per day and fewer ounces consumed per day on the TLFB compared to the prospective measures.

Despite the apparent advantages of ongoing diary accounts, one criticism involves a sensitization or self-monitoring effect where people keeping a diary become overly aware of their drinking habits. Most people are not cognizant of the exact amounts of alcohol that they consume, so constantly reporting consumption might disrupt normal patterns. Lemmens et al. (1992) concluded that this problem is trivial for periods as short as 1-2 weeks, because any increased sensitivity to drinking habits should not manifest very quickly. Although the diary method is not error-free, its primary advantage is that it refers directly to behavior and does not require abstractions or subjective evaluations of drinking habits. Another advantage of the diary method is the potential to collect

additional data on other aspects of the respondent's daily experiences. For the present study, I attempted to determine if stressors or SE-related events affected a respondent on a given day. The diary method allows respondents to report the presence or absence of important events on each day of reporting. For these reasons, the present study utilized a diary method to measure alcohol consumption.

The Present Study

Past theory and research have portrayed fragile high SEs as defensive, extremely sensitive to any potential threats, and prone to anger. In addition, research on alcohol use and the self has revealed that self-processes play a role in motives for drinking. Integrating these two lines of research suggests that alcohol might be used by fragile high SEs to cope with potentially ego-threatening situations. Specific motives for fragile high SEs might include reducing self-awareness, which would prevent fragile high SEs from focusing on the SE-related implications of everyday events. A second self-protective motive might involve self-handicapping, whereby fragile high SEs could ascribe the causes of negative outcomes to alcohol and not to themselves. A third motive might involve resolving inhibitory conflicts between positive feelings of self-worth and threatening information. Finally, it has been demonstrated that some people derive tension-reducing benefits from alcohol consumption, and fragile high SEs might use alcohol to reduce the negative effects of stressors, particularly those that are SE-relevant.

To test these propositions, I assessed SE Level, SE Stability and Contingent SE in a sample of undergraduates and then asked them to report their alcohol use in a diary format. Participants were asked to list the number of alcoholic drinks that they consumed each day. They were also asked to report the occurrence of various events for each day, such as poor performance on exams, disagreements, etc. In addition, a series of questions

involving subjectively based preoccupations that might constitute reasons for drinking (SE and non-SE related) were included.

It was anticipated that fragile high SEs would report greater frequency of alcoholic drinks consumed than secure high SEs. It was also expected that fragile high SEs would demonstrate more preoccupation with subjective concerns in accord with their drinking than would secure high SEs. These predictions rested on the argument that fragile high SEs would consume alcohol to reduce the salience of their "evaluative set." It was also expected fragile high SEs would consume more alcohol on days involving negative life events than on routine days, given previous findings that fragile SEs are particularly reactive to daily events (Greenier et al., 1999). Finally, compared to secure high SEs, fragile high SEs were predicted to report more binge-drinking episodes. A high frequency of heavy-drinking episodes would reflect a greater reliance on the intense experience of the intoxicated state and its disruptive properties.

SECTION 2

METHOD

<u>Participants</u>

Seventy-six undergraduates at the University of Georgia participated in this study for course credit (86 participants began the study but 10 either dropped out or were excluded from the analyses for reasons listed below). Introductory Psychology students were recruited through the RP pool. They were asked to complete four separate phases of a study on the relationship between personality and the various recreational activities people enjoy on a day-to-day basis. Fifty-four of the participants were female and 22 were male. Sixty-one participants were under the age of 21, and 14 were of legal drinking age (1 participant did not specify her age on the questionnaire).

<u>Phase 1 (Questionnaire Completion)</u>

Participants met in groups of 10-14 people to complete several measures of favorability and fragility of self-appraisals, which will be described below. At the beginning of the session, the experimenter described the study in detail. To attempt to alleviate any potential concerns about reporting alcohol use among participants, the experimenter stressed to participants that their responses to any questions would remain strictly confidential. The experimenter explained that each participant would be assigned a unique ID code that was not identifiable in any meaningful way so that no one would match up their responses to their names. After the questionnaires were completed, the experimenter described the schedule of the second and third phases.

SE Level. SE Level was assessed with Rosenberg's SE Scale (Rosenberg, 1965),

a well-validated measure of global self-evaluations (Blascovich & Tomaka, 1991). The

scale contains 10 items (e.g. "I feel like a person who has a number of good qualities") to

be rated on 5-point Likert scales, where 1 = "strongly disagree" and 5 = "strongly agree".

 Respondents were instructed to base their ratings on how they typically or generally feel

about themselves. The mean score of the scale was 40.39 with a standard deviation of

4.90 (see Table 1 for questionnaire means, standard deviations, and alpha coefficients).

Contingent SE. Participants completed the Contingent SE Scale (CSES; Paradise

& Kernis, 2000) to assess the tendency toward basing feelings of self-worth on specific

outcomes or events. The scale contains 15 items (e.g. "A big determinant of how much I

like myself is how well I perform up to the standards that I have set for myself") to be

rated on 5-point Likert scales, where 1 = "not at all like me" and 5 = "very much like

me". The mean score of the CSES was 43.76, with a standard deviation of 8.70. See

Appendix A for a copy of the CSES.

Phase 2 (Assessment of SE Stability)

A measure of SE Stability was derived from multiple assessments of global SE in

naturalistic contexts. SE Stability was assessed during the week following completion of

Phase 1. Participants completed a modified version of Rosenberg's (1965) SE scale at

10:00 a.m. and 10:00 p.m. for a period of 4 days, beginning on Monday night and ending

on Friday morning. Anchor points of "strongly agree" and "strongly disagree" were

Table 1

Correlation Matrix of Predictor and Criterion Variables

Measure	1	2	3	4	5	6	7	8	9	10	M	SD
1. SE Level	(84)										40.39	4.93
2. SE Stab	-33	--									10.35	7.95
3. Conting SE	-37	24	(87)								43.76	8.75
4. School/Work	-12	08	15	(78)							2.45	0.45
5. Relation	05	02	26	42	(90)						2.34	0.58
6. Well-being	03	00	14	43	79	(94)					2.10	0.69
7. Appearance	04	-06	32	30	39	47	(95)				2.12	0.66
8. Neg Events	-28	05	14	33	29	34	33	(93)			1.03	1.21
9. Alcohol	-13	-02	10	-17	03	-01	-06	-01	(88)		1.02	1.45
10. Socializing	-04	-03	11	-16	09	02	19	-01	52	--	0.24	0.42

Note: SE = self-esteem. Stab = stability. Conting = contingent. School/Work = preoccupation with school/work. Relation = Preoccupation with relationships. Well-being = preoccupation with well-being. Appearance = preoccupation with appearance. Neg Events = negative events composite. Alcohol = daily alcohol measure. Socializing = daily socializing event. M = mean. SD = standard deviation. All correlations > .22 significant at the .05 level or better. Decimal points are omitted. Coefficient alphas are in parentheses along the diagonal.

separated by 18 dots (instead of 10 dots as the form is normally administered)[1].

Participants were asked to circle the dot that best reflected how they felt at the particular

moment they completed the form (instead of responding with how they typically or

generally feel). They were also asked to record the date and time of completion.

Participants received enough forms for 2 days, and they were asked to return them and

receive new ones midway through the 4-day period. For each participant, SE Stability

was computed as the standard deviation of his or her total scores (the greater the standard

deviation, the more unstable the SE).

Following completion of the SE Stability assessment (Phase 2) and Phase 3

(described below), participants were interviewed individually by one of the

experimenters. The intent of this interview was to determine the extent to which the

participant followed the instructions provided by the experimenters while completing the

daily measures for Phases 2 and 3. Participants identified any forms that were filled out

incorrectly or at the wrong time. These forms were pulled from the participant's data

folder and not entered. Only those participants who completed at least six of eight

possible SE forms were included in the analyses. This resulted in a loss of 3 participants

(an additional 4 participants did not return to pick up the second packet on Wednesday

and did not continue with the study).

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1. The inclusion of 18 dots was a typographical mistake and I extensively addressed any potential
problems. The mean (10.35) and standard deviation (7.90) were comparable to those in previous studies
(e.g. 5.77 and 3.57 in Paradise & Kernis, 2000) after taking into account the increase in the number of
points on the scale. My assistants and I also examined each form for any sloppy or non-interpretable
responses, such as circling more than one dot at a time. During the debriefing sessions, we met
individually with each participant and asked him or her to clarify any ambiguous responses that had been
previously noted. After these individual meetings, we scrutinized every form and assigned each item a

Phase 3 (Alcohol Use Diary Completion)

Completion of the alcohol use diary began the week following the completion of Phase 2. Participants were asked to complete one packet of questions each night around bedtime for a period of 14 days. On the Monday following completion of Phase 2, participants came to the Psychology building to pick up enough forms for all 14 days. The 14 forms were divided into four separate packets, each printed on a different color with a different set of instructions on when they were to be completed. The instructions asked participants to return Packet 1 (M-W) on the first Thursday of Phase 3, return Packet 2 (TH-SUN) on the first Monday, return Packet 3 (M-W) on the second Thursday, and return Packet 4 (TH-SUN) on the second Monday. An extra packet was also included for participants who lost one of their other packets. The experimenters kept in contact with participants every few days to ensure that they were following directions and submitting the packets on time.

Each packet contained three or four daily forms. The daily form was divided into three sections: Activities, Subjective happenings, and Objective events (see Appendix B for a copy of the daily diary packet). Each section will be described below.

Activities. In the Activities section, participants were asked to respond to items referring to what they did in their spare time. The first three items involved time spent watching TV, hanging out with friends, and exercising, which were intended to prevent participants from believing that alcohol use was the sole behavior of interest to the investigators. The fourth item asked respondents to circle the number of alcoholic drinks consumed that day, ranging from 0 to 10 or more. When receiving their packets,

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value from 1 to 18, which was recorded to the right of the item.

participants were instructed to record 12oz of beer, 5oz of wine, and 1oz of hard liquor as one drink.

Subjective Preoccupations. The next section asked respondents to report important personal concerns that they dealt with during the day. The items were intended to reflect potential precursors to drinking and were developed specifically for the present study. The issues reflect daily preoccupations that might be reasons for choosing to drink. The items included "Performance at school/work," "The nature or quality of my relationships with others," "My state of mind/emotional well-being," "My appearance or other physical characteristics," and an "Other" option for respondents to write in an additional concern. Respondents rated the extent to which each subjective happening was relevant to their day on a 4-point Likert scale, where 1 = "I did not think about this at all" and 4 = "I was very preoccupied with this."

Objective Events. The final section contained a series of events that typically occur in the lives of college students. This set of events was more objective in nature than the previous list with items such as "I did poorly on a school/work task" and "I was excluded or left out by my group of friends." The list of events was intended to determine if specific kinds of events covary with alcohol consumption. Respondents were instructed to place a check next to the event if it happened on the day in question. Six negative events were included ("did poorly on a school/work task", "had a disagreement with friend…partner", "did something embarrassing", "fell behind in coursework", "was mistreated by someone", "friend…partner was critical of me", and "was excluded or left out") and were summed to create a daily measure of negative objective events. One positive item ("friend…romantic partner complimented me") and one neutral item ("went out socializing with friends") were also included.

Participants were instructed to complete each daily form around bedtime to accurately assess their activities for that day. They recorded their ID number, the date, and the time at the top of each page. They were asked to complete the form the following morning if they forgot to do it the previous night. If participants were going out before bedtime, they were asked to complete all of the items for that day except the first four activity items. The experimenters explained to participants that their responses to the activity items would probably change as a function of what they did while going out. Therefore, the best way to obtain an accurate assessment of their activities was for participants to complete these items when they arrived at home, either that night or the following morning. The intent of this directive was to increase the likelihood that participants would record their drinking activity and not simply skip the item before going out. These instructions were repeated on the cover sheet for each packet.

Three participants dropped out of the study during Phase 3. In the debriefing interview following their completion of Phase 3, participants were asked to report any instances where they completed two or more forms at one time. One participant reported that he completed two forms on Sunday night of the first weekend. Six participants reported that they each completed two forms on Saturday night during the second weekend, and three participants revealed that they each completed three forms on Sunday night. A parallel series of analyses omitting these ten participants was performed; none of the findings varied meaningfully[2].

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2. One exception involved a significant SE Level x Concern for School/Work interaction ($\gamma = .082$, $\underline{t} = 2.30$, $\underline{p} < .05$) that emerged in the analyses of the reduced sample. Predicted values indicated that both high and low SE were associated with more alcohol consumption on days with less preoccupation with school/work compared to days with more preoccupation with school/work, but the difference was especially apparent among low SEs.

SECTION 3

RESULTS

<u>Overview of Analyses</u>

     The present data constitute a multilevel data structure in which lower level units, days, are hierarchically nested within a higher level unit, persons. The day-level variables (or level-1 variables) consisted of measurements that reflect daily variability, including subjective preoccupation with school/work, relationships with others, state of mind, and appearance and objective reports of negative events. Variables measured at the person-level (or level-2) describe enduring traits (Nezlek, in press; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). For the current analyses, SE Level, SE Stability, and Contingent SE were treated as person-level variables. The first set of analyses to determine the relationship between the person-level and day-level variables was an examination of the pattern of correlation between these variables. For each participant, aggregate scores of drinking quantity, subjective happenings, and negative events were created by summing across all 14 days' worth of data. The second set of analyses involved hierarchical regression techniques to examine the extent to which the person-level variables independently predicted aggregate scores on the drinking measure. Finally, hierarchical linear modeling techniques (HLM; Bryk & Raudenbush, 1992) were employed for more fine-grained analysis of the multilevel design of the data set. Instead of relying on an aggregate day-level measure as the unit of analysis, HLM allowed for the simultaneous analysis of all 14 days' worth of daily reports and the person-level variables.

<u>Zero-order Correlations</u>

Table 1 presents the correlation matrix of the day-level and person-level variables as well as the alpha coefficients. SE Level was negatively related to both SE Stability and Contingent SE, whereas SE Stability and Contingent SE were positively correlated. Only three significant correlations emerged between the person-level and day-level variables: SE Level was negatively correlated with daily negative events, $\underline{r}(76) = -.28$, $\underline{p} < .05$ and Contingent SE was positively related to concern with relationships, $\underline{r}(76) = .26$, $\underline{p} < .05$, and concern with personal appearance, $\underline{r}(76) = .32$, $\underline{p} < .01$. The correlations among the subjective preoccupations and negative events variables were all significantly positive. Except for the correlation between concern with relationships and concern with state of mind ($\underline{r} = .79$), these correlations ranged from .30 to .47, thereby demonstrating reasonable divergence. Daily alcohol consumption was significantly correlated with only one other day-level variable, socializing ($\underline{r} = .52$).

<u>Regression Analyses</u>

Hierarchical regression analyses were performed to isolate the independent (and perhaps joint) effects of SE Level, SE Stability, and Contingent SE on the aggregate measure of alcohol consumption. In Step 1 of the regression analysis, SE Level and either SE Stability or Contingent SE were entered simultaneously as predictors. $\underline{F}$-tests of the partial regression coefficients were used to assess the significance of these predictors as main effects. In Step 2, the two-way product term (SE Level x SE Stability or SE Level x Contingent SE) was added as a block. Again, $\underline{F}$-tests of the partial regression coefficients were used to assess the significance of the product term reflecting a two-way interaction. No significant effects emerged for the person-level variables in these analyses. Additional regression analyses were performed where each daily

preoccupation measure and the negative events composite were entered into Steps 1 and 2 as covariates, but the effects for the person-level variables remained nonsignificant.

Hierarchical regression techniques were also employed to examine potential person-level differences in binge drinking episodes. A measure of binge drinking was derived by summing the number of days on which each participant had five or more drinks[3]. The mean number of binge episodes was 1.36 with a range from 0 to 10. No significant effects for SE Stability, Contingent SE, or SE Level emerged in the analyses of the binge measure.

<u>Hierarchical Linear Modeling Analyses</u>

Hierarchical Linear Modeling analyses were performed with the HLM program (Version 5) (Bryk, Raudenbush, & Congdon, 2000). The analyses consisted of two-level models where measures for days were nested within persons. HLM estimates day-level and person-level effects simultaneously, so that trait effects are statistically independent of one another and of day-level effects. HLM computed day-level coefficients that reflect the average within-person slope predicting daily alcohol consumption from daily events and happenings. Person-level coefficients were also computed that reflect average consumption from the trait-level individual difference measures.

Six separate models were specified. In the first model, daily alcohol consumption was modeled as a function of the four subjective concerns at level-1 and SE Stability, SE Level, and the SE Stability x SE Level interaction at level-2. The second model was identical to the first except that Contingent SE and the Contingent SE x SE Level

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3. This measure might not be a completely precise indicator of a binge episode, which is usually defined as five or more alcoholic drinks in one sitting, because the high number of drinks could be spread out over the entire day. Nevertheless, it was of theoretical interest to examine differences in the tendency to experience days with a high frequency of alcoholic drinks, which presumably reflects a reliance on relatively intense intoxication.

interaction were included as level-2 predictors instead of SE Stability and the SE Stability x SE Level interaction. The third model included the negative events composite at level-1 and SE Stability, SE Level, and SE Stability x SE Level at level-2. The fourth model included the negative events composite at level-1 and Contingent SE, SE Level, and Contingent SE x SE Level at level-2. In the fifth model, daily consumption was modeled as a function of SE Stability, SE Level, and the socializing event item[4]. The final model included the socializing event at level-1 and Contingent SE, SE Level, and Contingent SE x SE Level at level-2.

SE Stability and Subjective Preoccupations. For the first model that included subjective preoccupations at level-1, day-level alcohol consumption was estimated by the following equation:

$$ALC_{ij} = \beta_{0j} + \beta_1(SCHL)_{ij} + \beta_2(RELA)_{ij} + \beta_3(MIND)_{ij} + \beta_4(APPR)_{ij} + r_{ij}$$

where ALC_{ij} refers to alcohol consumption on each day (i) for each participant (j); β_{0j} refers to the random coefficient representing the intercept, or the mean consumption for person j (across the i days for which each person provided data); β_1-β_4 refer to the population slopes estimating daily consumption from subjective concern over school/work, relationships with others, state of mind, and appearance, respectively; $SCHL_{ij}$, $RELA_{ij}$, $MIND_{ij}$, and $APPR_{ij}$ represent the value on each day (i) for each participant (j) of concern for school/work, relationships with others, state of mind, and appearance, respectively; and r_{ij} represents the error associated with each measurement of

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4. Parallel HLM analyses of the positive daily event item (received a compliment) as a level-1 predictor were also performed. No significant level-1 effects, level-2 effects, or cross-level interactions emerged.

consumption. The variance of r_{ij} constitutes the day-level residual (or error) variance.

Unlike within-persons ANOVA and regression models, MRCM treats day-level effects as

random rather than fixed. This technique allowed for the possibility that the within-

person slopes may differ from one person to another. Consequently, separate maximum

likelihood estimates of β_1-β_4 were calculated for each participant and then pooled to

provide an overall estimate of each population slope β_1-β_4.

Person-level effects were estimated as follows:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(STAB)_j + \gamma_{02}(LEVEL)_j + \gamma_{03}(STAB)_j(LEVEL)_j + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}(STAB)_j + \gamma_{12}(LEVEL)_j + \gamma_{13}(STAB)_j(LEVEL)_j$$

$$\beta_{2j} = \gamma_{20} + \gamma_{21}(STAB)_j + \gamma_{12}(LEVEL)_j + \gamma_{23}(STAB)_j(LEVEL)_j$$

$$\beta_{3j} = \gamma_{30} + \gamma_{31}(STAB)_j + \gamma_{32}(LEVEL)_j + \gamma_{33}(STAB)_j(LEVEL)_j$$

$$\beta_{4j} = \gamma_{40} + \gamma_{41}(STAB)_j + \gamma_{42}(LEVEL)_j + \gamma_{43}(STAB)_j(LEVEL)_j$$

In the first equation, trait contributions of SE Stability, SE Level, and SE Stability x SE

Level on the value of β_{0j} are estimated. γ_{00} refers to the intercept representing the grand

mean of the person level means (β_{0j}s) from the day-level equation; γ_{01}-γ_{03} represent the

maximum likelihood estimates of the population slope estimating average consumption

across all days from SE Stability, SE Level, and SE Stability x SE Level, respectively,

after controlling for the effects of day-level variables; and u_{0j} represents person-level

error, or deviations from the grand mean. In the remaining equations, the cross-level

effects between level-1 and level-2 predictors are estimated. γ_{10}-γ_{40} represent the

maximum likelihood estimates of the population slopes estimating average consumption

across all days from preoccupation with school/work, relationships, state of mind, and appearance, respectively; γ_{11}-γ_{41} represent the slopes of the cross-level effects of SE stability and each of the four level-1 daily preoccupation variables (e.g. SE Stability x Concern for Appearance); γ_{12}-γ_{42} represent the slopes of the cross-level effects of SE Level and each of the four level-1 daily preoccupation variables (e.g. SE Level x Concern for Appearance); and γ_{13}-γ_{43} represent the slopes of the cross-level effects of SE Stability, SE Level, and each of the four daily preoccupation variables (e.g. SE Stability x SE Level x Concern for Appearance).

Substituting the equations for β_0-β_4 into the day-level equation yields the following combined model:

$$
\begin{aligned}
\mathrm{ALC}_{ij}= {} & \gamma_{00} + \gamma_{01}(\mathrm{STAB})_j + \gamma_{02}(\mathrm{LEVEL})_j + \gamma_{03}(\mathrm{STAB})_j(\mathrm{LEVEL})_j + \\
& \gamma_{10}(\mathrm{SCHL})_{ij} + \gamma_{11}(\mathrm{STAB})_j(\mathrm{SCHL})_{ij} + \gamma_{12}(\mathrm{LEVEL})_j(\mathrm{SCHL})_{ij} + \\
& \gamma_{13}(\mathrm{STAB})_j(\mathrm{LEVEL})_j(\mathrm{SCHL})_{ij} + \\
& \gamma_{20}(\mathrm{RELA})_{ij} + \gamma_{21}(\mathrm{STAB})_j(\mathrm{RELA})_{ij} + \gamma_{12}(\mathrm{LEVEL})_j(\mathrm{RELA})_{ij} + \\
& \gamma_{23}(\mathrm{STAB})_j(\mathrm{LEVEL})_j(\mathrm{RELA})_{ij} + \\
& \gamma_{30}(\mathrm{MIND})_{ij} + \gamma_{31}(\mathrm{STAB})_j(\mathrm{MIND})_{ij} + \gamma_{32}(\mathrm{LEVEL})_j(\mathrm{MIND})_{ij} + \\
& \gamma_{33}(\mathrm{STAB})_j(\mathrm{LEVEL})_j(\mathrm{MIND})_{ij} + \\
& \gamma_{40}(\mathrm{APPR})_{ij} + \gamma_{41}(\mathrm{STAB})_j(\mathrm{APPR})_{ij} + \gamma_{42}(\mathrm{LEVEL})_j(\mathrm{APPR})_{ij} + \\
& \gamma_{43}(\mathrm{STAB})_j(\mathrm{LEVEL})_j(\mathrm{APPR})_{ij} + \\
& r_{ij} + u_{0j}
\end{aligned}
$$

For convenience, day-level coefficients (γ_{10}-γ_{40}) can be considered as the average within-person slope predicting daily alcohol consumption from the subjective preoccupations pooled across all participants. It is appropriate to think of the person-level coefficients (γ_{01}-γ_{03}) as the between-persons slope predicting average consumption from SE Stability, SE Level, and their interaction. Cross-level effect coefficients (γ_{11}-γ_{41}; γ_{12}-γ_{42}; γ_{13}-γ_{43}) represent a specific trait influence as a moderator on the alcohol consumption-subjective preoccupation relationship. HLM provides significance tests of the coefficients to determine if the slopes (or intercept) are different from 0, which would indicate a relationship between consumption and the predictor(s).

Following the recommendations of Bryk and Raudenbush (1992) and Nezlek (in press), all day-level variables were centered on the individuals' means, and all person-level variables were converted to $\underline{z}$-scores based on the sample means and standard deviations (because the three trait-level predictors are measured on different metrics, which can lead to estimation errors in HLM). When the data are centered, the product-term slopes are interpreted as the increase in the preoccupation-consumption slope for persons scoring one unit above the mean on a particular trait. To aid in the interpretation of significant interactions, predicted values for the alcohol consumption dependent measure were generated. Values one standard deviation above and below the mean were used to represent high and low scores on SE Stability, SE Level, and subjective preoccupation (Aiken & West, 1991). These predicted values represent deviations from the grand mean of consumption as a function of the cross-level interactions because the data were centered (or standardized in the case of trait-level variables). The predicted

values generated were then added to the grand mean of 1.02 drinks to represent these deviations.

The results of the HLM analyses of the SE Stability/Subjective Preoccupations model appear in Table 2. At the day level, alcohol consumption was negatively associated with preoccupation with school/work, $\gamma = -0.096545$, $\underline{t} = -2.793$, $\underline{p} < .01$. A significant SE Stability x SE Level x preoccupation with appearance interaction emerged, $\gamma = -0.170199$, $\underline{t} = -2.108$, $\underline{p} < .05$. Predicted values (displayed in Table 3) indicated that as preoccupation with appearance increased, stable high SE was associated with increases in consumption, whereas unstable high SE was associated with decreases in consumption. Among low SEs, stable SE was associated with less consumption as preoccupation with appearance increased, whereas unstable SE was associated with greater consumption as preoccupation with appearance increased[5].

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5. A parallel series of analyses were performed where each subjective preoccupation variable was included separately at level-1 and SE Stability, SE Level, and SE Stability x SE Level were included at level-2 of four HLM analyses (i.e. preoccupation with school/work and the trait-level predictors; preoccupation with relationships and the trait-level predictors; preoccupation with state of mind and the trait-level predictors; and preoccupation with appearance and the trait-level predictors). In the analysis of the preoccupation with school/work model, a significant SE Level x Preoccupation with school/work interaction emerged, $\gamma = 0.064529$, $\underline{t} = 2.080$, $\underline{p} < .05$. Predicted values indicated that as preoccupation with school/work increased, consumption decreased among both low SEs and high SEs, but the decline was especially apparent among low SEs. The analysis of the preoccupation with appearance model revealed a marginally significant SE Stability x SE Level x Preoccupation with appearance interaction, $\gamma = -0.121599$, $\underline{t} = -1.868$, $\underline{p} < .07$. Predicted values indicated a pattern highly similar to that obtained in the model containing all the subjective preoccupations at level-1.

Table 2

Summary of HLM Analyses Modeling Alcohol Consumption as a Function of SE

Stability, SE Level, and Subjective Preoccupations

Predictor	Coefficient	t-ratio	p-value
Intercept (γ_{00})	0.156666	3.334	.001
SE Stability (γ_{01})	0.000556	0.011	.99
SE Level (γ_{02})	-0.075452	-1.630	.10
SE Stability x SE Level (γ_{03})	0.002747	0.051	.96
Preoccupation with School/Work			
School/Work (γ_{10})	-0.096545	-2.793	.006
School/Work x SE Stability (γ_{11})	0.027833	0.695	.49
School/Work x SE Level (γ_{12})	0.047006	1.461	.14
School/Work x SE Stability x SE Level (γ_{13})	-0.053146	-1.252	.21
Preoccupation with Nature or Quality of Relationships			
Relationship (γ_{20})	0.054564	1.123	.26
Relationship x SE Stability (γ_{21})	-0.021022	-0.565	.57
Relationship x SE Level (γ_{23})	0.039502	0.771	.44
Relationship x SE Stability x SE Level (γ_{24})	0.008723	0.171	.86
Preoccupation with State of Mind/Psychological Well-being			
State of Mind (γ_{30})	-0.079978	-1.670	.10
State of Mind x SE Stability (γ_{31})	0.019191	0.470	.64
State of Mind x SE Level (γ_{32})	-0.004039	-0.081	.93
State of Mind x SE Stability x SE Level (γ_{34})	0.062481	1.213	.23
Preoccupation with Personal Appearance			
Appearance (γ_{40})	0.028145	0.473	.64
Appearance x SE Stability (γ_{41})	-0.003821	-0.172	.86
Appearance x SE Level (γ_{42})	-0.057397	-0.934	.35
Appearance x SE Stability x SE Level (γ_{43})	-0.170199	-2.108	.04

Table 3

Predicted Values for Daily Alcohol Consumption as a function of SE Stability,

SE Level, and Subjective Preoccupation with Appearance

	Preoccupation with Appearance			
	Less Preoccupation		More Preoccupation	
	SE Stability		SE Stability	
	Stable SE	Unstable SE	Stable SE	Unstable SE
SE Level				
High SE	0.96	1.29	1.23	0.92
Low SE	1.32	1.04	1.19	1.47

Contingent SE and Subjective Preoccupations. The second model included
Contingent SE as a level-2 predictor, leading to the following slope estimations:

$ALC_{ij} = \gamma_{00} + \gamma_{01}(CON)_j + \gamma_{02}(LEVEL)_j + \gamma_{03}(CON)_j(LEVEL)_j +$

$\quad \gamma_{10}(SCHL)_{ij} + \gamma_{11}(CON)_j(SCHL)_{ij} + \gamma_{12}(LEVEL)_j(SCHL)_{ij} +$

$\quad \gamma_{13}(CON)_j(LEVEL)_j(SCHL)_{ij} +$

$\quad \gamma_{20}(RELA)_{ij} + \gamma_{21}(CON)_j(RELA)_{ij} + \gamma_{12}(LEVEL)_j(RELA)_{ij} +$

$\quad \gamma_{23}(CON)_j(LEVEL)_j(RELA)_{ij} +$

$\quad \gamma_{30}(MIND)_{ij} + \gamma_{31}(CON)_j(MIND)_{ij} + \gamma_{32}(LEVEL)_j(MIND)_{ij} +$

$\quad \gamma_{33}(CON)_j(LEVEL)_j(MIND)_{ij} +$

$\quad \gamma_{40}(APPR)_{ij} + \gamma_{41}(CON)_j(APPR)_{ij} + \gamma_{42}(LEVEL)_j(APPR)_{ij} +$

$\quad \gamma_{43}(CON)_j(LEVEL)_j(APPR)_{ij} +$

$\quad r_{ij} + u_{0j}$

Again, day-level variables were centered around the individuals' means and person-level
variables were converted to z-scores. The results of the HLM analyses involving
Contingent SE and subjective preoccupations are presented in Table 4. Only the
coefficient for Preoccupation with school/work was significantly different from 0, $\gamma = -0.085748$, $t = -2.374$, $p < .05$, indicating that consumption was inversely related to
concern over school/work[6].

---

6. A parallel series of analyses were performed where each subjective preoccupation was included
separately at level-1 and Contingent SE, SE Level, and Contingent SE x SE Level were included at level-2.
No significant effects emerged in these analyses.

Table 4

Summary of HLM Analyses Modeling Alcohol Consumption as a Function of

Contingent SE, SE Level, and Subjective Preoccupations

Predictor	Coefficient	t-ratio	p-value
Intercept (γ_{00})	0.139571	2.952	.004
Contingent SE (γ_{01})	0.032754	0.681	.50
SE Level (γ_{02})	-0.049782	-1.026	.31
Contingent SE x SE Level (γ_{03})	-0.058242	-1.356	.18
Preoccupation with School/Work			
School/Work (γ_{10})	-0.085748	-2.374	.02
School/Work x Contingent SE (γ_{11})	0.013264	0.337	.74
School/Work x SE Level (γ_{12})	0.048384	1.360	.17
School/Work x Contingent SE x SE Level (γ_{13})	0.006712	0.220	.83
Preoccupation with Nature or Quality of Relationships			
Relationship (γ_{20})	0.038484	0.811	.42
Relationship x Contingent SE (γ_{21})	0.019034	0.390	.70
Relationship x SE Level (γ_{23})	0.041742	0.819	.41
Relationship x Contingent SE x SE Level (γ_{24})	-0.010954	-0.249	.80
Preoccupation with State of Mind/Psychological Well-being			
State of Mind (γ_{30})	-0.066090	-1.405	.16
State of Mind x Contingent SE (γ_{31})	-0.020192	-0.408	.68
State of Mind x SE Level (γ_{32})	-0.031461	-0.629	.53
State of Mind x Contingent SE x SE Level (γ_{34})	0.063364	1.278	.20
Preoccupation with Personal Appearance			
Appearance (γ_{40})	0.060186	1.302	.30
Appearance x Contingent SE (γ_{41})	-0.021115	-0.333	.74
Appearance x SE Level (γ_{42})	-0.063599	-0.963	.34
Appearance x Contingent SE x SE Level (γ_{43})	-0.027993	-0.448	.66

SE Stability and Negative Events. The third model in the HLM analyses involved alcohol consumption as a function of SE Stability, SE Level, and daily negative events. Day-level alcohol consumption was estimated by the following equation:

$$ALC_{ij} = \beta_{0j} + \beta_1(EVENTS)_{ij} + r_{ij}$$

where ALC_{ij} refers to alcohol consumption on each day (i) for each participant (j); β_{0j} refers to the random coefficient representing the intercept, or the mean consumption for person j (across the i days for which each person provided data); β_1 refers to the population slope estimating daily consumption from objective negative events; $EVENTS_{ij}$ represents the frequency of negative events on each day (i) for each participant (j) (centered around participant j's mean); and r_{ij} represents the error associated with each measurement of consumption. Person-level effects were estimated as follows:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(STAB)_j + \gamma_{02}(LEVEL)_j + \gamma_{03}(STAB)_j(LEVEL)_j + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}(STAB)_j + \gamma_{12}(LEVEL)_j + \gamma_{13}(STAB)_j(LEVEL)_j$$

which leads to the following combined model:

$$ALC_{ij} = \gamma_{00} + \gamma_{01}(STAB)_j + \gamma_{02}(LEVEL)_j + \gamma_{03}(STAB)_j(LEVEL)_j +$$
$$\gamma_{10}(EVENTS)_{ij} + \gamma_{11}(STAB)_j(EVENTS)_{ij} + \gamma_{12}(LEVEL)_j(EVENTS)_{ij} +$$
$$\gamma_{13}(STAB)_j(LEVEL)_j(EVENTS)_{ij} + r_{ij} + u_{0j}$$

Table 5 presents the results of the HLM analyses of the SE Stability/Negative Events

model. A significant SE Stability x Negative Events cross-level interaction emerged, $\gamma =$

.092602, $\underline{t} = 2.639$, $\underline{p} < .01$. Predicted values indicated that on days when fewer negative

events occurred, stable SE, compared to unstable SE, was associated with more alcohol

consumption (see Table 6 for predicted values). On days when more negative events

occurred, stable SE was related to less consumption than was unstable SE.

Contingent SE and Negative Events. The fourth model included Contingent SE

and SE Level as trait predictors and Negative Events as a day-level predictor of daily

consumption, leading to the following slope estimations:

$$ALC_{ij} = \gamma_{00} + \gamma_{01}(CON)_j + \gamma_{02}(LEVEL)_j + \gamma_{03}(CON)_j(LEVEL)_j +$$

$$\gamma_{10}(EVENTS)_{ij} + \gamma_{11}(CON)_j(EVENTS)_{ij} + \gamma_{12}(LEVEL)_j(EVENTS)_{ij} +$$

$$\gamma_{13}(CON)_j(LEVEL)_j(EVENTS)_{ij} + r_{ij} + u_{0j}$$

Table 7 presents the results of the HLM analyses of the Contingent SE/Negative Events

model. The slope for negative events was significant, $\gamma = .067328$, $\underline{t} = 2.096$, $\underline{p} < .05$,

indicating that increases in negative events were associated with increases in

consumption. A significant Contingent SE x SE Level x Negative Events cross-level

interaction emerged, $\gamma = .051453$, $\underline{t} = 2.081$, $\underline{p} < .05$. Predicted values (displayed in Table

8) indicated that on days with fewer negative events, relatively noncontingent high SEs

consumed more alcohol than did relatively contingent high SEs. In contrast, on days with

more negative events, relatively contingent high SEs had more alcoholic drinks than did

relatively noncontingent high SEs. Among low SEs, both relatively noncontingent SE

Table 5

Summary of HLM Analyses Modeling Alcohol Consumption as a Function of SE

Stability, SE Level, and Negative Events

Predictor	Coefficient	t-ratio	p-value
Intercept (γ_{00})	0.151890	3.451	.001
SE Stability (γ_{01})	0.029650	0.661	.51
SE Level (γ_{02})	-0.053937	-1.242	.21
SE Stability x SE Level (γ_{03})	-0.000298	-0.020	.98
Negative Events			
Negative Events (γ_{10})	0.048291	1.597	.11
Negative Events x SE Stability (γ_{11})	0.092602	2.639	.009
Negative Events x SE Level (γ_{12})	0.008538	0.305	.76
Negative Events x SE Stability x SE Level (γ_{13})	-0.010640	-0.277	.78

Table 6

Predicted Values for Daily Alcohol Consumption as a Function of SE Stability

and Negative Events

	Negative Events	
	Fewer Negative Events	More Negative Events
SE Stability		
Stable SE	1.20	1.09
Unstable SE	1.03	1.37

Table 7

Summary of HLM Analyses Modeling Alcohol Consumption as a Function of

Contingent SE, SE Level, and Negative Events

Predictor	Coefficient	t-ratio	p-value
Intercept (γ_{00})	0.138154	3.222	.002
Contingent SE (γ_{01})	0.027768	0.635	.53
SE Level (γ_{02})	-0.060437	-1.384	.17
Contingent SE x SE Level (γ_{03})	-0.033716	-0.905	.37
Negative Events			
Negative Events (γ_{10})	0.067328	2.096	.04
Negative Events x Contingent SE (γ_{11})	0.037820	1.172	.24
Negative Events x SE Level (γ_{12})	0.003837	0.116	.91
Negative Events x Contingent SE x SE Level (γ_{13})	0.051453	2.081	.04

Table 8

Predicted Values for Daily Alcohol Consumption as a function of Contingent SE,

SE Level, and Negative Events

	Negative Events			
	Fewer Negative Events		More Negative Events	
	Contingent SE		Contingent SE	
	Noncontingent	Contingent	Noncontingent	Contingent
SE Level				
High	1.13	0.89	1.08	1.29
Low	1.06	1.22	1.25	1.35

and relatively contingent SE was associated with greater consumption as negative events increased.

SE Stability and Socializing. The fifth model was identical to the SE Stability/Negative Events model except that the socializing event was included as a level-1 predictor and negative events were omitted from the model[7]. Table 9 contains the results of the HLM analyses of the fifth model. A significant SE Level main effect emerged, $\gamma = -0.144189$, $\underline{t} = -3.283$, $\underline{p} < .001$, indicating that low SE was related to greater consumption than high SE. A significant socializing event main effect also emerged, $\gamma = 1.453480$, $\underline{t} = 16.012$, $\underline{p} < .0001$, indicating that as socializing increased, drinking tended to increase. A significant SE Stability x socializing event interaction emerged, $\gamma = -0.414277$, $\underline{t} = -3.519$, $\underline{p} < .001$. Predicted values (displayed in the top panel of Table 10) indicated that, among both stable SEs and unstable SEs, consumption was greater on days with more socializing than on days with less socializing, but the difference was especially apparent among stable SEs. In addition, a significant SE Level x socializing event interaction emerged, $\gamma = -0.571476$, $\underline{t} = -5.945$, $\underline{p} < .0001$. Predicted values (displayed in the bottom panel of Table 10) indicated that, among both high SEs and low SEs, consumption was greater on days with more socializing than on days with less socializing, but the difference was especially apparent among low SEs.

Contingent SE and Socializing. The final model was identical to the Contingent SE/Negative Events model except that the socializing event was included as a level-1 predictor and negative events were omitted from the model. Table 11 contains the results of the HLM analyses of the sixth model. A significant SE Level main effect emerged, $\gamma =$

_____

7. The negative events composite and the socializing event were not included in the same model because the two variables were not significantly correlated ($r = -.01$).

Table 9

Summary of HLM Analyses Modeling Alcohol Consumption as a Function of SE

Stability, SE Level, and Socializing

Predictor	Coefficient	t-ratio	p-value
Intercept (γ_{00})	0.277694	6.123	.001
SE Stability (γ_{01})	0.044312	0.306	.76
SE Level (γ_{02})	-0.144189	-3.283	.001
SE Stability x SE Level (γ_{03})	0.016616	0.355	.73
Socializing			
Socializing (γ_{10})	1.453480	16.012	.0001
Socializing x SE Stability (γ_{11})	-0.414277	-3.519	.001
Socializing x SE Level (γ_{12})	-0.571476	-5.945	.001
Socializing x SE Stability x SE Level (γ_{13})	0.138141	1.254	.21

Table 10

Predicted Values for Daily Alcohol Consumption as a Function of SE Stability and

Socializing (top panel) and SE Level and Socializing (bottom panel)

	Socializing	
	Less Socializing	More Socializing
SE Stability		
Stable SE	0.48	2.09
Unstable SE	0.87	1.76

	Socializing	
	Less Socializing	More Socializing
SE Level		
High SE	0.78	1.53
Low SE	0.57	2.32

Table 11

Summary of HLM Analyses Modeling Alcohol Consumption as a Function of

Contingent SE, SE Level, and Socializing

Predictor	Coefficient	t-ratio	p-value
Intercept (γ_{00})	0.253509	5.715	.001
Contingent SE (γ_{01})	0.036189	0.816	.42
SE Level (γ_{02})	-0.135626	-3.059	.01
Contingent SE x SE Level (γ_{03})	-0.069839	-1.912	.09
Socializing			
Socializing (γ_{10})	1.350044	15.285	.0001
Socializing x Contingent SE (γ_{11})	-0.143879	-1.391	.16
Socializing x SE Level (γ_{12})	-0.296140	-2.878	.005
Socializing x Contingent SE x SE Level (γ_{13})	-0.373888	-3.961	.001

-0.135626, $\underline{t}$ = -3.059, $\underline{p}$ < .005, indicating that low SE was related to greater consumption

than high SE. Days with more socializing were related to greater consumption than days

with less socializing, γ = 1.350044, $\underline{t}$ = 15.285, $\underline{p}$ < .0001. A significant SE Level x

socializing event interaction emerged, γ = -0.296140, $\underline{t}$ = -2.878, $\underline{p}$ < .005. Predicted

values (displayed in Table 12) indicated a pattern highly similar to that obtained in the SE

Stability/socializing event model: among both high SEs and low SEs, consumption was

greater on days with more socializing than on days with less socializing, but the

difference was especially apparent among low SEs. This interaction was subsumed by a

significant Contingent SE x SE Level x socializing event interaction, γ = -0.373888, $\underline{t}$ = -

3.961, $\underline{p}$ < .001. Predicted values (displayed in Table 13) indicated that on days with less

socializing, relatively noncontingent high SEs had lower rates of consumption than

relatively contingent high SEs. On days with more socializing, relatively noncontingent

high SEs consumed more alcohol than relatively contingent high SEs. Among low SEs,

there were no differences as a function of contingent SE on days with less socializing.

However, as socializing increased, relatively contingent low SE was associated with

more drinking than relatively noncontingent low SE.

  <u>HLM Analyses with Female Participants</u>. A parallel series of analyses were

performed isolating the female participants in the sample (N = 54) to determine if the

fragile SE-alcohol consumption relationship varied as a function of sex. The mean

number of drinks consumed per day was 0.71 for women and 1.79 for men (see Table 14

for a complete list of means and standard deviations of each variable among men and

among women). Despite a higher frequency of drinks reported by men, the overall

pattern of findings for the female sample was generally consistent with the pattern of

Table 12

<u>Predicted Values for Daily Alcohol Consumption as a Function of SE Level and</u>

<u>Socializing</u>

	Socializing		
	Less Socializing	More Socializing	
SE Level			
High SE	0.68	1.59	
Low SE	0.70	2.12	

Table 13

Predicted values for Daily Alcohol Consumption as a Function of

Contingent SE, SE Level, and Socializing

	Socializing			
	Less Socializing		More Socializing	
	Contingent SE		Contingent SE	
	Noncontingent	Contingent	Noncontingent	Contingent
SE Level				
High	0.49	0.88	1.85	1.33
Low	0.70	0.71	1.91	2.33

Table 14

Means and Standard Deviations of Predictor and Criterion Variables among Women and

Men

| | Women | | Men | |
Measure	Mean	Std Dev	Mean	Std Dev
1. SE Level	40.26	4.78	40.73	5.37
2. SE Stability	11.30	8.85	8.04	4.49
3. Contingent SE	44.98	8.97	40.77	7.58
4. School/Work	2.47	1.00	2.38	0.98
5. Relationships	2.38	0.87	2.27	0.86
6. State of Mind	2.13	0.91	2.04	1.01
7. Appearance	2.17	0.86	2.01	0.84
8. Negative Events	0.98	1.10	1.17	1.45
9. Socializing	0.22	0.41	0.28	0.45
10. Alcohol	0.71	1.92	1.79	3.28

Note: Std Dev = Standard Deviation. School/Work = Preoccupation with School/Work.

Relationships = Preoccupation with Relationships. State of Mind = Preoccupation with

State of Mind. Appearance = Preoccupation with Appearance. Alcohol = Daily Alcohol

Consumption.

to the overall mean for women (0.71 drinks) instead of the grand mean for the entire sample (1.02) to represent deviations as a function of cross-level interactions.

In the SE Stability/Subjective Preoccupation model, a significant Preoccupation with School/Work main effect emerged, $\gamma = -0.069469$, $\underline{t} = -2.375$, $\underline{p} < .05$, indicating that as preoccupation with school increased, drinking decreased. A significant Preoccupation with Appearance main effect also emerged, $\gamma = 0.108487$, $\underline{t} = 2.250$, $\underline{p} < .05$, indicating that drinking increased as preoccupation with personal appearance increased. A significant SE Level x Preoccupation with Appearance interaction emerged, $\gamma = -0.126856$, $\underline{t} = -2.442$, $\underline{p} < .05$. Predicted values (displayed in Table 15) indicated that among high SEs, as preoccupation with appearance increased, consumption decreased to a moderate degree. Among low SEs, as preoccupation with appearance increased, drinking increased.

The analysis of the Contingent SE/Subjective Preoccupation model revealed a significant Contingent SE x Preoccupation with Appearance interaction, $\gamma = 0.123659$, $\underline{t} = 2.470$, $\underline{p} < .05$. Predicted values (displayed in Table 16) revealed that as preoccupation with appearance increased, relatively contingent SE was associated with an increase in consumption, but relatively noncontingent SE was associated with a decrease in consumption. This interaction was subsumed by a significant Contingent SE x SE Level x Preoccupation with Appearance interaction, $\gamma = -0.146362$, $\underline{t} = -2.757$, $\underline{p} < .01$. Predicted values (displayed in Table 17) indicated that among high SEs, relatively noncontingent SE was related to an increase in drinking as concern for appearance increased. In contrast, there were no differences among relatively contingent high SEs as a function of preoccupation with appearance. Among low SEs, relatively noncontingent

Table 15

Predicted Values for Daily Alcohol Consumption among Women as a Function of SE

Level and Preoccupation with Appearance

	Preoccupation with Appearance	
	Less Preoccupation	More Preoccupation
SE Level		
High SE	0.78	0.73
Low SE	0.66	1.07

Table 16

Predicted Values for Daily Alcohol Consumption among Women as a Function of

Contingent SE and Preoccupation with Appearance

	Preoccupation with Appearance	
	Less Preoccupation	More Preoccupation
Contingent SE		
Noncontingent SE	0.86	0.79
Contingent SE	0.65	1.04

Table 17

Predicted Values for Daily Alcohol Consumption among Women as a Function of

Contingent SE, SE Level, and Preoccupation with Appearance

	Preoccupation with Appearance			
	Less Preoccupation		More Preoccupation	
	Contingent SE		Contingent SE	
	Noncontingent	Contingent	Noncontingent	Contingent
SE Level				
High	0.70	0.84	0.78	0.86
Low	1.02	0.47	0.81	1.22

SE was associated with more drinking than relatively contingent SE on days with less preoccupation with appearance. As preoccupation with appearance increased, relatively contingent low SE was associated with more consumption than relatively noncontingent low SE.

In the analysis of the SE Stability/Negative Events model, a significant SE Stability main effect emerged, $\gamma = 0.077017$, $\underline{t} = 2.963$, $\underline{p} < .005$, indicating that unstable SE was related to more daily consumption than stable SE. A significant Negative events main effect also emerged, $\gamma = 0.068382$, $\underline{t} = 3.095$, $\underline{p} < .005$, indicating that as negative events increased, drinking increased. These main effects were subsumed a significant SE Stability x Negative Events interaction, $\gamma = 0.131996$, $\underline{t} = 5.146$, $\underline{p} < .0001$. Predicted values (displayed in Table 18) revealed a pattern similar to that obtained from the total sample: among stable SEs, drinking decreased as negative events increased, whereas among unstable SEs, drinking increased as negative events increased.

The analysis of the Contingent SE/Negative Events model also revealed a significant Negative Events main effect, $\gamma = 0.059808$, $\underline{t} = 2.245$, $\underline{p} < .05$, and a significant Contingent SE x Negative Events interaction, $\gamma = 0.081000$, $\underline{t} = 3.305$, $\underline{p} < .005$ (predicted values appear in Table 19), both of which were subsumed by a significant Contingent SE x SE Level x Negative Events interaction, $\gamma = 0.044929$, $\underline{t} = 2.047$, $\underline{p} < .05$. Again, predicted values (displayed in Table 20) indicated a pattern among high SEs similar to that obtained from the total sample: relatively contingent high SE was associated with an increase in drinking as negative events increased, whereas consumption by relatively noncontingent high SEs decreased slightly as negative events increased. Among low SEs, the consumption of relatively noncontingent SEs did not

Table 18

Predicted Values for Daily Alcohol Consumption among Women as a Function of SE

Stability and Negative Events

	Negative Events	
	Fewer Negative Events	More Negative Events
SE Stability		
Stable SE	0.80	0.66
Unstable SE	0.64	1.16

Table 19

Predicted Values for Daily Alcohol Consumption among Women as a Function of

Contingent SE and Negative Events

	Negative Events	
	Fewer Negative Events	More Negative Events
Contingent SE		
Noncontingent SE	0.78	0.76
Contingent SE	0.66	1.00

Table 20

Predicted values for Daily Alcohol Consumption among Women as a Function of

Contingent SE, SE Level, and Negative Events

	Negative Events			
	Fewer Negative Events		More Negative Events	
	Contingent SE		Contingent SE	
	Noncontingent	Contingent	Noncontingent	Contingent
SE Level				
High	0.75	0.58	0.71	1.10
Low	0.82	0.74	0.80	0.89

differ as a function of negative events, whereas relatively contingent SE was associated with an increase in consumption as negative events increased.

In the analysis of the SE Stability/socializing event model, a significant SE Level main effect emerged, $\gamma = -0.200776$, $\underline{t} = -4.676$, $\underline{p} < .001$, indicating that low SE was related to greater consumption than high SE. A significant socializing event main effect also emerged, $\gamma = 1.387853$, $\underline{t} = 20.100$, $\underline{p} < .0001$, indicating that as socializing increased, drinking tended to increase. These main effects were subsumed by a significant SE Level x socializing event interaction, $\gamma = -0.879197$, $\underline{t} = -13.232$, $\underline{p} < .0001$. Predicted values (displayed in the top panel of Table 21) indicated that, among both high SEs and low SEs, consumption was greater as socializing increased, but the difference was especially apparent among low SEs. In addition, a significant SE Stability x socializing event interaction emerged, $\gamma = -0.637755$, $\underline{t} = -7.785$, $\underline{p} < .001$. Predicted values (displayed in the bottom panel of Table 21) indicated that, among both stable SEs and unstable SEs, consumption was greater on days with more socializing than on days with less socializing, but the difference was especially apparent among stable SEs.

The analysis of the Contingent SE/socializing event model revealed that days with more socializing were related to significantly greater consumption than days with less socializing, $\gamma = 1.215643$, $\underline{t} = 15.495$, $\underline{p} < .0001$. A significant SE Level x socializing event interaction emerged, $\gamma = -0.462857$, $\underline{t} = -5.557$, $\underline{p} < .001$. Predicted values (displayed in Table 22) indicated a pattern highly similar to that obtained in the SE Stability/socializing event model: among both high SEs and low SEs, consumption was greater on days with more socializing than on days with less socializing, but the difference was especially apparent among low SEs. This interaction was subsumed by a

Table 21

<u>Predicted Values for Daily Alcohol Consumption among Women as a Function of SE</u>

<u>Level and Socializing (top panel) and SE Stability and Socializing (bottom panel)</u>

	Socializing		
	Less Socializing	More Socializing	
SE Level			
High SE	0.59	1.04	
Low SE	0.28	2.14	

	Socializing		
	Less Socializing	More Socializing	
SE Stability			
Stable SE	0.26	1.91	
Unstable SE	0.66	1.15	

Table 22

Predicted Values for Daily Alcohol Consumption among Women as a Function of SE

Level and Socializing

	Socializing		
	Less Socializing	More Socializing	
SE Level			
High SE	0.53	1.17	
Low SE	0.43	1.81	

significant Contingent SE x SE Level x socializing event interaction, $\gamma = -0.382322$, $\underline{t} = -5.839$, $\underline{p} < .001$. Predicted values (displayed in Table 23) indicated that on days with less socializing, relatively noncontingent high SEs drank less than relatively contingent high SEs. On days with more socializing, relatively noncontingent high SE was associated with more consumption than relatively contingent high SE. Among low SEs, there were no differences in consumption as a function of contingent SE on days with less socializing. As socializing increased, relatively contingent low SE was associated with more consumption than relatively noncontingent low SE.

HLM Analyses of Participants Under 21. A parallel series of analyses were performed isolating participants under the age of 21 years old ($N = 61$) to determine if the fragile SE-alcohol consumption relationship varied as a function of age. These participants could not legally purchase or consume alcoholic drinks. The mean number of drinks consumed per day by underage participants was 0.96, whereas those over 21 had an average of 1.17 (see Table 24 for a complete list of means and standard deviations for each variable among underage participants and among participants over 21). Despite a higher frequency of drinks reported by legal drinkers, the overall pattern of findings for the underage sample was generally consistent with the pattern of findings for the total sample, with the exception of the Contingent SE x SE Level x Negative Events interaction (to be discussed below). For this set of analyses, predicted values were added to the overall mean for underage participants (0.96 drinks) instead of the grand mean for the entire sample (1.02) to represent deviations as a function of cross-level interactions.

In the SE Stability/Subjective Preoccupation model, a significant Preoccupation with Appearance main effect emerged, $\gamma = 0.1330074$, $\underline{t} = 2.271$, $\underline{p} < .05$, indicating that drinking increased as preoccupation with personal appearance increased. A significant

Table 23

Predicted Values for Daily Alcohol Consumption among Women as a Function of
Contingent SE, SE Level, and Socializing

	Socializing			
	Less Socializing		More Socializing	
	Contingent SE		Contingent SE	
	Noncontingent	Contingent	Noncontingent	Contingent
SE Level				
High	0.39	0.72	1.42	0.83
Low	0.43	0.42	1.67	2.00

Table 24

Means and Standard Deviations of Predictor and Criterion Variables among Underage

Participants and Participants over 21

	Under 21		Over 21	
Measure	Mean	Std Dev	Mean	Std Dev
1. SE Level	40.41	4.98	40.43	5.03
2. SE Stability	10.26	8.30	10.63	6.83
3. Contingent SE	43.66	8.97	43.86	8.26
4. School/Work	2.45	1.01	2.44	0.96
5. Relationships	2.38	0.87	2.16	0.82
6. State of Mind	2.13	0.94	1.95	0.94
7. Appearance	2.15	0.86	2.01	0.89
8. Negative Events	1.10	1.25	0.73	0.98
9. Socializing	0.25	0.43	0.19	0.40
10. Alcohol	0.96	2.40	1.17	2.48

Note: Std Dev = Standard Deviation. School/Work = Preoccupation with School/Work.

Relationships = Preoccupation with Relationships. State of Mind = Preoccupation with

State of Mind. Appearance = Preoccupation with Appearance. Alcohol = Daily Alcohol

Consumption.

SE Level x Preoccupation with Appearance interaction emerged, $\gamma = -0.154700$, $\underline{t} = -2.607$, $\underline{p} < .01$. Predicted values (displayed in Table 25) indicated that among low SEs, as preoccupation with appearance increased, drinking increased. In contrast, the consumption of high SEs decreased slightly as preoccupation with appearance increased.

The analysis of the Contingent SE/Subjective Preoccupation model also revealed a significant SE Level x Preoccupation with Appearance interaction, $\gamma = -0.136500$, $\underline{t} = -2.271$, $\underline{p} < .05$. Predicted values (displayed in Table 26) revealed a similar pattern of relationships to those described in the predicted values for the SE Stability model.

In the analysis of the SE Stability/Negative Events model, a marginally significant SE Stability x Negative Events interaction emerged, $\gamma = 0.064173$, $\underline{t} = 1.838$, $\underline{p} < .07$. Predicted values (displayed in Table 27) revealed a pattern similar to that obtained from the total sample: among stable SEs, drinking decreased as negative events increased, whereas among unstable SEs, drinking increased as negative events increased. A significant SE Stability x SE Level x Negative Events interaction emerged, $\gamma = -0.071476$, $\underline{t} = -2.205$, $\underline{p} < .05$. Predicted values (displayed in Table 28) indicated that among stable high SEs, drinking tended to increase as negative events increased, whereas the consumption of unstable high SEs did not differ as negative events increased. Among stable low SEs, drinking tended to decrease as negative events increased, whereas among unstable low SEs, drinking tended to increase as negative events increased.

The analysis of the Contingent SE/Negative Events model revealed a significant Negative Events main effect, $\gamma = 0.062523$, $\underline{t} = 2.040$, $\underline{p} < .05$, and a significant Contingent SE x Negative Events interaction, $\gamma = -0.060073$, $\underline{t} = -2.098$, $\underline{p} < .05$ (predicted values displayed in Table 29), both of which were subsumed by a significant

Table 25

Predicted Values for Daily Alcohol Consumption among Underage Participants as a

Function of SE Level and Preoccupation with Appearance

	Preoccupation with Appearance	
	Less Preoccupation	More Preoccupation
SE Level		
High SE	1.04	0.99
Low SE	0.94	1.43

Table 26

<u>Predicted Values for Daily Alcohol Consumption among Underage Participants as</u>

<u>a Function of SE Level and Preoccupation with Appearance</u>

	Preoccupation with Appearance		
	Less Preoccupation	More Preoccupation	
SE Level			
High SE	1.07	1.00	
Low SE	0.96	1.37	

Table 27

Predicted Values for Daily Alcohol Consumption among Underage Participants as a

Function of SE Stability and Negative Events

	Negative Events	
	Fewer Negative Events	More Negative Events
SE Stability		
Stable SE	1.11	0.97
Unstable SE	0.99	1.19

Table 28

Predicted Values for Daily Alcohol Consumption among Underage Participants as a

Function of SE Stability, SE Level, and Negative Events

	Negative Events			
	Fewer Negative Events		More Negative Events	
	SE Stability		SE Stability	
	Stable SE	Unstable SE	Stable SE	Unstable SE
SE Level				
High	1.02	1.00	1.09	1.02
Low	1.20	0.98	0.85	1.35

Table 29

Predicted Values for Daily Alcohol Consumption among Underage Participants as a

Function of Contingent SE and Negative Events

	Negative Events	
	Fewer Negative Events	More Negative Events
Contingent SE		
Noncontingent SE	0.90	1.21
Contingent SE	1.06	1.06

Contingent SE x SE Level x Negative Events interaction, $\gamma = 0.070356$, $\underline{t} = 3.391$, $\underline{p} <$ .001. Predicted values (displayed in Table 30) indicated a pattern among high SEs contradictory to that obtained from the total sample: on days with both fewer and more negative events, relatively contingent high SE was associated with less consumption than relatively noncontingent high SE. Among low SEs, relatively noncontingent SE was associated with an increase in consumption as negative evens increased, whereas relatively contingent SE was associated with a decrease in consumption as negative events increased.

The analysis of the SE Stability/socializing event model revealed a significant SE Level main effect, $\gamma = -0.195179$, $\underline{t} = -3.925$, $\underline{p} < .001$, indicating that low SE was related to greater consumption than high SE. A significant socializing event main effect also emerged, $\gamma = 1.278024$, $\underline{t} = 15.990$, $\underline{p} < .0001$, indicating that as socializing increased, drinking tended to increase. These main effects were subsumed by a significant SE Level x socializing event interaction emerged, $\gamma = -0.981427$, $\underline{t} = -12.819$, $\underline{p} < .001$. Predicted values (displayed in the top panel of Table 31) indicated that, among both high SEs and low SEs, consumption was greater on days with more socializing than on days with less socializing, but the difference was especially apparent among low SEs. In addition, a significant SE Stability x socializing event interaction emerged, $\gamma = -0.763780$, $\underline{t} = -7.251$, $\underline{p} < .001$. Predicted values (displayed in the bottom panel of Table 31) indicated that, among both stable SEs and unstable SEs, consumption was greater on days with more socializing than on days with less socializing, but the difference was especially apparent among stable SEs.

Table 30

Predicted Values for Daily Alcohol Consumption among Underage Participants as a

Function of Contingent SE, SE Level and Negative Events

	Negative Events			
	Fewer Negative Events		More Negative Events	
	Contingent SE		Contingent SE	
	Noncontingent	Contingent	Noncontingent	Contingent
SE Level				
High	1.04	0.87	1.09	0.99
Low	0.76	1.25	1.34	1.14

Table 31

<u>Predicted Values for Daily Alcohol Consumption among Underage Participants as a</u>

<u>Function of SE Level and Socializing (top panel) and SE Stability and</u>

<u>Socializing (bottom panel)</u>

	Socializing	
	Less Socializing	More Socializing
SE Level		
High SE	0.91	1.15
Low SE	0.45	2.41

	Socializing	
	Less Socializing	More Socializing
SE Stability		
Stable SE	0.40	2.20
Unstable SE	0.96	1.37

The analysis of the Contingent SE/socializing event model revealed that days with more socializing were related to greater consumption than days with less socializing, $\gamma = 1.196916$, $\underline{t} = 14.391$, $\underline{p} < .0001$. A significant SE Level x socializing event interaction emerged, $\gamma = -0.513795$, $\underline{t} = -5.819$, $\underline{p} < .001$. Predicted values (displayed in Table 32) indicated a pattern highly similar to that obtained in the SE Stability/socializing event model: among both high SEs and low SEs, consumption was greater on days with more socializing than on days with less socializing, but the difference was especially apparent among low SEs. This interaction was subsumed by a significant Contingent SE x SE Level x socializing events interaction, $\gamma = -0.385938$, $\underline{t} = -5.544$, $\underline{p} < .001$. Predicted values (displayed in Table 33) indicated that on days with less socializing, relatively noncontingent high SEs tended to consume less alcohol than relatively contingent high SEs. As socializing increased, the rate of consumption increased to a greater degree among relatively noncontingent high SEs compared to relatively contingent high SEs. Among low SEs, there were no differences in consumption as a function of contingent SE on days with less socializing. As socializing increased, relatively contingent low SEs tended to drink more than relatively noncontingent low SEs.

Weekday vs. Weekend Variations. To determine if any effects were isolated on the weekend or during weekdays, the data were analyzed separately for Monday-Thursday and Friday-Saturday. The mean number of drinks consumed on Monday-Thursday was .71, whereas the mean for Friday-Saturday was 2.08 (see Table 34 for the complete list of means and standard deviations for each variable on Monday-Thursday and on Friday-Saturday). Data for the two Sundays were omitted from this comparison because alcoholic beverages are not available for purchase on Sundays in the state of

Table 32

Predicted Values for Daily Alcohol Consumption among Underage Participants as a

Function of SE Level and Socializing

	Socializing		
	Less Socializing	More Socializing	
SE Level			
High SE	0.71	1.28	
Low SE	0.61	2.09	

Table 33

Predicted Values for Daily Consumption among Underage Participants as a

Function of Contingent SE, SE Level, and Socializing

	Socializing			
	Less Socializing		More Socializing	
	Contingent SE		Contingent SE	
	Noncontingent	Contingent	Noncontingent	Contingent
SE Level				
High	0.59	0.82	1.63	0.95
Low	0.60	0.61	1.84	2.33

Table 34

Means and Standard Deviations of Criterion Variables for Monday-Thursday and Friday-

Saturday

Measure	Monday-Thursday		Friday-Saturday	
	Mean	Std Dev	Mean	Std Dev
1. School/Work	2.79	0.88	1.86	0.94
2. Relationships	2.32	0.85	2.44	0.85
3. State of Mind	2.11	0.94	2.10	0.95
4. Appearance	2.12	0.84	2.22	0.90
5. Negative Events	1.14	1.22	0.84	1.10
6. Socializing	0.18	0.38	0.44	0.50
7. Alcohol	0.71	2.01	2.08	3.30

Note: Std Dev = Standard Deviation. School/Work = Preoccupation with School/Work.

Relationships = Preoccupation with Relationships. State of Mind = Preoccupation with

State of Mind. Appearance = Preoccupation with Appearance. Alcohol = Daily Alcohol

Consumption.

Georgia, and correspondingly, the mean number of drinks consumed on Sunday (.19) was much lower than the mean for any other day of the week. For this set of analyses, predicted values were added to the overall mean for the respective set of days instead of the grand mean for the entire sample to represent deviations as a function of cross-level interactions.

For the observations from Monday-Thursday, only the analysis of the SE Stability/Subjective Preoccupations model revealed significant effects. Low SE was related to more drinking than high SE, $\gamma = -0.243984$, $\underline{t} = -3.040$, $\underline{p} < .005$, and as Preoccupation with school decreased, drinking increased, $\gamma = -0.230201$, $\underline{t} = -3.605$, $\underline{p} < .001$. A significant SE Level x Preoccupation with School/Work interaction emerged, $\gamma = 0.124508$, $\underline{t} = 2.043$, $\underline{p} < .05$. Predicted values (displayed in table 35) indicated that the consumption of both high and low SEs decreased as concern for school/work increased, but the decline was especially sharp for low SEs.

The analysis of the Friday-Saturday data revealed a significant SE Level X Negative Events interaction in both the SE Stability model ($\gamma = -0.348443$, $\underline{t} = -2.433$, $\underline{p} < .05$) and the Contingent SE model ($\gamma = -0.406997$, $\underline{t} = -2.239$, $\underline{p} < .05$). Predicted values (displayed in Table 36) indicated that among low SEs, consumption increased as negative events increased. In contrast, among high SEs, consumption decreased as negative events increased. No other significant effects emerged.

Table 35

Predicted Values for Alcohol Consumption on Monday-Thursday as a

Function of SE Level and Preoccupation with School/Work

	Preoccupation with School/Work		
	Less Preoccupation	More Preoccupation	
SE Level			
High SE	1.19	0.99	
Low SE	1.90	1.28	

Table 36

Predicted Values for Alcohol Consumption on Friday and Saturday as a Function of

SE Level and Negative Events from the SE Stability/Negative Events model

(top panel) and from the Contingent SE/Negative Events model (bottom panel)

	Negative Events	
	Fewer Negative Events	More Negative Events
SE Level		
High SE	4.02	3.51
Low SE	4.11	5.15

	Negative Events	
	Fewer Negative Events	More Negative Events
SE Level		
High SE	3.78	3.60
Low SE	4.17	5.01

SECTION 4

DISCUSSION

The present findings provided support for the notion that fragile SE, in conjunction with the experience of everyday events, is associated with daily alcohol consumption. At the day-level, the occurrence of both negative events and socializing influenced rates of consumption. Daily fluctuations in subjective preoccupations with school/work and physical appearance also were related to drinking behaviors. At the trait-level, SE Stability interacted with objective events to predict daily consumption. Contingent SE also was related to drinking behaviors as a function of objective events, but these effects were moderated by SE Level and did not exhibit the same relationships with consumption across all the analyses.

Unstable SE was consistently associated with heightened alcohol consumption in reaction to negative events. In the analysis of the total sample, participants with stable SE reported having more alcoholic drinks on days with less negative events than on days with more negative events, whereas unstable SEs displayed an increase in the number of daily alcoholic drinks consumed as negative events increased. This pattern of consumption also emerged when isolating female and underage participants. However, when underage participants were isolated in the analyses, the SE Stability x Negative Events interaction was moderated by SE Level. The three-way interaction indicated that as negative events increased for underage participants, the consumption of stable high SEs increased slightly, whereas the consumption of unstable high SEs did not change. Although this finding tentatively refutes the hypothesis that fragile high SEs would tend

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to drink more than secure high SEs as negative events increased, the difference among stable high SEs as a function of negative events was moderate. In contrast, predicted values revealed a more dramatic increase among unstable low SEs as negative events increased. In any case, three-way interactions with the reduced sample ($\underline{N} = 61$) should be interpreted with caution, because the parameter estimates can change a great deal as sample size increases. It would be worthwhile for future investigations on this topic to include equal numbers of legal and underage drinkers to facilitate comparisons between the two groups.

Nevertheless, the findings from the full sample lend further support to the idea that unstable SEs display a heightened reactivity to daily events. Unstable SEs apparently alter their consumption of alcohol depending on the kinds of outcomes that they experience to a greater extent than do stable SEs. People with unstable SE have been found to report feeling better in response to positive events and feeling worse in response to negative events (Greenier et al., 1999) and to experience increases in depressive symptomology when dealing with daily hassles (Kernis et al., 1998). Although reactivity was not directly assessed in the current investigation, increasing alcohol consumption presumably reflects a strategy aimed at reducing the threatening implications of daily events. Unstable SEs apparently turn to alcohol as a way of dealing with the consequences of negative outcomes.

The socializing daily event also interacted with SE Stability to predict daily consumption. On days when relatively less socializing with friends occurred, unstable SEs tended to report greater consumption than did stable SEs. In contrast, stable SEs tended to drink more than unstable SEs on days when relatively more socializing took place. Again, these patterns of consumption were similar to those obtained in the

analyses of female and underage participants. It is possible that stable SEs tend to restrict most of their drinking to social settings and do not have a strong need to drink unless socializing. Unstable SEs also increased their drinking as they socialize, but they apparently have a stronger tendency to drink in non-social settings than do stable SEs. Alcohol might be providing tension-reducing benefits for unstable SEs who may feel excluded and isolated to a greater extent than stable SEs when not engaging in social activities. Admittedly, this reasoning is speculative. In fact, it is surprising that unstable SEs did not display more of an increase in drinking as they socialized because of the additional potential for threatening social situations and interpersonal events. Other findings indicated that low SEs displayed a more dramatic increase in consumption compared to high SEs as socializing increased, which suggests that alcohol might have helped low SEs feel more at ease in social situations.

For the most part, results of the analyses involving Contingent SE and daily events were consistent with the hypotheses. People with relatively contingent high SE displayed greater alcohol consumption on days where more negative events were experienced compared to days where less negative events were experienced. Participants with relatively noncontingent high SE, on the other hand, consumed less alcohol on days with more negative events compared to days with fewer negative events. A similar pattern emerged for women in the sample, but a divergent pattern emerged in the analysis of the participants under 21. Underage participants with *both* relatively noncontingent high SE and contingent high SE consumed more alcohol as negative events increased (but the rate of increase was greater among relatively contingent high SEs).

It is unclear why the patterns of underage participants differed from those of the total sample with respect to Contingent SE and negative events. One possibility involves

the kinds of resources that are typically available to underage students. If an underage student has a conflict with a friend or is excluded by his or her peer group, then the odds of obtaining alcohol are probably reduced. Underage students must frequently rely on older friends for alcohol or must go to settings where alcohol is served, so isolation would prohibit consumption even if a motive exists. If a legal drinker, on the other hand, experiences a negative interpersonal event, then he or she does not have to worry about access to satisfy the motive to drink. These considerations might explain why the negative events-consumption slope was greater for legal relatively contingent high SEs than for underage relatively contingent high SEs. However, the fact that underage participants with relatively noncontingent high SE displayed an increase in consumption as negative events increased is puzzling. Regardless, it is encouraging that the findings from the total sample for contingent high SE and negative events were generally consistent with the hypotheses. The differences observed in consumption between the smaller underage sample and the total sample probably reflect the different strategies of participants who do not have constant access to alcoholic beverages or to the social settings where alcoholic drinks are served.

The findings with respect to contingent high SE and socializing were similar for the total sample, for women, and for underage participants. On days with less socializing, people with relatively contingent high SE tended to drink more than people with relatively noncontingent high SE. As socializing increased, relatively noncontingent high SE was associated with more drinking than relatively contingent high SE. Borrowing from the interpretation of the socializing-consumption relationship of stable SEs, it is possible that people with relatively noncontingent high SE tend to restrict their drinking to social settings to a greater extent than do people with relatively contingent

high SE. Alcohol might also provide more tension-reducing benefits for relatively

contingent high SEs than relatively noncontingent high SEs in non-social settings. The

fact that the total sample and the underage sample yielded similar patterns suggests that

Contingent SE and SE Level tend to have the same kinds of effects on underage and legal

drinkers when they are exposed to neutral or positive social situations.

Although the findings from the underage sample deviated from those from the

total sample, the hypotheses involving contingent high SE and negative events were

supported in the analyses of the overall sample. As negative events increased,

participants with relatively contingent high SE drank more than participants with

relatively noncontingent SE. This pattern is consistent with past theory and evidence

(Deci & Ryan, 1995; Paradise & Kernis, 2000) that people with relatively contingent

high SE employ defensive strategies in the face of negative outcomes. Drinking alcohol

appears to be one strategy employed by people with relatively contingent high SE to deal

with negative outcomes. This finding is an encouraging preliminary step in research on

contingent high SE and defensiveness. However, more work needs to be done that will

isolate other kinds of defensive strategies utilized by people with relatively contingent

high SE, as well as potential mediators in the contingent SE-daily events-alcohol

consumption relationship.

Taken as a whole, the current findings related to unstable SE, contingent SE and

negative events lend support to the notion that fragile SEs, when experiencing potential

SE threats, increase their alcohol consumption. Although past theory and evidence

suggest that alcohol might reduce the salience of threatening information among fragile

SEs, no firm causal inferences can be made given the correlational nature of the design.

Instead, four potential interpretations can be offered. First, consistent with the arguments

laid out in the present study, fragile self-feelings may facilitate alcohol consumption as a means of reducing the impact of potentially threatening information. Second, fragile self-feelings may be fueled by overt behaviors such as drinking in the face of potential SE threats. Instead of defensive behaviors being the result of fragile SE, secure SE may be undermined by repeated defensive reactions to potentially threatening situations. Third, an unknown third variable may be influencing both fragile SE and alcoholic consumption. Future investigations should consider possible mediators in the fragile SE-alcoholic consumption relationship. Fourth, the possibility also exists that the state of inebriation (or at least non-sobriety) can lead to negative events not typically experienced during sobriety, which in turn influence self-feelings.

Although fragile SE was related to consumption in conjunction with negative events, fragile SE did not predict binge drinking. It was predicted that fragile SEs, compared to secure SEs, would experience more days with a high number of drinks because of a reliance on the intensely disruptive properties of heavy intoxication, but regression analyses did not support this hypothesis. Instead, moderate consumption might have the capacity to soften the impact of threatening information for fragile SEs. Fragile SEs do not seem to require excessive drinking to derive tension-reducing benefits from alcohol.

Turning now to the subjective preoccupation day-level variables, only preoccupation with school/work and preoccupation with personal appearance were significant predictors of daily consumption. Not surprisingly, as preoccupation with school/work decreased, consumption tended to increase. This relationship was moderated by SE Level, but only on Mondays, Tuesdays, Wednesdays, and Thursdays. On weekdays characterized by less preoccupation with school/work, low SEs drank more

alcohol than high SEs. As preoccupation with school increased, the difference between high and low SE shrank, but low SEs still reported more consumption. Participants (especially those with low SE) seemed to be altering their consumption in reaction to their perceptions of their obligations and took steps to ensure that drinking did not interfere with their day-to-day responsibilities during weekdays.

The effects of preoccupation with appearance were moderated by SE Stability and SE Level, but these effects differed for women and underage participants. Among all participants, as preoccupation with appearance increased, the consumption of stable high SEs tended to increase whereas the consumption of unstable high SEs tended to decrease. It is possible that stable high SEs consumed more alcohol than unstable high SEs when preoccupied with appearance because stable high SEs tended to socialize despite concerns about how they looked to others. Unstable high SEs, in contrast, might have preferred to maintain a low profile while not looking their best, and their consumption subsequently decreased because they were not socializing. Preoccupation with appearance may have reduced socializing, and, concurrently, the alcohol consumption of unstable high SEs because they are more reactive to potential negative outcomes than stable high SEs.

Among women and underage participants, only SE Level moderated the effects of preoccupation with appearance in the SE Stability/Subjective Preoccupations model. Women and underage participants with low SE increased their consumption as preoccupation with appearance increased, whereas high SEs slightly decreased their consumption as preoccupation with appearance increased. These findings extend those from previous studies indicating a negative relationship between SE Level and consumption (e.g. Valliant & Scanlan, 1996) and suggest that preoccupation with one's

appearance (as well as preoccupation with school/work) influences the drinking of low SEs (especially women and people under 21).

In addition, a significant Contingent SE x SE Level x preoccupation with appearance interaction in the analyses of female participants revealed no differences among relatively contingent high SEs as a function of preoccupation with appearance. Relatively noncontingent high SE was associated with an increase in consumption as preoccupation with appearance increased. As was speculated with unstable high SEs, it is possible that women with relatively contingent high SE did not socialize while dwelling on their appearance. Fragile high SEs did not seem to drink in conjunction with concerns about their appearance to the same extent that secure high SEs and low SEs did. These findings are puzzling and suggest that the relationship between fragile high SE, preoccupation with appearance, and alcohol consumption is complex and varies as a function of age and sex.

Although preoccupation with school/work and appearance were related to daily consumption, preoccupation with relationships and state of mind/psychological well-being were not. These null effects are puzzling, especially considering that the mean ratings of preoccupation with relationships and state of mind were comparable to those of school/work and appearance. It is unclear why the daily preoccupation-alcohol consumption relationship differed as a function of the type of preoccupation, and future research hopefully will shed some light on the reasons for these differences.

The possibility also exists that participants were preoccupied with other daily concerns that were not listed on the questionnaire. I examined the concerns written into the "other" category, and several involved the Presidential election, which took place on the first Tuesday of Phase 3. The results of the election remained unresolved until the

conclusion of data collection. Participants might have focused more on this external issue than the personal issues in their daily lives to a greater degree than during other periods in the year. Ideally, the daily diary could be administered at different intervals throughout an entire year, or at least throughout a semester to combat potential history effects.

The timing of data collection might have also affected the overall number of alcoholic drinks reported. In general, the rates of consumption were low. For example, Carney et al. (1998) reported an average consumption rate of 1.39 drinks per day with a diary format and a rate of 2.13 drinks per day with a hand-held drink recorder from a community sample. In fact, roughly one-third of the current sample (25 participants) reported not consuming any alcohol over the two-week span. Schall et al. (1992) classified 27% percent of their respondents as non-drinkers, so the rate of abstinence in the present study seems moderately high. The overrepresentation of underage students in the sample probably contributed to the low frequency of alcohol consumption.

Another concern related to this issue is the self-report nature of the data. Unfortunately, there are no ways to check the accuracy of participants' reports. Although the experimenters took extensive care to alleviate any legal concerns among underage participants, it is likely that underage drinkers still felt reluctant to report the full extent of their drinking because they were afraid of the repercussions. Despite the problems associated with accurate recording of alcohol consumption, it is encouraging that significant trait-level and day-level effects did emerge to form a meaningful pattern of results.

Although not all of the subjective preoccupations influenced daily consumption, it is noteworthy that none of the trait-level variables independently predicted consumption

in the overall sample. Fragile SE only predicted consumption in conjunction with daily events and subjective preoccupations. In addition, the cross-level interactions remained significant only when data from all seven days of the week were analyzed simultaneously. Fragile SE did not moderate day-level effects only on weekends or only on weekdays. Fragile SE therefore appears to have a multifaceted relationship with alcohol consumption. The current findings suggest that fragile SE is a predictor of daily alcohol use, but specific kinds of daily events and concerns must be prevalent for fragile SEs to increase their consumption. Furthermore, these phenomena apparently are not restricted to particular times or days but instead continually manifest on a day-to-day basis.

As Hull and Young (1983) demonstrated nearly twenty years ago, alcohol consumption can vary tremendously depending on the individual's motives and dispositions. The present results support their findings and point to the contribution made by day-to-day events and concerns. Understanding the correlates of alcohol use should involve an understanding of the interplay between self-feelings and daily variations in people's lives.

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CONTINGENT SELF-ESTEEM SCALE

Listed below are a number of statements concerning personal attitudes and characteristics. Please read each statement carefully and consider the extent to which you think it is like you. Circle one number on the scale below each statement that best reflects your answer. There are no right or wrong answers, so please answer as honestly as you can. Thank you.
Please use the following scale:

1………..………2………..………3…………..……4……………..…5
Not at all   **Neutral**   **Very Much**
  like me   **like me**

_____1. An important measure of my worth is how competently I perform.
_____2. Even in the face of failure, my feelings of self-worth remain unaffected.
_____3. A big determinant of how much I like myself is how well I perform up to the standards that I have set for myself.
_____4. My overall feelings about myself are heavily influenced by how much other people like and accept me.
_____5. If I get along well with somebody, I feel better about myself overall.
_____6. An important measure of my worth is how physically attractive I am.
_____7. My overall feelings about myself are heavily influenced by what believe other people are saying or thinking about me.
_____8. If I am told that I look good, I feel better about myself in general.
_____9. My feelings of self-worth are basically unaffected when other people treat me badly.
_____10. An important measure of my worth is how well I perform up to the standards that other people have set for me.
_____11. If I know that someone likes me, I do not let it affect how I feel about myself.
_____12. When my actions do not live up to my expectations, it makes me feel dissatisfied with myself.
_____13. Even on a day when I don't look my best, my feelings of self-worth remain unaffected.
_____14. My overall feelings about myself are heavily influenced by how good I look.
_____15. Even in the face of rejection, my feelings of self-worth remain unaffected.

DAILY ALCOHOL DIARY

DATE_____   ID CODE_____

TIME_____

a. How many hours of TV did you watch today?

0   1   2   3   4   5   6   7   8   9   10 or more

b. How many hours did you spend hanging out with friends today?

0   1   2   3   4   5   6   7   8   9   10 or more

c. How many hours did you exercise today?

0   1   2   3   4   5   6   7   8   9   10 or more

d. Please circle the number of alcoholic drinks you consumed before you went to bed.

0   1   2   3   4   5   6   7   8   9   10 or more

The following statements refer to concerns that people may have from day to day. We would like you to indicate the extent to which these were things that you thought about today.
Please use the following scale:

1	2	3	4
I did not think about this at all	I thought about this occasionally	I thought about this frequently	I was very preoccupied with this

1_____. Performance at school/work
2_____. The nature or quality of my relationships with others
3_____. My state of mind/psychological well-being
4_____. My appearance or other personal characteristics
5_____. other _____

Please indicate which of the following events occurred today. Place a check next to the event if it happened.

_____1. did poorly on a school/work task (e.g. test, assignment, job duty)

_____2. had a disagreement with friend, family member, acquaintance or romantic partner

_____3. friend, family member, acquaintance, or romantic partner complimented me

_____4. did something embarrassing in a social situation

_____5. fell behind in coursework or duties (e.g. never got around to studying for a big test)

_____6. went out socializing with friends to a party or bars

_____7. was mistreated by someone with whom I interacted today

_____8. friend, family member, acquaintance or romantic partner was critical of me or my abilities

_____9. was excluded or left out by my group of friends

_____10. other meaningful event _____

        (please specify as positive or negative)