VALUE-RELEVANT INVOLVEMENT, VALUE-EXPRESSIVE COMMUNICATION, AND HEALTH BEHAVIORS

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ABSTRACT

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This study extends research on value-expressive communication (Anderson, 2011a) by exploring its relationship to value-relevant involvement (Johnson & Eagly, 1989; Sherif & Hovland, 1963) and certain health behaviors (i.e., moderate drinking, condom use, and dieting). Value-expressive communication is the verbalization of a value-expressive attitude (Katz, 1960) in an interpersonal context. Because value-expressive communication verbalizes a valueexpressive attitude, and value-relevant involvement is a psychological state that indicates one holds a value-expressive attitude, this study proposes that value-relevant involvement (VRI) will be positively related to value-expressive communication (VEC) and to behavioral intentions (BI). In addition, this study proposes that value-expressive communication about a health behavior will be related to intentions to enact that behavior. This study further posits that personal values will be related to behavioral intentions and moderate the VRI-BI and VEC-BI relationships.

N = 547 college students completed an online survey in one of three conditions (moderate drinking, condom use, or dieting). Study results indicate that hedonism was a negative predictor of moderate drinking intentions and universalism was a positive predictor of condom use intentions; no other values had significant direct effects on intention. Value-relevant involvement had a significant, positive direct effect on value-expressive communication with close friends about all three behaviors; and value-relevant involvement had a significant, positive direct effect on behavioral intentions across all behavioral domains. However, the proposed interaction

between value-relevant involvement and values was not significant in any behavioral domain. Attitudes explained significant variance in behavioral intentions across all domains. Finally, value-expressive communication with close friends had a significant direct effect on intentions to drink in moderation (among those who planned to drink). However, the proposed three-way interaction between value-expressive communication, attitudes, and values was not significant in any behavioral domain.

This study provides support for the proposed relationship between value-expressive communication and value-relevant involvement. Observing this relationship supports the conceptualization of value-expressive communication as the verbalization of a value-expressive attitude since value-relevant involvement is a psychological state that indicates one holds a value-expressive attitude.

Dedication

First, I would like to dedicate this dissertation to God. There were many moments where I wanted to stop working on this project or others, because I was tired, worn out, questioning the significance of it, or just plain wanting to do anything but work. And in those moments, I remembered Colossians 3:23-24: "Whatever you do, work at it with all your heart, as working for the Lord, not for human masters, since you know that you will receive inheritance from the Lord as a result. It is the Lord Christ you are serving." Of course this motivates me to do excellent work, but in moments of fleeting motivation, I also invoked this verse sarcastically in a prayer to the Lord, "Lord, I am *only* doing this for you [almost like a favor]. If it weren't for you, this work would never get done. If I only cared about my own ambitions, or impressing other people, I would have given up so long ago. But, since *you* seem to want me to do this, I guess I'll keep going." I pressed on and completed this work because I believe this career path was ordained by God, as was this dissertation. So it is only fitting that it be dedicated to God.

Second, I would like to dedicate this dissertation to my husband, Justin Anderson. His support, encouragement, dedication, and belief in my ability to complete my PhD are the foundation on which this project was built. Justin has also affirmed my God-given calling as a member of the academy, that is, to be a person who pursues, creates, and shares knowledge in the belief that knowledge can transform this world into a more peaceful and just place.

Third, I would like to dedicate this dissertation to my advisor, Dr. Maria Lapinski. She was an excellent model of ambition, flexibility, intelligence, passion, leadership, and wisdom. She was an amazing advisor for all four years of my doctoral program, and for the dissertation specifically, she moved mountains to make this project move quickly and smoothly. She is to be commended for her dedication and drive. Without her, this dissertation would not exist.

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INTRODUCTION

Communication scholars have used the functional approach to attitudes (Katz, 1960) to improve message design (Hullett, 2002; 2004; 2006) and to model persuasive message processing (Lapinski & Boster, 2001). However, the relevance of the functional approach to the communication discipline could be enhanced by exploring how attitude functions are expressed through verbal communication. The current study deals with the concept of value-expressive communication (Anderson, 2011a), which is the expression of personal values through communication about an attitude. Value-expressive communication can be thought of as a communicative reflection of a value-expressive attitude. This study extends research on valueexpressive communication by exploring its relationship to value-relevant involvement (Johnson & Eagly, 1989; Sherif & Hovland, 1961) and certain health behaviors (i.e., moderate drinking, condom use, and dieting). The study proposes that value-relevant involvement is a psychological state that may be indicative of a value-expressive attitude, and therefore may be positively related to value-expressive communication. In addition, this study proposes that value-expressive communication about a health behavior will be related to intentions to enact that behavior, and this relationship will be moderated by personal values.

Chapter one provides a review of relevant literature. It begins with a discussion of the theory of human values (Schwartz, 1992) as basis for understanding value-expressive attitudes and communication. The next section traces the development of value-expressive communication from its theoretical roots in the functional approach to attitudes to recent research that supports this construct. Value-relevant involvement is then introduced as a construct that has close conceptual ties with value-expressive attitudes, and which may be positively related to value-expressive communication. The chapter then turns to an examination

of the relationship between value-expressive communication and behavior. Next, this chapter provides details on the prevalence and severity of the key health issues that will be addressed in this study, as well as giving an overview of their relationships to values and communication. Finally, the chapter presents a brief rationale for each study hypothesis.

Chapter two provides an overview of the study method including the procedure and measurement. The online survey is described; the rationale and previously established psychometric properties of each measure are discussed.

Chapter three describes the preliminary data analyses. First, the chapter overviews the pilot study that was conducted to check the psychometric properties of measures that were created or modified for this study. Next, this chapter describes the participants in the study, the reliability and validity of study scales, the determination of covariates, and a brief overview of key relationships between study variables.

Chapter four presents the results of statistical tests used to determine whether the data were consistent with study hypotheses or to answer study research questions. In brief, the results indicate that hedonism is a negative predictor of moderate drinking intentions and universalism is a positive predictor of condom use intentions; no other values had significant effects on intention. Value-relevant involvement explains a significant amount of variance in valueexpressive communication across all behavioral domains; and value-relevant involvement has a significant direct effect on behavioral intentions across all behavioral domains. However, the proposed interaction between value-relevant involvement and values was not significant in any behavioral domain. Attitudes explained significant variance in behavioral intentions across all domains. Finally, value-expressive communication had a significant direct effect on intentions to drink in moderation (among those who planned to drink). However, the proposed three-way

interaction between value-expressive communication, attitudes, and values was not significant in any behavioral domain.

Chapter five discusses the implications of the results presented in chapter four, and provides suggestions for future research. First, personal values are discussed and modifications and improvements to value measures are proposed. Second, the relationship between valuerelevant involvement and behavioral intentions is discussed and the idea of value-activation is proposed as a mechanism for increasing the effect of VRI on behavioral intentions in experimental studies. Third, the relationship between VRI and VEC is discussed, with particular attention to the issue of directionality in this relationship. In this section, potential experimental manipulations of VRI and VEC are proposed and a program of research in this context is put forward. Fourth, VEC is discussed in more detail, and the idea of communication springing from attitude functions is expanded to suggest that other forms of functional communication (e.g., social-adjustive communication) may be investigated in future research. Finally, limitations of the study are discussed.

Chapter 1: LITERATURE REVIEW

Personal values form the basis of value-relevant involvement, value-expressive attitudes, and value-expressive communication. Thus, this chapter will first define values and outline previous work with values. Then, it will turn to a discussion of the functional approach to attitudes, focusing on the value-expressive function. Extending from attitudes to communication, the chapter will then turn to an overview of value-expressive communication and previous work with this construct. This section includes a discussion of the relationship between value-relevant involvement and value-expressive attitudes and communication, suggesting that value-relevant involvement is an indicator of holding a value-expressive attitude. Next, the link between valueexpressive communication and health behaviors is discussed. Three health behaviors (moderate drinking, condom use, and dieting) are then presented as the contexts in which the key theoretical relationships will be explored. Finally, the chapter ends with the rationale for each study hypothesis.

Values

Values are defined as relatively enduring abstract beliefs about achieving desirable endstates that "serve as guiding principles in people's lives" (Schwartz & Huismans, 1995, p. 89). Values constitute person's ideals about how a person should behave, about whether a particular end-state is desirable, and about how to conduct oneself in order to achieve those desired endstates, or goals (Rokeach, 1973). Since Rokeach's (1973) seminal work with human values, extensive empirical research has demonstrated reliable value structures that have led to the development of a theory of basic human values (Schwartz et al., 2001).

In his theory of basic human values, Schwartz (1992) posits that there are ten "higher order" values, or ten underlying motivational states, that characterize the value structure of

humans across the globe. These higher order values include: power (social prestige, control over others), achievement (personal success, impressing others), hedonism (pleasure, enjoyment), stimulation (excitement, novelty), self-direction (autonomy, exploration, activeness), universalism (tolerance, equality), benevolence (care for others, offering help), tradition (commitment to traditional customs or religions), conformity (follow rules, follow social norms), security (safety, societal stability). These higher-order values drive more specific, or instrumental, values. For example, valuing achievement drives a person to value being impressive to others. Being impressive to others is an instrumental goal on the way to arriving at the ultimate, or higher order, goal of achievement. Schwartz (1992) also proposes that these higher order values are related to one another dynamically. This dynamic relationship reveals that the pursuit of a certain value (e.g., self-direction) may support the pursuit of another value (e.g., stimulation).

Support for Schwartz's (1992) theory of basic human values can be seen across a number of studies in diverse populations. For example, Schwartz et al. (2001) tested this model, using two different measurement methods, in four studies (conducted in diverse areas such as South Africa, Uganda, Italy, and Israel), and found that the value structure was consistent. In other words, across countries the values were empirically separate from one another, but related in ways consistent with the theory. Indeed, in his review of over 70 studies using Schwartz's (1992) model, Maio (2010) concludes that there is sufficient evidence to support the theory that a) there is a consistent structure of human values across cultures b) these values are dynamically related to one another c) these values are consistently related to theoretically meaningful variables such as attitudes, beliefs, and behavior and d) these value-attitude or value-behavior relationships follow patterns consistent with the theoretical relationships between values. This last point is

important because it demonstrates that, for example, an attitude that is positively related to a value on one side of Schwartz's (1992) circumplex model (e.g., an exciting life) will be negatively related to a value (e.g., self-discipline) that is in opposition to the first value. This means that attitudes and values are related in consistent and reliable ways. Hence, Schwartz's (1992) human values theory is useful for understanding how values operate in value-expressive attitudes.

Functional Approach to Attitudes

Katz (1960) developed the functional approach to attitudes to describe why people hold the attitudes they do. Functional theory posits that people hold attitudes for different reasons. Katz (1960) proposed four attitude functions: the *knowledge/utilitarian function*, the *adjustment function* [labeled the social-adjustive function by Smith, Bruner & White (1956)], the *valueexpressive function*, and the *ego-defensive function*. Attitudes that serve the *knowledge/utilitarian function* aid people in making sense of their world. Attitudes that serve the *adjustive function* allow one to evaluate the rewards and punishments associated with holding a given attitude. Attitudes that serve the ego-defensive function respond to attacks on one's ego, and are often designed to conceal one's true nature from oneself. Finally, attitudes that serve the *valueexpressive function* allow a person to express his/her personal values and gain satisfaction from the expression of those values (Katz, 1960).

Value-Expressive Attitudes

Value-expressive attitudes are strongly related to a person's values (Maio & Olson, 2000; Smith et al., 1956) and allow a person to maintain his or her personal values (Hullett & Boster, 2001; Katz, 1960). They clarify one's self-image and, at the same time, their expression crafts one's self-image (Katz, 1960). Previous work with value-expressive attitudes has explored the

extent to which an attitude serves that function (Herek, 1987), their relationship to personality characteristics such as self-monitoring (DeBono, 1987), and the process by which value-expressive attitudes may be changed (Hullett & Boster, 2001; Hullett, 2002).

Studies linking value-expressive attitudes to behavior often expose participants to valuerelevant persuasive messaging, then measure attitudes after message exposure; such attitudes are thus considered value-expressive (Hullett & Boster, 2001; Hullett, 2002). These post-valuerelevant-message-exposure attitudes predicted intentions to vote for a tuition increase (Hullett & Boster, 2001), to be tested for herpes and Chlamydia (Hullett, 2004), and to be tested for HIV/AIDS (Hullett, 2006). In addition, Maio, Olson, Allen, and Bernard (2001) demonstrated that asking subjects to contemplate reasons for holding values related to an attitude, thus making the value-attitude link (or the value-expressiveness of an attitude) salient, predicted egalitarian and helpful behaviors. Thus, value-expressive attitudes are related to behavioral intentions and behaviors. However, previous studies did not explore the verbal *expression* of a value-expressive attitude nor its potential relationship to behavioral intention.

Value-Expressive Communication

Value-expressive communication is thus a conceptual extension of Katz's (1960) valueexpressive attitude function. Previous conceptualizations of value-expressive attitudes note that such attitudes can be, but need not be, publicly expressed in order to be deemed "valueexpressive" (Herek, 1987; Hullett, 2002; Smith et al., 1956). However, this study follows from Anderson (2011a) to argue that a central characteristic of value-expressive attitudes is their public expression by the person who holds them. Thus, *verbal communication* of values through expression of one's attitudes becomes the place where value-expressive attitudes can be observed and understood. This focus on communication as the place where value-expressive attitudes operate, and where value-expressiveness can be measured, distinguishes *value-expressive communication* from earlier work with value-expressive attitudes that centered on the *value-relevance* of an attitude (Hullett, 2002). Hullett (2002) used *value-relevance* as an indication of the perceived utility of an attitude to achieve a desired end-state. It is a direct measure of the relationship between a particular value and a particular attitude, rather than a measure of the expression of attitudes that are linked to personal values. Concentrating on *value-expressive communication* of an attitude rather than *value-relevance* allows communication behavior to take center stage in considering the relationship between values, attitudes, and behaviors. This is because *value-expressive communication* focuses on the ways that people use their attitudes to communicate to others about their personal values. It moves the study of value-expressive attitudes beyond the realm of establishing the existence and nature of cognitive links between values and attitudes into the realm of exploring communicative behavior related to such cognitive links.

Evidence of Value-Expressive Communication

Previous research has provided evidence for the existence of value-expressive communication. Anderson (2011b) found that when Christians spoke about exercise, they sometimes linked their attitudes to important personal values. Such value-expressive communication often contrasted the higher order value of tradition (e.g., wanting to follow the customs of Christian religion) with the higher order value of hedonism (e.g., pursuing activities for one's own gratification). The participants' communication revealed that attitudes toward exercise were entrenched in these values such that exercise may either be seen as an appropriate Christian endeavor to maintain the body as "God's temple" (thus upholding and pursuing the value of tradition) or as an inappropriate endeavor done for one's own pleasure or pride (thus

upholding and pursuing the value of hedonism—which is in opposition to tradition) (Anderson, 2011b). This discursive tension is consistent with Schwartz's (1992) circumplex model of values, in which hedonism and tradition are located directly opposite one another in the model.

Building on this premise, Anderson (2011a) again examined value-expressive communication about exercise among Christians. However, in this case, value-expressive communication was measured with a 5-item self-report measure developed for that study. The scale asks participants to report (on a 1 to 10 scale) the extent to which their communication about exercise reflects their personal values. Anderson (2011a) found that, consistent with earlier work (Anderson, 2011b), Christians reported a varied and moderate amount of value-expressive communication about exercise, M = 6.15 (SD = 1.91). In addition, this scale showed acceptable reliability ($\alpha = .88$) and validity (Anderson, 2011a). Thus, there is some evidence to support the idea that value-expressive communication exists, that individuals' perceptions of their valueexpressive communication behaviors can be reliably measured, and that people do communicate value expressively about exercise attitudes.

Other studies not working from a value-expressive communication framework, but examining lay communication about health issues, also provide support for the idea that communication about health can express personal values under some circumstances. For example, in cases where one feels a need or desire to defend or justify one's actions, communication about those actions is especially likely to include or reflect one's personal values. Arnold (2005) found that women in the U.S. with very large families (i.e., families above median family size with more than six children) often felt the need to explain their choice to have large families. These explanations have characteristics of value-expressive communication. Most commonly, the women's communication invoked the higher order value of tradition and

made reference to following religious customs regarding birth control and family planning (Arnold, 2005).

Communication about other health issues such as fruit and vegetable consumption (Simunaniemi, Sandberg, Andersson, & Nydahl, 2011), weight loss (Knuf & Caughlin, 1993; Leggatt-Cook & Chamberlain, 2011), and breast-feeding (Tardy, 2000) can also be examined for evidence of values being expressed through that communication. Simunaniemi et al. (2001) found that bloggers wrote about fruit and vegetable consumption in a way that linked their behaviors with higher-order values such as hedonism (e.g., talking about the enjoyment of healthy eating) and self-direction (e.g., "I strongly believe that we are meant to eat seasonal products, so I eat berries when they are in season" (p. 625)). Leggatt-Cook and Chamberlain (2011) showed that weight loss bloggers linked their dieting activities to personal identity and values such as personal achievement. Knuf and Caughlin (1993) showed that advertisements for dieting-related products included clear links to personal values such as "self-image, health, pride, and control" (p. 162). Tardy (2000) observed that mothers in play groups spoke about breastfeeding in terms of personal values of benevolence (e.g., breastfeeding is best for the baby's health), self-direction (e.g., "I just knew [breastfeeding] was the right thing for me to do. Because I am a scientist...To not nurse is to go against what our bodies were meant for" (p. 458)), or tradition (e.g., "I never did [breastfeed]...It is just something that—my family never did it—and none of my friends ever did...and I would have felt like an outcast [if I had breastfed]" (p. 457)).

Thus, value-expressive communication has been documented in a variety of contexts among different samples. In addition, there is evidence to suggest that researchers can understand value-expressive communication through different methodologies including the

interpretation of naturally-occurring discourse, analysis of focus groups, or measurement of selfreported value-expressive communication behavior. Quantitative measurement of valueexpressive communication behavior is advantageous because it more readily lends itself to an investigation of the relationship between value-expressive communication and other variables such as value-relevant involvement and behavioral intentions. Value-relevant involvement is a psychological construct that may be useful for determining the conditions under which valueexpressive communication is most likely to occur.

Value-Relevant Involvement

Johnson and Eagly (1989) define involvement as a motivational state that is produced by the perceived link between an attitude and some aspect of an individual's self-concept. There are three types of involvement that are each correspondent to a particular aspect of the self-concept to which an attitude is linked. Impression-relevant involvement has to do with the self that one presents to others; thus, high impression-relevant involvement indicates a desire to hold a position that will be socially acceptable and thus create a positive public self image. Outcomerelevant involvement deals with the actualization of self, or the attainment of particular goals, such that high outcome-relevant involvement with an issue indicates that the issue is important to the attainment of immediate personal goals. Finally, value-relevant involvement deals with the deep element of self-concept which is drawn from social and personal values; high valuerelevant involvement indicates a strong sense of a connection between the issue and important personal or social values (Johnson & Eagly, 1989).

Value-relevant involvement has its conceptual roots in the construct of ego-involvement from social judgment theory (SJT, Sherif & Hovland, 1961). Highly involving attitudes, in this early work, were those that were closely linked to an individual's ego or identity (Sherif &

Hovland, 1961). Social and personal values are thought to be an integral part of the conceptualization of self-identity, because one defines oneself, in part, by the values one cherishes and the ultimate goals or end-states one pursues (Ostrom & Brock, 1968). Indeed, Ostrom and Brock (1968) defined one's self-concept as a "distinct constellation of personal and social values" (p. 375). Thus, values are a key element of one's self-concept, and when there is a strong link between such values and one's attitude toward an object, value-relevant involvement may occur.

Value-relevant involvement and the concept of value expressive attitudes are distinct concepts despite sharing similarities. Recall that a value-expressive attitude is one that serves the purpose of expressing one's values; it links one's personal values to a particular attitude (Katz, 1960). Thus, it may be said that the state of value-relevant involvement about a given topic indicates that there is an attitude-value link that may result in an individual holding a value-expressive attitude on that topic. Johnson and Eagly (1989) note that value-relevant involvement should be conceptually and empirically correspondent to value-expressive attitudes. Both constructs are based on the idea that values may be linked to attitudes, and that such a link has an effect on how one may process messages (Johnson & Eagly, 1989; Katz, 1960; Levin, Nichols, & Johnson, 2000).

Previous research demonstrates that value-relevant involvement and value-expressive attitudes produce similar message processing results. Studies have used these concepts as indicators for each other. For example, Blankenship and Wegener (2008) used a value-linking exercise to induce value-expressive attitudes, whereby participants drew connections between values and passages in the messages. Then, rather than measuring value-expressive attitudes directly, Blankenship and Wegener (2008) measured the value-relevance of the participants'

attitudes as an indicator of holding value-expressive attitudes. Participants were then exposed to counter-attitudinal messaging. Consistent with Hullett's (2002) findings, those with high value-relevant involvement (or highly value-expressive attitudes) had more message elaboration (i.e., listed more thoughts). Blankenship and Wegener (2008) found that high value-relevant involvement produced less attitude change than low value-relevant involvement.

In another study, holding a value-expressive attitude was taken as an indicator of valuerelevant involvement with the issue (Maio & Olson, 1995). Maio and Olson (1995) argued that VRI and ORI "overlap" conceptually with value-expressive and utilitarian functions, respectively (p. 68). Thus, in order to test the effects of involvement on message processing, Maio and Olson (1995) manipulated the functionality of an attitude so that attitudes either served value-expressive or utilitarian functions. The manipulation occurred through messaging that highlighted either salient values or outcomes; these manipulations corresponded to valueexpressive or utilitarian attitudes. Then, these manipulated attitude functions were used as indicators of either value-relevant or outcome-relevant involvement. Maio and Olson (1995) demonstrated that the different types of involvement, as indicated by different attitude functions, produced different argument processing. Specifically, for those in the utilitarian condition, there was a main effect for argument strength such that stronger arguments led to greater attitude change. For the value-expressive condition, however, there was an interaction between attitude function and attitude change. Attitudes that were highly value-expressive had less positive change than all other groups overall, and were not affected by message strength. However, attitude change was greater for attitudes low in value-expressiveness after exposure to a strong argument than to a weak argument.

The findings from these two studies demonstrate that a) value-expressive attitudes and value-relevant involvement produce similar message processing results and b) value-linked attitudes (whether measured or manipulated in terms of VRI or functionality) are resistant to change. At first glance, the findings on values-based attitudes being resistant to change seem contrary to Hullett's (2002) findings on value-matched messaging using value-expressive attitudes. However, both Blankenship and Wegener (2008) and Maio and Olson (1995) used messages that contained values that were either counter to the audience's values (i.e., mismatched messaging) or were irrelevant to the manipulated values. Therefore their findings are consistent with both the involvement (Johnson & Eagly, 1989) and attitude function (Hullett, 2002) literature with respect to the effects of values-based messaging on message processing and attitude change. Thus, given their conceptual similarities, previous research on message processing has used value-relevant involvement and value-expressive attitudes interchangeably, because the two are so conceptually similar. The current study follows this logic and uses valuerelevant involvement as an alternative way to measure the presence of a value-expressive attitude.

Beyond its effect on message processing, the current study argues that value-relevant involvement (indicating a value-expressive attitude) may be related to message production in the form of value-expressive communication. That is, value-relevant involvement with an issue should be positively related to one's value-expressive communication about that issue. That is because value-relevant involvement should be indicative of holding a value-expressive attitude, and value-expressive communication is the communicative output that occurs as a result of holding a value-expressive attitude. The effects of such communication are the focus of the next section.

Value-Expressive Communication and Behavior

Value-expressive communication is a special form of communication, because it is the communicative extension of a value-expressive attitude. Previous research has demonstrated that value-expressive attitudes are positively related to health-related behavioral intentions such as getting tested for an STI (Hullett, 2004) or tested for HIV/AIDS (Hullett, 2006). In addition, communication about health behaviors is also positively associated with enacting those behaviors (Dorsey, Scherer, & Real, 1999; Noar, Carlyle, & Cole, 2006). For example, in a recent meta-analysis, Noar et al. (2006) found that communication about condom use was positively related to condom use across 53 studies (r = .25). Dorsey et al. (1999) found that frequency of communication with friends about binge drinking was positively related to excessive drinking (r = .55). This relationship was stronger than the overall relationship between frequency of communication with friends and excessive drinking (r = .44) (Dorsey et al., 1999). This suggests that the content of communication with friends provides a clearer picture of the communication-behavior link than overall amount of communication, hence providing support for attending to the value-expressive content of communication rather than focusing on overall frequency of communication or loquacity.

Given the positive relationship observed between value-expressive attitudes and certain behavioral intentions (Hullett, 2004; 2006) and between communication and behavioral intentions (Dorsey et al., 1999; Noar et al., 2006), it is argued that value-expressive communication will also be positively related to behavioral intentions. Indeed, previous research has demonstrated a significant link between value-expressive communication and behavioral intentions. Anderson (2011a) found that value-expressive communication about exercise was a

unique and significant predictor of exercise intentions, after accounting for basic attitudes and individual health status.

Note that the studies examining the communication-behavior link reviewed above did not report on the nature of such communication. That is, communication about these behaviors may endorse or oppose the behavior, and in particular, when communication is value-expressive, the values operating in that communication may be positively or negatively linked to the behavior. These specific attributes of communication about health behaviors have not been considered in previous research on communication and behavioral intentions in these domains, but they will be considered in the current study. Additionally, the relationship between value-expressive communication and behavioral intention has thus far only been tested in one health behavior domain. Thus, the current study expands on this work by including multiple health contexts in which to test the VEC-behavioral intention link.

Health Behaviors in the Current Study

Because it is argued that VEC has an effect on behavioral intentions, but this effect has only been studied in one behavioral domain, the current study is expanding to additional behavioral domains in order to test the generalizability of this relationship. The current study will consider the following health behaviors: moderate drinking, condom use, and dieting; these three behaviors were strategically chosen because they are salient to the study population (i.e., college students). Baxter, Egbert, and Ho (2008) had students record, in a diary, all health-related conversations they engaged in for a two week period. They found that college students reported, on average, engaging in approximately 10 conversations about health per week (SD = 3.2). Of these, 17.7% dealt with drinking alcohol or unsafe sexual activity, another 23% concerned nutrition and diet (Baxter et al., 2008). In addition, previous research has demonstrated that these

behaviors are significantly related to personal values and communication about the behaviors. Thus, it is reasonable to predict that these behaviors may be significantly related to valueexpressive communication. The following sub-sections provide a background on these three health behaviors by discussing their prevalence and severity of these issues for college students (the study population), then demonstrating their relationship to values and communication.

Moderate Drinking

Binge drinking is common among college students, and is associated with negative health outcomes. Approximately 44% of college students report recent heavy drinking behavior, i.e., drinking 5 or more drinks in a single session (Courtney & Polich, 2009; Wechsler, Lee, Kuo, Seibring, Nelson, & Lee, 2002). In addition, extreme drinking styles (e.g., drinking for the purpose of getting drunk) are prevalent; polarized drinking patterns—with more students abstaining and more students engaging in frequent binging-are becoming more common; and 'getting drunk' is often cited as a major motivator for drinking behavior (Keeling, 2002; Wechsler & Nelson 2008). Binge drinking is related to a host of negative health outcomes including alcohol poisoning, injury, suicide, hypertension, and even death (Courtney & Polich, 2009). In fact, among preventable deaths, alcohol consumption ranks third most common in the United States (McGinnis & Forge, 1993), with binge drinking often accounting for a large proportion of those deaths (Chikritzhs, Jonas, Stockwell, Heale, & Dietze, 2001). Given the problems associated with excessive drinking, many college campuses have used campaigns to persuade students to drink in moderation (Berkowitz, 2003; Perkins, 2003). Drinking in moderation, in contrast to the risky nature of excessive drinking, is actually associated with positive effects such as social integration, mood enhancement, and subjective health (Heath, 2007; Peele & Brodsky, 2000).

Research that has examined the relationships between values and drinking behavior has focused on excessive, or binge, drinking. This research reveals clear relationships between values and drinking behavior, as well as between communication and drinking behavior. Frequency of communication about drinking is positively related to excessive drinking behavior (Dorsey et al., 1999). In general, excessive drinking is positively associated with the values of hedonism and stimulation (Cole et al., 2007; Goff & Goddard, 1999) and negatively associated with values such as tradition or conformity (Dollinger & Kabayashi, 2003; Sheppard, 2011). Sheppard (2011) found that US college students' intentions to binge drink were positively correlated with the values of hedonism (r = .36) and stimulation (r = .26) and negatively correlated with the values of conformity (r = -.36) and tradition (r = -.25). Dollinger and Kabayashi (2003) also observed that problem drinking in US college students was positively associated with the values of hedonism (r = .29) and self-enhancement (r = .36), whereas it was negatively associated with the values of tradition (r = -.20) and conformity (r = -.18). Additional studies also support the link between excessive alcohol use and the value of hedonism (Cole et al., 2007; Goff & Goddard, 1999).

Findings on the relationship between values and excessive drinking can logically be extended to predictions about the relationship between values and moderate drinking. Because moderate drinking is associated with positive health and social benefits (Peele & Brodsky, 2000), whereas excessive drinking is associated with negative health and social risks (Courtney & Polich, 2009), it may be expected that the opposite pattern of value-behavioral intention relationships could be observed for moderate drinking as that which has been established for excessive drinking. That is, it can be inferred that, since excessive drinking has been shown to be negatively related to conformity and tradition, moderate drinking would be positively related to

these values. Additionally, it can be inferred that, since excessive drinking has been shown to be positively related to hedonism and stimulation, moderate drinking would be negatively related to those values.

Condom Use

Inconsistent condom use is a common and serious health issue among college students. Eighty to ninety percent of college students are sexually active (Certain, Harahan, Saewyc, & Fleming, 2009). Yet, research consistently demonstrates that around half of those sexually active college students report not using condoms during their previous sexual encounter (Patrick, Covin, Fulop, Calfas, & Lovato, 1997; Prince & Bernard, 1998). More recent research (American College Health Association [ACHA], 2007) indicates that condom use still occurs in only 52.1% of students' most recent vaginal intercourse episode. However, condom use dropped to 37.1% of vaginal intercourse episodes when students' primary concern was pregnancy prevention rather than prevention of transmission of sexual infections or diseases (ACHA, 2007). In the current study, condom use intention is conceptualized as an intention to engage in sexual intercourse where a condom is used (Helweg-Larsen & Collins, 1994), rather than as the intention to wear a condom—which restricts such intentions to males (since female condoms are not commonly used (Seal & Palmer-Seal, 1996)).

Serious health concerns associated with inconsistent condom use include unplanned pregnancy, sexually transmitted diseases/infections, and the transmission of HIV/AIDS (Stein, 1997). Even with a monogamous partner, the risk of unplanned pregnancy remains unchanged. In addition, around one-fifth of monogamous partners (17.6% of adult women; 23% of adult men) report sexual infidelity in monogamous relationships (Aral & Leichliter, 2010); such infidelity is just one reason that even monogamous sex still presents risks for sexually

transmitted diseases or infections. Thus, inconsistent condom use presents moderate to serious sexual risks for both monogamous and non-monogamous sexual activities.

Research on condom use demonstrates clear relationships between values and condom use behavior, as well as between communication and condom use. Communication about condom use positively predicts the use of condoms (Noar et al., 2006). In general, benevolence and universalism values are associated with consistent condom use (Chernoff & Davison, 1999) and the values of hedonism and power are associated with inconsistent condom use (Goodwin, Realo, Kwiatkowska, Kozlova, Luu, & Nizharadze, 2002). For example, Chernoff and Davison (1999) compared college students in terms of consistent and inconsistent condom use. Inconsistent condom users placed more importance on hedonistic values than did consistent condom users. In addition, consistent condom users placed greater importance on traditional values than did inconsistent condom users (Chernoff & Davison, 1999). Goodwin et al. (2002) looked at direct associations between values and condom use. They found that, for adults in Hungary, Poland, Russia, Georgia, and Estonia, inconsistent condom use was positively related to the values of power (r = .23), hedonism (r = .23), stimulation (r = .16), and achievement (r = .23) .15). Inconsistent condom use was negatively related to the values of universalism (r = -.26), benevolence (r = -.19), security (r = -.17), and tradition (r = -.13) (Goodwin et al., 2002).

Dieting

Dieting to lose weight is also a common health behavior reported by college students. Approximately half of all college students report a desire to lose weight (Wharton, Adams, & Hampl, 2008). Dieting is a weight loss strategy used by 34.5% of college students. Dieting to lose weight is more frequent among women (42.4%) than men (22.1%) (ACHA, 2007). In a different study, 83% of college women reported dieting to lose weight (Malinauskas, Raedeke,

Aeby, Smith, & Dallas, 2006). Another study found that 43.3% of college students hoping to lose weight did so through dieting; another 37.7% combined dieting and exercise (Wharton et al., 2008). Dieting may help prevent negative health outcomes associated with obesity, including diabetes, heart disease, hyptertension, and shorter life expectancy (Guh, Zhang, Bansback, Amarsi, Birmingham, & Anis, 2009). However, dieting may also lead to negative health outcomes such as weight cycling (Bacon & Aphramor, 2011), decreased self-esteem, or the development of an eating disorder (Field et al., 2003). Thus, dieting is associated with benefits and risks.

Dieting is also associated with communication and values. Interpersonal communication about weight loss is fairly frequent (Nichter, 2000) and can predict continuation of dieting practices (Dailey, Richards, & Romo, 2010). Additionally, a clear pattern of value-behavior relationships has been observed in research on values and restrictive eating; these findings can be reasonably extended to research on dieting. In general, the values of tradition and conformity are positively associated with dieting (Antoniazzi, Zivian, & Hynie, 2005), whereas hedonism is negatively related to maintaining a restrictive eating pattern, or diet (Bardi & Schwartz, 2003; Schwartz & Inbar-Saban, 1988). In a study of women with or without restrictive eating disorders, Antoniazzi et al. (2005) found that those who practiced severely restricted eating rated the values of conformity and tradition significantly higher than did the women without restricted eating patterns. Furthermore, women who did not practice restrictive eating rated the values of hedonism and stimulation higher than those who were restrictive eaters (Antoniazzi et al., 2005). In a related study, Schwartz and Inbar-Saban (1988) found that women who were unable to maintain a diet (i.e., the restrictive eating pattern) rated the value of hedonism higher than those who maintained a diet. Bardi and Schwartz (2003) also found that hedonism was positively

associated with a non-restrictive form of eating (i.e., overeating, or eating past the point of hunger).

Study Rationale

The literature reviewed here suggests that there are occurrences of value-expressive communication across health domains (Anderson, 2011a, 2011b; Arnold, 2005; Simunaniemi et al., 2008; Tardy, 2000) and that such communication is positively related to intention to enact a health behavior (Anderson, 2011a; Simunaniemi et al., 2008; Tardy & Hale, 1998). In addition, previous research indicates clear positive relationships between communication about the health behaviors in this study (i.e., moderate drinking, condom use, and dieting) and intentions to enact those behaviors (Dailey et al., 2010; Dorsey et al., 1999; Noar et al., 2006). Thus, this study predicts relationships between value-expressive communication and intentions to engage in moderate drinking, to use condoms, and to diet.

Before proceeding to the study predictions, one caveat about value-expressive communication in this study must be made. Clearly, value-expressive communication, as it is an interpersonal communication construct, may occur within any relational context. The nature of the relational context likely has some effect on one's willingness to value-expressively communicate and/or the topics about which one is willing to value-expressively communicate. Because this study is focused on understanding how value-expressive communication operates across health contexts, rather than across relationship contexts, this study will be limited to value-expressive communication between close friends. This choice was made because the sample for this study will be drawn from a college student population. And though college students may have significant others, and do maintain relational ties with their families, the majority of their health-related communication (especially covering the topics in this study)

occurs with close friends (Baxter et al., 2008). Thus, the hypotheses and research questions deal with the relationship between value-expressive communication with close friends and behavioral intentions across three health domains.

Rationale for Multiple Health Domains

Testing the predicted relationships across a variety of health domains will provide support for the generalizability of the theoretical predictions in different contexts. That is, the relationships between values, value-relevant involvement, value-expressive communication, and behavioral intentions should demonstrate a consistent pattern regardless of the health behavior. Consistent relationships observed among these variables will demonstrate that the observed relationships are a result of the relationships among these constructs rather than an artifact of the health context in which they are being studied. Thus, this study will provide additional evidence for the link between value-expressive communication and behavioral intentions, as it has only previously be studied in one health context: exercise. It will also provide evidence of the link between value-relevant involvement and value-expressive communication across three different health contexts.

As the literature above demonstrates, the health domains studied here differ in important and theoretically relevant ways. First, these health domains differ in terms of the values that are positively and negatively associated with them. Moderate drinking is positively associated with conformity and tradition (Dollinger & Kabayashi, 2003; Sheppard, 2011) and negatively associated with hedonism and stimulation (Cole et al., 2007; Goff & Goddard, 1999); condom use is positively associated with benevolence and universalism (Chernoff & Davison, 1999) and negatively associated with power and hedonism (Goodwin et al., 2002); dieting is positively

associated with tradition and conformity (Antoniazzi et al., 2005) and negatively associated with hedonism and stimulation (Schwartz, 2003; Schwartz & Inbar-Saban, 1988).

Knowing these positive and negative associations allows for specific predictions concerning negative relationships between value-relevant involvement and intention as well as value-expressive communication and intention. Previous research has demonstrated that valuerelevant involvement can be positively or negatively related to health behavioral intentions (Marshall et al., 2008), but the relevant values were not specified, so it is unclear why these differing relationships occurred. In contrast, the current research can provide predictions concerning the valence of the VRI-BI and VEC-BI relationships based on the relationships between the values and the behaviors.

This study argues that particular behaviors do not determine the directionality of the VRI-BI or VEC-BI relationship. Rather, it is the *nature of the relationship* between the behavior and personal values that drives the directionality of the VRI-BI and VEC-BI relationships. In other words, it is not that value-expressive communication has a positive relationship with some behaviors and a negative relationship with others. Rather, one must consider the nature of the values operating in that value-expressive communication. If the values support the behavior, value-expressive communication will relate positively to the behavior. For example, if a person values tradition (which is positively related to moderate drinking), then this person's valueexpressive communication about moderate drinking will be positively related to moderate drinking intentions. If the values oppose the behavior, value-expressive communication will relate negatively to the behavior. For example, if a person values hedonism (which is negatively related to moderate drinking) then this person's valueexpressive communication about moderate drinking will be positively related to moderate drinking intentions. If the values oppose the behavior, value-expressive communication will relate negatively to the behavior. For example, if a person values hedonism (which is negatively related to moderate drinking) then this person's value-expressive communication about moderate drinking will be negatively related to moderate drinking intentions. The same logic holds for the

relationship between value-relevant involvement and behavioral intention. Thus, testing across these domains allows for variance in the values that may be active in value-relevant involvement or expressed through value-expressive communication, and further allows one to observe whether these values-based predictions hold across behavioral domains.

Second, the health behaviors studied here may have different attributes. In a theoretical piece proposing the idea of behavioral attributes, Rimal, Lapinski, Turner, and Smith (2011) argue that behaviors can be understood in terms of attributes that characterize the behaviors. In essence, attributes describe the nature of the health behavior itself, rather than focusing on individuals' perceptions of the behavior. Using a behavioral attribute approach allows one to understand the similarities and differences between health behaviors in order to better understand how other variables relate to them. Rimal et al. (2011) propose three examples of behavioral attributes that are useful in the current study for explicating the differences between the three behaviors under consideration.

The first suggested behavioral attribute is whether the behavior is performed in public or private (Rimal et al., 2011). The behaviors in the current study vary in their level of privacy, as moderate drinking is typically performed in public social settings, whereas condom use occurs in private interactions. Dieting can also be considered a private behavior simply because restrictive eating patterns are often not readily identifiable as such in public settings (i.e., other people may not realize that a person's meal is low-carb and therefore part of a diet).

The second suggested behavioral attribute suggested by Rimal et al. (2011) is costs and benefits of the behavior. The behaviors in the current study vary in the types of costs and benefits associated with them, as well as the relative importance of the costs and benefits for each behavior. For example, both drinking and dieting have personal social rewards because drinking

is considered a social lubricant (Lederman, Stewart, Goodhart, & Laitman, 2003) and because dieting is believed to make one more attractive through weight loss (Putterman & Linden, 2004) thus conferring positive social attention. For many college students, the social benefits of drinking outweigh the potential for negative physical, legal, and relational outcomes associated with drinking (Lederman et al., 2003). Condom use is often associated with personal social costs because purchasing condoms and negotiating condom use can cause embarrassment (Moore, Dahl, Gorn, Weinberg, Park, & Jiang, 2008). In addition, the benefits and costs of condom use (e.g., prevention of pregnancy and disease transmission) are conferred on both the self and other (Goodwin et al., 2002; Moore et al., 2008; Rimal et al., 2011); whereas for drinking and dieting, the benefits and costs accrue only to oneself.

Rimal et al. (2011) offer a third potential behavioral attribute: the addictiveness of the behavior. Some behaviors are performed because the person has become addicted to the behavior, or the substance associated with the behavior (e.g., alcohol or drugs). Clearly, drinking—even in moderation—could have the attribute of addiction. Condom use is certainly not an addictive behavior. Dieting, or restrictive eating, can become a compulsive (though perhaps, not addictive) behavior, leading to the development of an eating disorder (Field et al., 2003). Indeed, as Rimal et al. (2011) point out, the key to understanding addition or dependency is that the behavior has progressed from voluntary to involuntary, i.e., compulsive behavior. Thus, dieting may be placed somewhere in the middle of the continuum from voluntary to involuntary, depending on the way an individual enacts that behavior.

Thus, the three health behaviors included in this study vary in terms of their attributes. Moderate drinking is a public, potentially addictive behavior associated with social rewards and potential health costs for the individual. Condom use is a private, non-addictive behavior

associated with social costs and health rewards for the individual and one's sexual partner. Dieting is a largely private, potentially addictive behavior associated with social rewards and health costs and rewards for the individual. In summary, comparing the health behaviors in the current study using only the three suggested attributes from Rimal et al. (2011) demonstrates that they each have unique attribute combinations and provide a representation of either end of each attribute continuum (e.g., public v. private). Finding significant VRI-BI and VEC-BI relationships across such varied domains will provide more robust support for these relationships, because the link will not be confounded with the health behavior or its attributes. Because the varied health domains are included to strengthen the generalizability of the theoretical findings, the hypotheses will be presented in terms of theoretical predictions, and then clarified with specific information for each health domain when necessary.

Rationale for Study Hypotheses and Research Questions

Hypotheses Concerning Values

Given previous research on the links between the behaviors in this study and higher order values from Schwartz et al.'s (2001) Portrait Values Questionnaire [PVQ], hypotheses about value-behavior relationships may be offered. The first several hypotheses replicate earlier research concerning value-behavioral intention relationships. Previous research suggests that intentions to engage in moderate drinking will be positively related to conformity and tradition values (Dollinger & Kabayashi, 2003; Sheppard, 2011), whereas they will be negatively related to hedonism and stimulation values (Cole et al., 2007; Goff & Goddard, 1999). Hence, the following hypotheses:

H1a: Conformity and tradition will be positively related to moderate drinking intention.H1b: Hedonism and stimulation will be negatively related to moderate drinking intention.
Previous research demonstrates that intentions to use condoms are positively related to the values of benevolence and universalism, whereas they are negatively related to hedonism and power (Chernoff & Davison; Goodwin et al., 2002). Hence the following hypotheses:

H2a: Benevolence and universalism will be positively related to condom use intention.

H2b: Hedonism and power will be negatively related to condom use intention. Finally, previous research demonstrates that restrictive eating is positively related to values of tradition and conformity (Antoniazzi, Zivian, & Hynie, 2005), whereas restrictive eating is negatively related to values of hedonism and stimulation (Bardi & Schwartz, 2003; Schwartz & Inbar-Saban, 1988). These findings can be extended to dieting intentions, because dieting is one form of restrictive eating (Field et al., 2003). Hence, the following hypotheses:

H3a: Tradition and conformity will be positively related to dieting intention.

H3b: Hedonism and stimulation will be negatively related to dieting intention.

The measurement of values in the sample provides data on the relative importance of each value to the sample, and also allows for predictions regarding how such values impact the relationships between other variables, as detailed below. In the current study, values that have been, in previous research, positively linked to the behavior will be said to "support" the behavior, whereas those that have been, in previous research, negatively linked to the behavior will be said to "oppose" the behavior.

Hypotheses Concerning Value-Relevant Involvement

Value-relevant involvement may be indicative of holding a value-expressive attitude, because value-relevant involvement refers to a motivational state in which one recognizes a link between one's attitudes and one's values (Johnson & Eagly, 1989). And, given that valueexpressive attitudes are those which join one's personal values with one's attitude (Katz, 1960),

it is reasonable to conclude that value-relevant involvement may indicate the holding of a valueexpressive attitude (Blankenship & Wegener, 2008: Maio & Olson, 1995; Watt, Maio, Haddock, & Johnson, 2008; Wiersema, van der Pligt, & van Harreveld, 2010). Value-expressive attitudes can be verbally expressed, and this expression is termed value-expressive communication (Anderson, 2011a). Such value-expressive communication is the communicative output of holding a value-expressive attitude, which is indicated by value-relevant involvement. Therefore, there should be a positive relationship between value-relevant involvement and value-expressive communication, across any behavioral domain. The following hypothesis expresses this relationship between value-relevant involvement and value-expressive attibehavioral domains in the current study (i.e., moderate drinking, condom use, and dieting):

H4: Value-relevant involvement will be positively related to value-expressive communication.

Value-relevant involvement is also related to behavioral intentions; though the relationship may be positive or negative (Marshall et al., 2008). Given the reviewed literature demonstrating positive and negative relationships between certain values and behaviors, it is reasonable to conclude that the direction and/or magnitude of the relationship between VRI and behavioral intention may be the result of the relationship between the behavior and the value operating in the state of value-relevant involvement. For supportive values, it is argued that supportive values will moderate the magnitude of the positive relationship between value-relevant involvement and behavioral intention, such that as ratings of supportive values increase, the magnitude of the positive relationship between the behavioral intentional intention will also increase. This relationship is specified in the hypothesis, and behavior-specific sub-hypotheses, below.

H5a: Ratings of supportive values will moderate the magnitude of the positive

relationship between value-relevant involvement and behavioral intentions.

Moderate drinking

1) Tradition will moderate the magnitude of the VRI-BI relationship, such that the positive relationship between value-relevant involvement and moderate drinking intention will increase in magnitude as ratings of Tradition increase.

2) Conformity will moderate the magnitude of the VRI-BI relationship, such that the positive relationship between value-relevant involvement and moderate drinking intention will increase in magnitude as ratings of Conformity increase.

Condom use:

3) Benevolence will moderate the magnitude of the VRI-BI relationship, such that the positive relationship between value-relevant involvement and condom use intention will increase in magnitude as ratings of Benevolence increase.

4) Universalism will moderate the magnitude of the VRI-BI relationship, such that the positive relationship between value-relevant involvement and condom use intention will increase in magnitude as ratings of Universalism increase.

Dieting:

5) Tradition will moderate the magnitude of the VRI-BI relationship, such that the positive relationship between value-relevant involvement and dieting intention will increase in magnitude as ratings of Tradition increase.

6) Conformity will moderate the magnitude of the VRI-BI relationship, such that the positive relationship between value-relevant involvement and dieting intention will increase in magnitude as ratings of Conformity increase.

However, if the relevant value opposes the behavior, it will moderate the direction of the

relationship between value-relevant involvement and behavioral intention, such that when

opposing values are rated highly, the VRI-BI relationship will be negative; whereas when the

opposing values are given low ratings, the VRI-BI relationship will be positive. This relationship

is specified in the hypothesis, and behavior-specific sub-hypotheses, below.

H5b: Ratings of opposing values will moderate the direction of the relationship between

value-relevant involvement and behavioral intention, such that at high levels of opposing

values, the VRI-BI relationship will be negative and at low levels of opposing values, the

VRI-BI relationship will be positive.

Moderate drinking:

1) Hedonism will moderate the direction of the relationship between valuerelevant involvement with moderate drinking and moderate drinking intentions, such that at high levels of Hedonism, the VRI-BI relationship will be negative, and at low levels of Hedonism, the VRI-BI relationship will be positive.

2) Stimulation will moderate the direction of the relationship between valuerelevant involvement with moderate drinking and moderate drinking intentions, such that at high levels of Stimulation, the VRI-BI relationship will be negative, and at low levels of Stimulation, the VRI-BI relationship will be positive.

Condom use:

3) Hedonism will moderate the direction of the relationship between valuerelevant involvement with condom use and condom use intentions, such that at high levels of Hedonism, the VRI-BI relationship will be negative, and at low levels of Hedonism, the VRI-BI relationship will be positive.

4) Power will moderate the direction of the relationship between value-relevant involvement with condom use and condom use intentions, such that at high levels of Power, the VRI-BI relationship will be negative, and at low levels of Power, the VRI-BI relationship will be positive.

Dieting:

5) Hedonism will moderate the direction of the relationship between valuerelevant involvement with dieting and dieting intentions, such that at high levels of Hedonism, the VRI-BI relationship will be negative, and at low levels of Hedonism, the VRI-BI relationship will be positive.

6) Stimulation will moderate the direction of the relationship between valuerelevant involvement with dieting and dieting intentions, such that at high levels of Stimulation, the VRI-BI relationship will be negative, and at low levels of Stimulation, the VRI-BI relationship will be positive.

Hypothesis Concerning Attitude

An attitude is a person's evaluation of a given object, person, event, or other aspect of a

person's world; it carries an evaluative component whereby a person considers an object to be

good or bad, positive or negative, and so on (Ajzen, 1985; Katz, 1960). People are inclined to

achieve and maintain consistency between their attitudes and behaviors (Fishbein & Ajzen,

1975). Indeed, meta-analyses support the positive attitude-behavior relationship (Glasman & Albarracin, 2006; Kim & Hunter, 1993), and such a relationship is posited for all behavioral domains in this study as well.

H6: Attitudes toward the behavior will be positively related to behavioral intentions.

Research Questions Concerning Value-Expressive Communication

Previous research indicates that value-expressive communication is positively related to behavioral intentions (Anderson, 2011a). Additional research supports the links between communication and behavior (Dorsey et al., 1999; Noar et al., 2006), between attitudes and behavior (Glasman & Albarracin, 2006; Kim & Hunter, 1993), and between values and behavior (Bardi & Schwartz, 2003). Because value-expressive communication combines communication, values, and attitudes, one must consider how a person's values and attitudes are related and how that relationship is expressed through communication.

Value-expressive communication can express personal values that support or oppose the behavior and positive or negative attitudes toward a behavior. This allows for four possible combinations of attitudes and values to occur within value-expressive communication. When values support the behavior, attitudes could be positive (option 1) or negative (option 2); when value oppose the behavior, attitudes could be positive (option 3) or negative (option 4). Because these interactive effects have never been suggested or tested, and the exact nature of these interactions is difficult to predict—especially in the cases of inconsistent values and attitudes (e.g., supportive values and negative attitudes), these potential relationships will be expressed as research questions rather than hypotheses. The first research question (followed by sub-questions specific to behavioral domains) deals with supportive values and positive or negative attitudes.

The second research question (followed by sub-questions specific to behavioral domains) deals

with opposing values and positive or negative attitudes.

RQ1: Will there be a three-way interaction between value-expressive communication,

attitudes, and supportive values that affects behavioral intentions?

A) Will value-expressive communication, attitudes, and tradition interact to affect intentions to drink in moderation?

B) Will value-expressive communication, attitudes, and conformity interact to affect intentions to drink in moderation?

C) Will value-expressive communication, attitudes, and benevolence interact to affect intentions to use condoms?

D) Will value-expressive communication, attitudes, and universalism interact to affect intentions to use condoms?

E) Will value-expressive communication, attitudes, and tradition interact to affect intentions to diet?

F) Will value-expressive communication, attitudes, and conformity interact to affect intentions to diet?

RQ2: Will there be a three-way interaction between value-expressive communication,

attitudes, and opposing values that affects behavioral intentions?

A) Will value-expressive communication, attitudes, and hedonism interact to affect intentions to drink in moderation?

B) Will value-expressive communication, attitudes, and stimulation interact to affect intentions to drink in moderation?

C) Will value-expressive communication, attitudes, and hedonism interact to affect intentions to use condoms?

D) Will value-expressive communication, attitudes, and power interact to affect intentions to use condoms?

E) Will value-expressive communication, attitudes, and hedonism interact to affect intentions to diet?

F) Will value-expressive communication, attitudes, and stimulation interact to affect intentions to diet?

Chapter 2: METHOD

Overview

A departmental participant pool was used to facilitate sampling from college students enrolled in Communication courses. Students were directed to an online survey that randomly assigned them to one of three surveys. Because this study tests theoretical predictions across three health domains (i.e., moderate drinking, condom use, and dieting), separate surveys were designed for each domain. Each survey contained the same measures, but the items were modified to correspond to each behavior. This chapter describes each of the measures used in the study, detailing the rationale and previously established psychometric properties of the scales. The next chapter provides an overview of the data analysis, including participant characteristics, psychometric properties of the scales, and associations between study variables.

Power Analysis

The planned number of participants per survey (N = 150 per survey; 450 participants total) was determined based on a power analysis, computed using G*Power 3.1 software. The power analysis assumed a desired power of .95 (based on .05 error probability) and an effect size of r = .35. This effect size is a conservative estimate based on effect sizes found in previous research for issue involvement (i.e., personal relevance) and behavioral intention (r = .37) (Quick, Scott, & Ledbetter, 2011), value-expressive communication and behavioral intention (r = .35) (Anderson, 2011a), and attitudes and behavioral intention (r = .52) (Glasman & Albarracin, 2006). The power analysis indicated that in order to achieve the desired power given previously established effect sizes, the sample size should be greater than or equal to 96 participants. However, since this study is also interested in observing (previously untested) interaction effects, which are more difficult to detect, a larger sample size was necessary. Thus, desired sample size for each survey was around 150 participants. The total desired sample size was therefore 450 participants. In total, N = 547 participants completed one of the three surveys for this study. Participant characteristics are discussed in the next chapter; a copy of the measure of demographics can be found in Appendix A.

Procedure

This study was approved by the institutional review board at Michigan State University. The online survey was built through Survey Monkey. Participants accessed the online survey through Experimetrix. The study was listed on the Experimetrix website, and the researcher contacted all instructors using the participant pool via e-mail and asked that the study be announced to their classes. The survey began with a consent form and proceeded to a page that randomly assigned participants to one of three surveys. Random assignment was monitored during data collection to ensure that the number of participants in each condition was not grossly uneven.

After random assignment to one of three behavioral domain conditions, participants answered demographic questions, followed by measures for the following variables in this order: personal values, value-relevant involvement, value-expressive communication, attitude (toward the specific health domain), and behavioral intention (for specific health behavior). Participants only provided responses for one health domain. Upon completion of the survey, participants were directed to another online survey—unconnected to their responses from the study survey where they entered their name and PID in order to receive credit for participation through Experimetrix. All students received .25 Experimetrix credits for participation in this study.

Measures

Personal Values

A modified version of the portrait values questionnaire (PVQ; Schwartz et al., 2001) was used to measure relevant values on each survey. This questionnaire was used for three reasons. First, this questionnaire is a more concrete form of value measurement than previous value measures, such as the Schwartz Value Survey (SVS, Schwartz, 1992), because it presents onesentence descriptions of individuals in terms of their important personal values, rather than asking participants to rate abstract values (Schwartz et al., 2001). Second, this questionnaire has the potential to be more reliable than the SVS, because unlike the SVS (Schwartz, 1992), which uses single item measures of values, the PVQ uses multiple items to measure each value. Third, the PVQ has been used in previous research on value-behavior relationships in the behavioral contexts of interest to this study; these studies observed significant value-behavior relationships and provided evidence for the scale's validity (Cole et al., 2008; Fotopoulos et al., 2011; Goodwin et al., 2002; Sheppard, 2011). A copy of this questionnaire can be found in Appendix B. All participants in each condition will complete measures of all values included in this study: hedonism, stimulation, conformity, tradition, benevolence, universalism, and power.

There is evidence for the reliability and validity of the PVQ measurement. In most cases, adequate, though varied, reliabilities have been observed for the subscales that will be used in the current study: conformity ($\alpha = .48 - .71$), tradition ($\alpha = .37 - .67$), benevolence ($\alpha = .61 - .71$), universalism ($\alpha = .57 - .79$), stimulation ($\alpha = .56 - .76$), power ($\alpha = .50 - .65$), and hedonism ($\alpha = .37 - .79$) Cole et al., 2007; Fotopoulos et al., 2011; Schwartz et al., 2001). Schwartz et al. (2001) tested the PVQ with samples from South Africa, Italy, Uganda, and Israel. They found that values as scored by the PVQ created similar value structure relationships to the previous value measurement (the Schwartz Value Scale (SVS: Schwartz, 1992). In addition, they tested value ratings on the PVQ against value ratings on the SVS using a multi-trait multi-method

model and found evidence of convergent and discriminant validity consistent with theoretical predictions (Schwartz et al., 2001). Thus, there is some evidence of scale reliability and validity.

However, the reliability of the subscales does vary considerably across studies, and this may be due to the nature of the measurement. Some subscales have relatively few (2 or 3) items, which can attenuate the reliability of the scales (Schmidt & Hunter, 1996). In addition, many of the items are double-barreled, assessing more than one construct at a time, and this may reduce reliability. Also, for the scales with fewer than three items, confirmatory factor analysis cannot be conducted, which inhibits tests of their validity. For these reasons, in the current study, the PVQ has been modified so that: a) each value is measured with at least four items and b) each item is single-barreled (i.e., measures only one construct).

Across surveys, the measures remained identical (i.e., they were not be altered based on the health context of the survey in which they appear)—with the exception of the change in gendered pronouns. The gendered pronouns increase the realism and concreteness of the measure, and they are therefore important to retain (Schwartz et al., 2001; Sheppard, 2011). Example items for each value on the female version of the measure include: "She thinks it is important that every person in the world be treated equally" (universalism), "It's very important to her to help the people around her" (benevolence), "She tries to follow the customs handed down by her religion or her family" (tradition), "She believes that people should do what they're told" (conformity), "It is important to her to get respect from others" (power), "Having a good time is important to her" (hedonism), "She is always looking for new things to do" (stimulation). The same items will be presented for males completing the survey, but the pronouns will be changed.

Thus, for each value, each participant responded to 4-6 items, on a scale from 1 (not at all like me) to 6 (very much like me). Again, this measure can be found in Appendix B. A centered mean score for each higher order value was calculated for each participant, based on the participants' item responses across all value scales. Thus, scores could potentially range from -5 to +5. Scores above zero indicate that the participant holds that value and scores below zero indicate that the person does not hold that value. The absolute value of the score (i.e., its distance from zero) indicates the relative strength with which the participant holds the value. A description of the calculation of this standardized score can be found in Appendix C.

Value-Relevant Involvement

Value-relevant involvement was measured using Cho and Boster's (2005) 7-item scale. The scale assesses the extent to which a person's position on an issue is determined or guided by his or her personal values. Participants provided responses on a Likert-type scale from 1 (strongly disagree) to 7 (strongly agree) in which higher scores indicate greater involvement. Participant scores may range from 1 to 7. The scale has had adequate reliability for measuring value-relevant involvement with social/political issues ($\alpha = .85 - .91$), consumer choices ($\alpha = .92$ – .96) (Cho & Boster, 2005) and health behaviors ($\alpha = .63 - .81$) (Marshall et al., 2008). In addition, both Marshall et al. (2008) and Cho and Boster (2005) found the value-relevant involvement scale to be unidimensional in each topical context.

Cho and Boster (2005) designed the instrument so that wording could be modified based on the involvement context. For example, even though the measure is conceptually similar across domains, Cho and Boster (2005) modified the wording of the items themselves based on whether the issue was a social/ideological issue (e.g., legalization of abortion) or a consumer choice/behavior (e.g., choice of jeans brand). For social/ideological issues, like abortion or the death penalty, Cho and Boster's (2005) items referred to involvement in terms of one's position on the issues. For behaviors, like wearing a certain brand of jeans, Cho and Boster's (2005) items referred to involvement with the behavior of wearing the jeans.

When measuring involvement with a health domain, both one's position on the issue (e.g., whether or not it is appropriate or acceptable to use condoms) and one's behaviors (e.g., whether or not one chooses to use condoms) are implicated. Thus, measurement of involvement with health behaviors combines the types of domains that Cho and Boster (2005) studied and should include both types of items developed by Cho and Boster (2005). Indeed, Marshall et al. (2008) took this approach and used a blend of items that assessed one's position on the issue as well as one's typical behaviors in that context. The same approach was used in the current study. Thus, for a behavior like moderate drinking, items included both, "The values that are most important to me determine whether or not I engage in moderate drinking" (behavior) and "My stance on drinking in moderation is based on the core principles that guide my life" (position). See Appendix D for the full measure.

Value-Expressive Communication

Value-expressive communication was measured with the 5-item value-expressive communication scale created in a previous study (Anderson, 2011a). The items measure the extent to which a person's communication about an attitude allows the person to express his or her personal values. Responses for the VEC scale are indicated on a Likert-type scale from 1 (strongly disagree) to 7 (strongly agree) with higher scores indicating greater VEC. Participant scores may range from 1 to 7. The scale was previously found to be reliable ($\alpha = .88$) and unidimensional (Anderson, 2011a). Each scale item refers to value-expressive communication with friends about a particular behavior, e.g., "What I say to my friends about _____ (health

behavior) is based on my personal values." Thus, for each survey, the scale was modified so that the relevant behavior is substituted in each item. See Appendix E for a copy of the measure.

Attitude toward Behavior

Attitudes were measured using bipolar adjective scales (range: 1 – 7) tapping both affective and instrumental components of attitude, based on the measurement suggested by Fishbein and Ajzen (1975) in the theory of reasoned action. There is debate concerning whether the affective and instrumental aspects should be measured as separate variables (Rhodes & Courneya, 2003) or as indicators of the higher-order construct of attitude (Hagger & Chatzisarantis, 2005). This study treats attitude as a global, higher-order construct that explains the covariance in both the instrumental and affective components. This approach has both theoretical (Ajzen, 1991) and empirical (Hagger & Chatzisarantis, 2005) precedence. For each behavior, the global measure of attitude will include both an affective an instrumental component. A copy of the measure can be found in Appendix F.

Measurement of attitudes using adjective pairs similar to the ones in this study have been found to be reliable for binge drinking ($\alpha = .81 - .94$) (Johnston & White, 2003; Norman, Armitage, & Quigley, 2007; Norman & Conner, 2006), condom use ($\alpha = .83 - .90$) (Kasprzyk, Montano, & Fishbein, 1998; Kraft, Rise, Sutton, & Røysamb, 2005; White, Terry, & Hogg, 1994), and dieting ($\alpha = .75 - .94$) (Armitage & Conner, 1999; Hagger, Anderson, Kyriakaki, & Darkings, 2007; Nejad, Wertheim, & Greenwood, 2005). Participant attitude scores may range from 1 to 7, with higher scores indicating a more positive attitude.

Behavioral Intention

Behavioral intentions refer to a person's plan or intention to enact a given behavior within a particular time frame. Measures of behavioral intention have been created for this study. They were modeled after work with the theory of reasoned action (Fishbein and Ajzen, 1975) and the theory of planned behavior (Ajzen, 1991), as well as previous work with moderate drinking (Dufour, 1999), condom use (Noar et al., 2006), and dieting (Antoniazzie et al., 2005). However, the psychometric properties of the scales are unknown. These measures included 4 items for each behavior that assessed the likelihood of performing the behavior within a specified time period following the survey. Participant attitude scores may range from 1 to 7, with higher scores indicating greater likelihood to perform the behavior. In addition, in each behavioral domain, participants responded to a single-item question asking whether the participant planned to engage in the behavior within a specified future time period. This question used a yes/no response format.

For moderate drinking, the items refer to intentions to engage in moderate drinking, or to avoid negative outcomes associated with excessive drinking. After reviewing the extensive variety in self-reporting measurement for moderate drinking, Dufour (1999) summarizes, and recommends measuring, moderate drinking as a level of alcohol consumption that is not taken to an extreme, and that allows one to avoid a "high risk of incurring negative consequences" (p. 13). Thus, both aspects of this behavior (moderating consumption and actively restraining behavior to avoid negative consequences) were included in this measure. The stem for these items is "In the next two weeks, how likely is it that you will..." and the response scale is from 1 (very unlikely) to 7 (very likely). An example item is "drink only in moderation (i.e., not drink excessively)." Scores may range from 1 to 7, with higher scores indicating a greater likelihood of behavioral intention. In addition, participants answered one item asking whether or not the participant plans to drink alcohol within the next two weeks. This allowed for non-drinkers to be

dropped from the analysis of moderate drinking intentions. A copy of the items can be found in Appendix G.

For condom use, the items refer to intentions for a condom to be used during the participant's first or next vaginal intercourse event in the next three months. This event is different from alcohol consumption in that a short time span for intention may not provide accurate responses (Albarracin, Johnson, Fishbein, & Muellerleile, 2001). Hence, following previous research (Albarracin et al., 2001; Sheeran & Orbell, 1998), the items measuring condom use intention refer to the "first or next" time one engages in vaginal intercourse over the next three months. By specifying first or next time that the participant has vaginal sex in the next three months, this scale allows for currently sexually inactive participants to provide a response concerning their condom use intentions should they plan to become sexually active in the next three months. In addition, participants answered one item asking whether or not the participant plans to engage in sex within the next three months. This will allow sexually inactive participants to be dropped from the analysis of condom use intentions.

Note that this study is limiting condom use behavior to heterosexual vaginal intercourse due to its prevalence and familiarity to participants. The items developed for condom use deal with the likelihood of engaging in behaviors that lead to vaginal sex where a condom is used. The stem for these questions is "The first or next time you have sex in the next three months, how likely is it that you will..." and the response scale ranges from 1 (very unlikely) to 7 (very likely). An example item is "require a condom be used for sex no matter what." Scores may range from 1 to 7, with higher scores indicating a greater likelihood of behavioral intention. A copy of the items can be found in Appendix G.

For dieting, the scale items refer to intentions to begin or continue to restrict one's diet in some way over the next two weeks in order to lose weight. Diet restrictions that are not implemented for weight loss (such as religious, allergic, or medical dietary restrictions) are conceptually and empirically distinct from weight-loss dieting attitudes and behaviors (Field et al., 2003) and were not included in the current study. Thus, the dieting intention items concern beginning or maintaining a low-calorie, low-fat, low-carb, or other restrictive diet for the purpose of losing weight. The stem for these questions is "In the next two weeks, how likely is it that you will..." and the response scale ranges from 1 (very unlikely) to 7 (very likely). An example item is "begin or maintain a low-calorie diet for the purpose of losing weight." Scores may range from 1 to 7, with higher scores indicating a greater likelihood of behavioral intention. A copy of the items can be found in Appendix G.

Self-Efficacy

Finally, self-efficacy in each behavioral domain was measured, so that it could serve as a potential covariate. Drawing from Bandura's (1977) work with and measurement recommendations (2006) for self-efficacy, but staying consistent with the response scales used for the rest of the study, self-efficacy for each behavior was assessed with three items. These items assessed the extent to which the participant felt confident in his or her ability to perform the behavior. An example item is "I am confident in my ability to drink in moderation." Scores may range from 1 to 7, with higher scores indicating a greater sense of self-efficacy. A copy of the items can be found in Appendix H.

Chapter 3: ANALYSIS

Pilot

In order to determine the validity and reliability of scales used in the current study, a pilot study was conducted. Data for the pilot study were also collected through an online survey using Survey Monkey. The pilot study included measures of values, attitudes toward behaviors, and behavioral intentions for all three behavioral domains. These measures were included in the pilot test because the measures for these constructs were either created or significantly modified for this study, so their psychometric properties were ambiguous. Demographic data were not collected during the pilot study, because it was used simply to test the psychometric properties of specific scales. The pilot study included N = 137 participants drawn from a communication course. In order to receive course credit for their participation, participants entered their first and last name on a separate survey unconnected to their survey responses. Pilot data collection was approved by the institutional review board. All scales included in the pilot test exhibited adequate reliability. Since all the scales exhibited adequate reliability, they were all retained for use in the full study. Table 1 presents the scale means, standard deviations, and reliabilities for all scales included in the pilot.

Present Study

Participants

In total, N = 547 participants completed one of the three surveys for this study. Overall, the mean age of the sample was 20.49 years (SD = 1.95 years). The majority of participants were female (62.5%). Most participants identified as White (76.9%); other participants also identified as Black (9.2%), Asian (7.0%), Hispanic (2.7%), Multiracial (2.9%), American Indian (.2%), or Other (1.1%). Most participants who selected "other" for their race indicated their racial identity as Middle Eastern. The full sample was comprised of 25% first year students, 20% sophomores, 22.9% juniors, 31.9% seniors, and .2% (n = 1) graduate student. Most participants (61.0%) lived off-campus; most (81.5%) were not affiliated with a Greek organization, and most (95.0%) were domestic students. The majority of the sample identified as Christian (69.8%), with other participants identifying as non-religious (22.3%), Jewish (4.0%), Muslim (1.3%), Buddhist (1.1%), Other-Religious (1.1%), and Hindu (.4%). The demographic properties of the subsamples in each condition were similar to those in the full sample. Table 2 presents the demographics for each condition.

As a check on the random assignment to conditions, chi-square tests were used to determine whether demographic variables were distributed similarly across conditions. Significant differences emerged for the distribution of participant sex, χ^2 (2, 547) = 9.85, *p* = .007. The proportion of males and females in condition 2 (condom use) differed significantly from the distribution in the other conditions. Specifically, the moderate drinking condition and the dieting condition had more females than males, but the condom use condition had essentially equivalent numbers of males and females. Since condom use is a behavior most potentially plagued by gender differences, this equity is not a concern for further analyses. Thus, no significant differences emerged with respect to demographic subsample characteristics after random assignment to conditions.

Analysis Overview

All study hypotheses were analyzed using multiple regression. Prior to conducting hypothesis tests, all data were cleaned and scaled items were tested for reliability and validity, as well as potential demographic covariates. Because the data collection required three different surveys in order to measure all study variables in each behavioral context, all data analyses were conducted using only the participants who responded to a given survey—rather than the entire sample. The only exception to this procedure occurred when testing the psychometric properties of the value scales, since all participants responded to all value scale items prior to exposure to any condition-specific measures and thus these responses could be combined to improve the statistical power of those tests.

Confirmatory Factor Analysis

Preliminary data analyses included checks for unidimensional scaling, reliable measures, and potential demographic variables that may serve as covariates. First, AMOS 19 was used to conduct confirmatory factor analysis on each scale with four or more items, in order to check for unidimensionality of the measures. The size of the factor loadings, inter-item correlations, and error terms were examined as evidence for model fit. Then, the following fit indices were also consulted: confirmatory fit index (CFI), root mean residual error (RMR), standardized root mean residual error (SRMR), and the chi-square test. As recommended by previous researchers (Bagozzi & Yi, 1988; Byrne, 2001; Hu & Bentler, 1999), decisions to retain measurement models were based on carefully scrutinizing all available evidence for model fit, rather than relying on one test or criterion. This means that, if for example, a significant chi-square statistic (indicating a poor model fit) occurred in a model where all other indicators of model fit (fit indices, factor loadings, inter-item correlations, and error terms) were acceptable, the decision for this model would be that the data fit a unidimensional model. Next, SPSS 20 was used to compute Cronbach's alpha coefficient for each scale with three or more items, in order to check for scale reliability. Means, standard deviations, reliabilities, and a list of items that were removed from each scale are presented in Table 3.

Values

Hedonism was measured with 4 items. The data were consistent with a unidimensional measurement model, using all 4 items; χ^2 (2, 539) = 5.56, *p* = .06, CFI = .99, RMR = .02, SRMR = .02 and the scale had adequate reliability, α = .78, SI α = .80. As in the pilot study, dropping item 2 (She/he likes to "spoil" herself/himself) improved the reliability of the scale, α = .818. However, the improvement is minimal, and dropping that item would not allow for tests of the dimensionality of the scale, so that item was retained. Hedonism scores were not significantly different across conditions, *F* (2, 506) = .37, *p* = .69.

Tradition was measured with 6 items. The data were not consistent with a unidimensional measurement model, using all 6 items; χ^2 (9, 535) = 510.79, p < .001, CFI = .49, RMR = .38, SRMR = .21; however, the scale exhibited reasonable reliability, α = .71, SI α = .72. But, based on the content of the items, item 1 (It is important to her/him to be humble.) and item 3 (She/he tries not to draw attention to herself/himself.) seemed to be conceptually distinct from the other items. In addition, these items exhibited inconsistent covariance with other items on the scale, and were thus thought to contribute to a lack of unidimensionality. Thus, these items were removed for a second test of the factor structure of this scale. The 4 item scale was consistent with a unidimensional measurement model, χ^2 (2, 538) = .80, p = .67, CFI = 1.00, RMR = .01, SRMR = .01, and the reliability was not compromised, α = .71, SI α = .70. Tradition scores were not significantly different across conditions, F (2, 506) = .22, p = .80.

Conformity was measured with 4 items. The data were consistent with a unidimensional measurement model, using all 4 items; χ^2 (2, 539) = 28.88, *p* = .000, CFI = .97, RMR = .05, SRMR = .03 and the scale was reliable, α = .83, SI α = .83. Conformity scores were not significantly different across conditions, *F* (2, 506) = .57, *p* = .57.

Stimulation was measured with 6 items. The data were consistent with a unidimensional measurement model, using all 6 items; χ^2 (9, 535) = 127.61, p < .001, CFI = .92, RMR = .05, SRMR = .04; however, the scale was reliable, $\alpha = .86$, SI $\alpha = .87$. But, based on the content of the items, item 1 (She/he likes surprises) seemed to be distinct from the other items, and this item was not as strongly correlated with other items, and had a low factor loading (.51) in comparison to other items on the scale. Dropping this item improved the fit of the measurement model, χ^2 (5, 535) = 109.17, p < .001, CFI = .93, RMR = .05, SRMR = .05; and improved the scale reliability, $\alpha = .87$, SI $\alpha = .88$. Stimulation scores were not significantly different across conditions, F (2, 506) = .81, p = .41.

Universalism was measured with 6 items. The data were not consistent with a unidimensional measurement model, using all 6 items; χ^2 (9, 535) = 828.04, *p* < .001, CFI = .59, RMR = .21, SRMR = .15; however, the scale was reliable, α = .84, SI α = .85. Upon inspection of the data, it appeared that items 5 (She/he strongly believes that people should care for nature.) and 6 (Looking after the environment is important to her/him.) were contributing to the lack of unidimensionality of this measure. The content was distinctly different from the remaining scale items, and the factor loadings of these items are quite low in comparison to the other items in the scale (.51 and .49, respectively). Dropping these items improved the fit of the measurement model, χ^2 (2, 540) = 114.34, *p* < .001, CFI = .90, RMR = .06, SRMR = .07; and improved the scale reliability, α = .85, SI α = .85. Universalism scores were not significantly different across conditions, *F* (2, 506) = .59, *p* = .59

Benevolence was measured with 4 items. The data were consistent with a unidimensional measurement model, using all 4 items; χ^2 (2, 544) = 38.69, *p* < .001, CFI = .97, RMR = .03,

SRMR = .04 and the scale was reliable, α = .89, SI α = .89. Benevolence scores were not significantly different across conditions, *F* (2, 506) = .86, *p* = .42.

Power was measured with 4 items. The data were consistent with a unidimensional measurement model, using all 4 items; χ^2 (2, 541) = 11.98, *p* = .002, CFI = .99, RMR = .04, SRMR = .04 and the scale was reliable, α = .75, SI α = .73. Power scores were not significantly different across conditions, *F* (2, 506) = 1.28, *p* = .28.

Value-Relevant Involvement

Value-relevant involvement was measured with 7 items, modified for each behavioral domain. For drinking in moderation, the data were not consistent with a unidimensional measurement model; χ^2 (14, 187) = 40.07, *p* < .000, CFI = .97, RMR = .11, SRMR = .04, although the scale was reliable, α = .87, SI α = .87. Item 7 (My beliefs about drinking in moderation have little to do with my beliefs about how life should be lived.) had low inter-item correlations and a low factor loading (.19). Items 2 (My stance on drinking in moderation is central to understanding the kind of person I am) and 3 (My position on moderate drinking is based on the values with which I try to conduct my life) were highly correlated with each other, but had low correlations with other items on the scale. These three items were removed, and the data were consistent with a unidimensional measurement model, χ^2 (2, 189) = 1.66, *p* = .44, CFI = 1.00, RMR = .03, SRMR = .01; the scale remained reliable, α = .85, SI α = .85.

For condom use, the data were not consistent with a unidimensional measurement model, using all 7 items; χ^2 (14, 172) = 31.50, p = .005, CFI = .98, RMR = .12, SRMR = .03, although the scale was reliable, α = .87, SI α = .88. Again, item 7 had low inter-item correlations and a low factor loading (.19), and items 2 and 3 were highly correlated with one another but not with

other scale items. Removing items 2, 3, and 7 improved the fit of the model and the data were consistent with a unidimensional factor structure, χ^2 (2, 176) = 5.24, *p* = .07, CFI = .99, RMR = .07, SRMR = .02, and the scale remained reliable, α = .84, SI α = .84.

For dieting, the data were again not consistent with a unidimensional measurement model, using all 7 items; χ^2 (14, 172) = 29.11, p = .01, CFI = .98, RMR = .09, SRMR = .04, although the scale was reliable, $\alpha = .85$, SI $\alpha = .85$. The same trend occurred for this behavioral context: item 7 had low inter-item correlations and a weak factor loading (.04), and items 2 and 3 were highly correlated with each other and no other items; these items were thus dropped. Once these items were removed, the scale was found to be unidimensional, χ^2 (2, 173) = 2.72, p = .26, CFI = .99, RMR = .04, SRMR = .02, and remained reliable, $\alpha = .85$, SI $\alpha = .85$.

Value-Expressive Communication

Value-expressive communication was measured with 5 items in each behavioral domain. For drinking in moderation, using all five items, the data were not consistent with a unidimensional measurement model; χ^2 (5, 189) = 38.44, *p* < .001, CFI = .95, RMR = .13, SRMR = .05, although the scale was reliable, α = .85, SI α = .85. Item 3, which was a reversecoded item (The things I say to my friends about (moderate drinking/condom use/dieting) have nothing to do with my personal values.) had low inter-item correlations and a weak factor loading (.21). Removing item 3 resulted in improved the fit of the model, χ^2 (2, 189) = 28.57, *p* = .000, CFI = .96, RMR = .11, SRMR = .04, and substantially improved the reliability of the scale, α = .92, SI α = .92. No other items seemed to be weak indicators of VEC for moderate drinking, dropping additional items did not improve the reliability of the scale, and dropping additional items would not allow for a test of the scale dimensionality. The data provide some support for a unidimensional factor structure and strong support for the reliability of the scale.

For condom use, using all five items, the data were not consistent with a unidimensional measurement model; χ^2 (5, 178) = 24.07, p = .000, CFI = .95, RMR = .12, SRMR = .05, although the scale was reliable, α = .83, SI α = .83. Again item 3 had low inter-item correlations and a weak factor loading (.31) and was removed for additional analysis. This improved the fit of the model, χ^2 (2, 178) = 14.67, p = .001, CFI = .97, RMR = .09, SRMR = .04, and improved the reliability of the scale, α = .88, SI α = .88. No other items seemed to be weak indicators of VEC for condom use, dropping additional items did not improve the reliability of the scale, and dropping additional items would not allow for a test of the scale dimensionality. The data provide some support for a unidimensional factor structure and strong support for the reliability of the scale.

For dieting, using all five items, the data were not consistent with a unidimensional measurement model; χ^2 (5, 178) = 61.60, p = .000, CFI = .89, RMR = .15, SRMR = .07, although the scale was reliable, α = .86, SI α = .86. Again item 3 had low inter-item correlations and a weak factor loading (.39). The model was re-analyzed without item 3. This improved the fit of the model, χ^2 (2, 178) = 46.71, p = .001, CFI = .91, RMR = .15, SRMR = .08, and improved the reliability of the scale, α = .89, SI α = .89. No other items seemed to be weak indicators of VEC for dieting, dropping additional items did not improve the reliability of the scale, and dropping additional items would not allow for a test of the scale dimensionality. The data provide some support for a unidimensional factor structure and strong support for the reliability of the scale.

In addition, a test of parallelism was conducted to determine the fit of correlations among items that were indicators of value-relevant involvement and value-expressive communication, to make sure that the items were loading most strongly on the appropriate variable. All factor loadings were strong, and residuals were smaller than what would be expected from sampling error (i.e., < .20). A correlation matrix showing all the relevant correlations, factor loadings, and residuals can be found in Table 4.

Attitude toward Behavior

Attitude toward the behavior was measured with 8 items. For moderate drinking, the data were not consistent with a unidimensional measurement model, using all 8 items, χ^2 (20, 180) = 117.17, p = .000, CFI = .92, RMR = .11, SRMR = .05, although the scale was reliable, $\alpha = .94$, SI $\alpha = .94$. Attending to the inter-item correlation matrix, it appeared that items 1 (useless—useful) and 2 (harmful—beneficial) were strongly correlated with each other, but not with the remainder of the scale items; in addition, items 4 (good—bad, recoded) and 8 (dislike—like) were plagued by weak inter-item correlations with all other items. Thus, a new model with only items 3, 5, 6, and 7 was tested. This model fit the data quite well, χ^2 (2, 182) = 4.31, p = .12, CFI = .99, RMR = .03, SRMR = .01, and the scale remained reliable, $\alpha = .91$, SI $\alpha = .91$.

For condom use, the data were not consistent with a unidimensional measurement model, using all 7 items; χ^2 (20, 169) = 212.85, *p* = .000, CFI = .81, RMR = .09, SRMR = .08, although the scale was reliable, α = .90, SI α = .92. Upon inspection of the correlation matrix, a similar pattern emerged as was found for attitudes toward moderate drinking. It appeared that items 1 and 2 were strongly correlated with each other, but not with the remainder of the scale items; in addition, items 4 and 8 were plagued by weak inter-item correlations. Thus, a new measurement

model was fitted using only items 3, 5, 6, and 7. This model fit the data very well, χ^2 (2, 172) = 4.39, p = .11, CFI = .99, RMR = .04, SRMR = .03, and the scale remained reliable, $\alpha = .84$, SI $\alpha = .86$.

For dieting, the data were not consistent with a unidimensional measurement model, using all 7 items; χ^2 (20, 171) = 69.31, p < .001, CFI = .97, RMR = .08, SRMR = .03, although the scale was reliable, $\alpha = .96$, SI $\alpha = .96$. Upon inspection of the correlation matrix, items 4 and 8 emerged with consistently low inter-item correlations, and items 5 (dumb—smart) and 6 (negative—positive) were more highly correlated with each other than any other items. Thus, a new measurement model was fitted using only items 1, 2, 3, and 7. This model fit the data very well, χ^2 (2, 175) = 1.42, p = .49, CFI = 1.00, RMR = .02, SRMR = .01, and the scale remained reliable, $\alpha = .93$, SI $\alpha = .93$.

Behavioral Intention

Behavioral intention was measured with four items. The data were not consistent with a unidimensional measurement model, using all 4 items; χ^2 (2, 169) = 69.31, p < .001, CFI = .69, RMR = .63, SRMR = .16, although the scale exhibited moderate reliability, α = .71, SI α = .71. Upon inspection of the correlation matrix, it appears that items 1 (Limit the amount of drinks you have in a given night) and 3 (Drink only in moderation (i.e., not drink excessively)) were more strongly correlated with each other (r (179) = .71, p < .001) than the other items. Likewise, items 2 (Refrain from drinking so much that you hurt yourself or get sick) and 4 (Keep yourself from drinking so much that you hurt others) were more strongly correlated with each other (r (170) = .61, p < .001) than with other items. This difference in relationships between the items makes sense based on the content of the items. Items 1 and 3 deal with engaging in a particular type of

behavior (i.e., moderate drinking), whereas items 2 and 4 deal with *avoiding* negative outcomes or consequences (i.e., protecting oneself and others from negative situations). Since items 1 and 3 are closest to the conceptualization of moderate drinking in this study, and correspond most closely to the other measures (i.e., VRI, VEC, ATT) dealing with moderate drinking (Fishbein & Ajzen, 1975), the measure of drinking intention used in these analyses will include items 1 and 3. Recall that items 1 and 3 are strongly correlated, r(179) = .71, p < .001.

Retaining all items for condom use, the data were consistent with a unidimensional measurement model, χ^2 (2, 166) = 27.71, p < .001, CFI = .97, RMR = .15, SRMR = .04, although the scale exhibited strong reliability, $\alpha = .93$, SI $\alpha = .93$. Dropping item 2 (Have a condom ready to use for sexual intercourse) slightly improves the reliability, $\alpha = .96$, SI $\alpha = .96$, but does not allow for a test of the unidimensionality of the scale. The data were reasonably consistent with a unidimensional factor structure and the full scale was highly reliable; therefore all 4 items were retained for use in analyses.

Retaining all items for dieting, the scale for intention to diet was unidimensional, χ^2 (2, 175) = 5.45, *p* = .07, CFI = .995, RMR = .04, SRMR = .01 and reliable, α = .96, SI α = .96. **Self-Efficacy**

Self-efficacy was measured with 3-items. Thus, the dimensionality of these measures cannot be assessed. However, all the measures were reliable; for drinking in moderation, $\alpha = .95$, SI $\alpha = .95$; condom use, $\alpha = .99$, SI $\alpha = .99$; and for dieting, $\alpha = .95$, SI $\alpha = .95$.

Determination of Covariates

The data were examined with respect to significant relationships among potential covariates (age, gender, race, year in school, major international student status, Greek status, religious affiliation, campus living situation, and self-efficacy) and all theoretical variables

(values, value-relevant involvement, value-expressive communication, attitude, and behavioral intention). Decisions about the inclusion of demographics as control variables were based on Tabachnick and Fidell's (1996) recommendations for inclusion of covariates. Correlations between all study variables (within a given survey condition) were calculated. For a full overview of these tests and results, see Appendix I.

Self-efficacy was positively related to value-expressive communication and behavioral intentions to drink moderately and to diet. Thus, self-efficacy was included as a covariate in analyses where value-expressive communication or behavioral intentions were outcome variables in either the moderate drinking or dieting conditions. Those who lived on campus reported greater value-expressive communication about moderate drinking and greater intentions to drink in moderation than those living off-campus. Thus, campus living situation was included as a covariate in analyses of value-expressive communication about drinking in moderation and intentions to drink in moderation. Those involved with Greek organizations reported weaker intentions to use condoms than those not involved in Greek organizations; thus, involvement with a Greek organization was included as a covariate in analyses of intentions to use condoms. Women reported greater intentions to drink in moderation, greater value-expressive communication about condoms, more positive attitudes toward condoms, more value-expressive communication about dieting, and greater intentions to diet. Thus, sex was included as a covariate for tests involving intentions to drink in moderation, value-expressive communication about condoms, value-expressive communication about dieting, and intentions to diet.

Correlations between Study Variables

Correlations between all values in the full sample can be found in Table 5. Table 6 provides correlations between values, VRI, VEC, attitudes, self-efficacy, and intentions for the

moderate drinking condition. Table 7 provides correlations between values, VRI, VEC, attitudes, self-efficacy, and intentions for the condom use condition. Table 8 provides correlations between values, VRI, VEC, attitudes, self-efficacy, and intentions for the dieting condition. In all three conditions, VRI was positively related to VEC, and VRI, VEC, and ATTs were all positively related to behavioral intentions. For those who planned to drink alcohol in the next two weeks, the values of tradition and conformity were positively related to intentions to drink in moderation; hedonism was negatively related to intentions to drink in moderation. The value of universalism was positively related to intentions to use a condom for those who planned to have sex in the next three months. No values were significantly related to dieting intentions.

Chapter 4: RESULTS

Values & Behaviors

Hypotheses 1a through 3b predicted relationships between certain values from the PVQ and certain health behaviors. For each of these hypotheses, hierarchical regression was used to determine the association between values and behavioral intentions, after including covariates specified in Chapter 3. Centered mean scores of predictor variables were used in all regression analyses. As specified in chapter two, analyses regarding intentions to drink in moderation included only those who planned to drink in the next two weeks. Likewise, analyses regarding intentions to use condoms during sex included only those who planned to have sex within the next three months. For dieting, all participants were included for intentions to diet.

Values & Moderate Drinking (H1a & H1b)

Hypotheses 1a and 1b dealt with the relationship between values and intentions to drink in moderation. Thus, for H1a and H1b, hierarchical regression was used. In the regression model, moderate drinking intention was regressed onto control variables (self-efficacy, campus living situation, and sex) in the first step, and then the values of hedonism, stimulation, conformity, and tradition in the second step. See Table 9 for results of these regressions.

H1a predicted that supportive values (i.e., conformity and tradition) would be positively related to moderate drinking intention. Neither conformity nor tradition had a significant direct effect on moderate drinking intentions for those who planned to drink. Thus, the data were not consistent with H1a. H1b predicted that opposing values (i.e., hedonism and stimulation) would be negatively related to moderate drinking intention. The value of hedonism had a significant direct effect on intention to drink in moderation, $\beta = -.25$, t (99) = -2.49, p = .02, such that as ratings of hedonism increased, intentions to drink in moderation decreased. However, stimulation

did not have a significant direct effect on intention to drink in moderation. The data were consistent with the predicted relationship (in H1b) between hedonism and moderate drinking intention; however the data were not consistent with the predicted relationship (in H1b) between stimulation and moderate drinking intention.

Values & Condom Use (H2a & H2b)

Hypotheses 2a and 2b dealt with the relationship between values and intentions to use a condom during sex. Thus, for H2a and H2b, hierarchical regression was used. In the regression model, condom use intention was regressed onto Greek status (the covariate) in the first step, and then the values of universalism, benevolence, hedonism, and power in the second step. See Table 10 for results of these regressions.

H2a predicted that supportive values (i.e., universalism and benevolence) would be positively related to condom use intention. H2b predicted that opposing values (i.e., hedonism and power) would be negatively related to intentions to use condoms. There was a significant direct effect for universalism on intentions to use a condom, $\beta = .24$, t (120) = 2.38, p = .02, such that as ratings of universalism increased, intentions to use a condom increased. However, there was not a significant direct effect for benevolence on intentions to use a condom. There were no direct effects for opposing values on intentions to use condoms. Thus, the data were consistent with the predicted relationship (in H2a) between universalism and condom use intention; however the data were not consistent with the predicted relationship (in H2a) between benevolence and condom use intention. Additionally, the data were not consistent with H2b.

Values & Dieting (H3a & H3b)

Hypotheses 3a and 3b dealt with the relationship between values and intentions to diet. Thus, for H3a and H3b, hierarchical regression was used. In the regression model, dieting intention was regressed onto the control variables (self-efficacy and sex) in the first step, and then the values of tradition, conformity, stimulation, and hedonism in the second step. All participants in the dieting condition were included in this regression model. See Table 11 for results of these regressions.

H3a predicted that supportive values (i.e., tradition and conformity) would be positively related to condom use intention. This hypothesis was not supported. Neither tradition nor conformity was a significant predictor of dieting intentions. H3b predicted that opposing values (i.e., stimulation and hedonism) would be negatively related to intentions to diet. The data were not consistent with this hypothesis. Neither stimulation nor hedonism was significantly associated with dieting intentions.

Value-Relevant Involvement & Value-Expressive Communication

Hypothesis 4 predicted a positive relationship between value-relevant involvement (VRI) and value-expressive communication (VEC). Recall that measures of VEC in all three domains referred to communication with close friends. In order to test this hypothesis, hierarchical regression was used to determine the association between value-relevant involvement and valueexpressive communication, after including the covariates specified in Chapter 3.

H4 was supported for drinking in moderation, condom use, and dieting. After controlling for self-efficacy, campus living situation, and sex, VRI explained an additional 47% of variance in VEC about drinking in moderation, $\beta = .71$, t (150) = 12.17, p < .001. As value-relevant involvement with drinking moderation increased, so too did value-expressive communication about drinking in moderation. See Table 12 for regression results. After controlling for Greek status and sex, VRI explained an additional 49% of variance in VEC beyond the control variables, $\beta = .70$, t (173) = 13.17, p < .001. That is, as value-relevant involvement with condom

use during sex increased, value-expressive communication about condom use also increased. See Table 13 for regression results. Finally, after controlling for self-efficacy and sex, VRI explained an additional 22% of variance in VEC about dieting, $\beta = .50$, t (148) = 6.82, p < .001. As value-relevant involvement with dieting increased, value-expressive communication about dieting also increased. See Table 14 for regression results.

Value-Relevant Involvement, Values, & Behavior

Hypothesis 5a predicted a positive relationship between value-relevant involvement (VRI) and behavioral intentions (BI) when VRI interacts with a supportive value; H5b predicted a negative relationship between VRI and BI when VRI interacts with an opposing value. To test this hypothesis, a separate set of regression models were tested for each behavioral domain. Within a behavioral domain, four regression models were tested—two for supporting values and two for opposing values. Again, all predictor variables in the regression models were meancentered. And, since these analyses deal with behavioral intention, only those who reported they plan to drink were included for H5a1, H5b1, H5a2, and H5b2; only those who reported that they plan to have sex were included for H5a3, H5b3, H5a4, and H5b4.

Moderate Drinking, VRI & Values (H5a1, H5a2, H5b1, H5b2)

This set of hypotheses predicted that supporting values (tradition and conformity) would moderate the magnitude of the positive VRI-BI relationship for moderate drinking; while opposing values (hedonism and stimulation) would interact with VRI to produce a negative VRI-BI relationship. Hierarchical regression was used to test these predictions. Control variables (self-efficacy, campus living status, sex) were entered in step 1; tradition, conformity, stimulation, hedonism, and VRI were entered in step 2; and the VRI x TRAD, VRI x CONF, VRI x HED, or VRI x STIM interaction term was entered into the third step. See Table 15 for results of these regressions.

There was a significant direct effect for value-relevant involvement, $\beta = .38$, t (99) = 4.17, p < .001, such that as value-relevant involvement with moderate drinking increased, so did intentions to drink in moderation. The value of hedonism also had a significant direct effect on intentions, $\beta = -.18$, t (99) = -1.98, p = .05, such that as ratings of hedonism increased, intentions to drink in moderation decreased. However, the interaction terms (VRI x TRAD, VRI x CONF, VRI x HED, and VRI x STIM) were not significant. Therefore, the data were not consistent with H5a1 H5a2, H5b1, or H5b2.

Condom Use, VRI, & Values (H5a3, H5a4, H5b3, H5b4)

This set of hypotheses predicted that supporting values (universalism and benevolence) would moderate the magnitude of the positive VRI-BI relationship for condom use; while opposing values (hedonism and power) would interact with VRI to produce a negative VRI-BI relationship. A hierarchical regression was used to test this prediction. The control variable (Greek status) was entered in step 1; universalism, benevolence, hedonism, power, and VRI were entered in step 2; and the VRI x UNIV, VRI x BEN, VRI x HED, or VRI x PWR interaction term was entered into the third step. See Table 16 for results of this regression.

There was a significant direct effect for value-relevant involvement, $\beta = .44$, t (120) = 5.67, p < .001, such that as value-relevant involvement with condom use increased, so did intentions to use a condom during sex. The value of universalism also had a significant direct effect on intentions, $\beta = .23$, t (120) = 2.55, p = .01, such that as ratings of universalism increased, so did intentions to use a condom during sex. However, the interaction terms (VRI x

UNIV, VRI x BEN, VRI x HED, and VRI x PWR) were not significant. Therefore, the data were not consistent with H5a3, H5a4, H5b3, or H5b4.

Dieting, VRI, & Values (H5a5, H5a6, H5b5, H5b6)

This set of hypotheses predicted that supporting values (tradition and conformity) would moderate the magnitude of the positive VRI-BI relationship for dieting; while opposing values (hedonism and stimulation) would interact with VRI to produce a negative VRI-BI relationship. Hierarchical regression was used to test these predictions. Control variables (self-efficacy, sex) were entered in step 1; tradition, conformity, stimulation, hedonism, and VRI were entered in step 2; and the VRI x TRAD, VRI x CONF, VRI x HED, or VRI x STIM interaction term was entered into the third step. See Table 17 for results of these regressions.

There was a significant direct effect for VRI, $\beta = .29$, t (134) = 3.84, p < .001, such that as ratings of value-relevant involvement with dieting increased, so did intentions to diet. However, the interaction terms (VRI x TRAD, VRI x CONF, VRI x HED, and VRI x STIM) were not significant. The data were not consistent with H5a5, H5a6, H5b5, or H5b6.

Attitudes & Behaviors

Hypothesis 6 predicted that attitude would be positively related to behavioral intention in each behavioral domain. To test this prediction, behavioral intention was regressed onto control variables in step one, then attitudes in step two. Separate regressions were used for each behavioral domain. Again, for drinking in moderation, only those who planned to drink in the next two weeks were included in the analyses; for condom use, only those who planned to have sex in the next three months were included; all participants were included in the dieting condition.

The data were consistent with H6 in all behavioral domains; attitudes were positive predictors of intentions to drink in moderation, use condoms, and diet. After controlling for self-efficacy, campus living situation, and sex, attitude attitudes explained an additional 3.8% of variance in moderate drinking intentions beyond the control variables, $\beta = .19$, t (101) = 2.22, p = .03. See Table 18 for regression results. After controlling for Greek status, attitude explained an additional 24% of variance in intentions to use condoms, $\beta = .50$, t (121) = 6.55, p < .001. See Table 19 for regression results. After controlling for self-efficacy and sex, attitude explained an additional 11.5% of variance in intentions to diet, $\beta = .37$, t (148) = 5.22, p < .001. See Table 20 for regression results.

Value-Expressive Communication, Attitudes, & Personal Values

The research questions in this study probe the potential for three-way interactions between value-expressive communication, attitudes, and personal values. RQ1 deals with potential interaction between VEC, attitudes, and supportive values. RQ2 deals with the potential interaction between VEC, attitudes, and opposing values. To answer these research questions, four regression models were tested—two for supporting values and two for opposing values within each behavioral domain. Again, all predictor variables in the regression models were mean-centered. And, since these analyses deal with behavioral intention, only those who plan to drink were included for RQa1, RQb1, RQa2, and RQb2; only those who plan to have sex were included for RQa3, RQb3, RQa4, and RQb4.

Moderate Drinking, VEC, Values, & Attitudes (RQ1a, RQ1b, RQ2a, RQ2b)

This set of research questions asked whether there would be a three-way interaction between value-expressive communication, attitudes, and personal values (tradition, conformity, hedonism, and stimulation) that would affect intentions to drink in moderation. In step 1, control
variables (self-efficacy, campus living situation, and sex) were entered; in step 2, VEC, ATT, TRAD, CONF, HED, and STIM were entered; in step 3, the appropriate 2-way interactions (VEC x ATT, ATT x TRAD/CONF/HED/STIM, VEC x TRAD/CONF/HED/STIM) were entered; in step 4, the 3-way interaction (VEC x ATT x TRAD/CONF/HED/STIM) was entered. There was a significant direct effect for VEC, such that intentions to drink in moderation increased as VEC with close friends about moderate drinking increased, $\beta = .39$, *t* (93) = 4.51, *p* < .001. No other effects were significant. Thus, none of the three-way interactions (VEC x ATT x TRAD, VEC x ATT x CONF, VEC x ATT x HED, or VEC x ATT x STIM) was significant in this context. See Table 21 for results.

Condom Use (RQ1c, RQ1d, RQ2c, & RQ2d)

This set of research questions asked whether there would be a three-way interaction between value-expressive communication, attitudes, and personal values (benevolence, universalism, hedonism, and power) that would affect intentions to use condoms during sex. In step 1, the control variable (Greek status) was entered; in step 2, VEC, ATT, BEN, UNIV, HED, and PWR were entered; in step 3, the appropriate 2-way interactions (VEC x ATT, ATT x BEN/UNIV/HED/PWR, VEC x BEN/UNIV/HED/PWR) were entered; in step 4, the 3-way interaction (VEC x ATT x BEN/UNIV/HED/PWR) was entered. There was a direct effect for attitudes, $\beta = .43$, t (115) = 4.83, p < .001. However, no other effects were significant. The threeway interactions (VEC x ATT x BEN, VEC x ATT x UNIV, VEC x ATT x HED, or VEC x ATT x PWR) were not significant in this context. See Table 22 for results.

Dieting (RQ1e & RQ1f, RQ2e, & RQ2f)

This set of research questions asked whether there would be a three-way interaction between value-expressive communication, attitudes, and personal values (tradition, conformity, hedonism, and stimulation) that would affect intentions dieting. In step 1, the control variables (self-efficacy and sex) were entered; in step 2, VEC, ATT, TRAD, CONF, HED, and STIM were entered; in step 3, the appropriate 2-way interactions (VEC x ATT, ATT x

TRAD/CONF/HED/STIM, VEC x TRAD/CONF/HED/STIM) were entered; in step 4, the 3-way interaction (VEC x ATT x TRAD/CONF/HED/STIM) was entered. There was a direct effect for attitude, $\beta = .33$, t (136) = 4.28, p < .001. No other effects were significant. No three-way interaction (VEC x ATT x TRAD, VEC x ATT x CONF, VEC x ATT x HED, or VEC x ATT x STIM) was significant in this context. See Table 23 for results.

Chow Test for Equivalence between Coefficients

Two sets of regression models were significant across all three conditions: VRI \rightarrow VEC and VRI \rightarrow BI. Thus, the Chow test (Chow, 1960) was used to compare the significant coefficients across these models to determine whether value-relevant involvement explained significantly more variance in value-expressive communication or behavioral intention in any particular condition. For behavioral intentions, VRI explained significantly more variance in intentions to drink in moderation than intentions to diet, F(3, 337) = 45.49, p < .001. In addition, VRI explained significantly more variance in intentions to use condoms than intentions to diet, F(3, 328) = 26.94, p < .001. When the moderate drinking and condom use conditions were compared, the VRI coefficients were not significantly different, F(3, 337) = .003, p = .99. For value-expressive communication, VRI explained significantly more variance in VEC for moderate drinking than for dieting, F(3, 354) = 3.32, p = .02. When comparing the moderate drinking and condom use condition, the VRI coefficients were not significantly different, F(3, 357) = 1.24, p = .29. When comparing the condom use and dieting condition, again the VRI coefficients were not significantly different, F(3, 357) = .72, p = .54.

Chapter 5: DISCUSSION

This study tested the relationship between values, value-relevant involvement, valueexpressive communication with close friends, attitudes, and behavioral intentions across three health domains (moderate drinking, condom use, and dieting to lose weight). This study focuses on further understanding value-expressive communication, which is the verbal expression of one's values through communication about an attitude (Anderson, 2011b), or the verbalization of a value-expressive attitude. Value-expressive attitudes link values with attitudes (Katz, 1960). This study posited that value-relevant involvement (the cognitive state of involvement with an issue due to its link to personal values (Cho & Boster, 2005; Johnson & Eagly, 1989)) should be positively associated with value-expressive communication.

Personal values (Schwartz, 1992) are central to both value-relevant involvement and value-expressive communication, but previous research has not examined how personal values may operate in VRI-BI or VEC-BI relationships. Thus, this study posed hypotheses and research questions concerning the potential for personal value ratings to moderate the magnitude and direction of the relationship between VRI and BI or between VEC and BI. In brief, values that have been positively associated with behaviors are supportive values and may moderate the magnitude of positive VRI-BI or VEC-BI relationships. Values that have been negatively associated with behaviors are opposing values and may moderate the direction of positive VRI-BI or VEC-BI relationships. Values that have been negatively associated with behaviors are opposing values and may moderate the direction of positive VRI-BI or VEC-BI relationships. The following sections provide an interpretation of the results, directions for future research, and a discussion of the study limitations.

Personal Values

Many of the findings in this study concerning the relationship between personal values and behavioral intentions were consistent with previous literature. First, many values were

correlated with intentions in ways that were consistent with previous research. Moderate drinking intention was positively associated with tradition and conformity and negatively correlated with hedonism. These findings were consistent with previous research that examined the relationship between personal values and drinking intentions (Cole et al., 2007; Dollinger & Kabayashi, 2003; Goff & Goddard, 1999; Sheppard, 2011). Condom use intention was positively associated with universalism; this, too, was consistent with previous research using correlations to examine relationships between safer sex behavior and personal values (Chernoff & Davison, 1999; Goodwin et al., 2002). However, intentions to diet were not associated with any personal values; this is inconsistent with previous research on restrictive eating patterns and personal values (Antoniazzi et al., 2005; Bardi & Schwartz, 2003).

Second, the relationships between the values were consistent with Schwartz's (1992) circumplex model. That is, positive relationships were observed between the relevant adjacent value pairs of tradition and conformity, hedonism and stimulation, universalism and benevolence, and power and hedonism. And negative relationships were observed between the relevant opposing value pairs: hedonism was negatively correlated with tradition, conformity, universalism, and benevolence; stimulation was negatively correlated with tradition and conformity; and power was negatively correlated with universalism and benevolence. In this way, the data were consistent with previous research examining these higher order values (Schwartz et al., 2001) and demonstrate that the positive and negative value-intention relationships proposed in this study were justified.

Third, the two observed direct effects of values on behavioral intentions were also consistent with previous literature. The value of hedonism had a direct negative effect on intentions to drink in moderation, and the value of universalism had a direct positive effect on

intentions to use condoms during sex. These findings are consistent with previous research that used regression to establish direct value-behavior or value-intention relationships in these behavioral domains (Cole et al., 2007; Goodwin et al., 2002). This study predicted direct effects for four values on each behavioral intention (i.e., 12 direct effects), but only two direct effects were observed. At first glance, this suggests that the current study results are quite discrepant from previous research. However, most previous studies of value-behavior relationships also observed *some but not all* of these value-behavior relationships within a single sample (Antoniazzi et al., 2005; Bardi & Schwartz, 2003; Chernoff & Davison, 1999; Cole et al., 2007; Goff & Goddard, 1999). This suggests that, while there is a theoretical argument for each of these values being related to each of these behaviors (Bardi & Schwartz, 2003; Schwartz et al., 2001), this relationship is not always observed for all values and behaviors in every sample.

The findings of this study suggest opportunities for refining future research on personal values and behavioral intentions. First, future studies should replicate the analyses completed in the current study, rather than relying on correlational analyses. Using regression to test the value-behavior relationship allows a researcher to control for potential covariates and to simultaneously observe the separate effects of multiple values on behavioral intentions. Second, since there is a theoretical argument for multiple values to be related to behaviors but previous research often does not observe distinct effects of individual values when using regression, future studies may wish to use value-clusters rather than individual values as predictors in these regression models. At least one study has previously used this value-cluster approach to understand the effect of values on behaviors. Chernoff and Davison (1999) used exploratory factor analysis to see how certain values clustered together, then observed which value clusters were associated with differences in reported behavior, and used those value clusters as predictors in regression

analyses. Using this procedure, Chernoff and Davison (1999) found that the cluster of "an exciting life" (p. 463) explained a significant amount of variance in condom use for vaginal sex. Thus, the use of value-clusters may be a viable option for future research on value-behavior relationships.

Value-Relevant Involvement

Consistent with previous research (Marshall et al., 2008), value-relevant involvement had positive direct effects on all behavioral intentions in this study. As value-relevant involvement with the behavior increased, moderate drinking, condom use, and dieting intentions also increased. Value-relevant involvement was also significantly different across these behaviors, with VRI being strongest for moderate drinking, then condom use, and finally dieting. Yet, value-relevant involvement did not interact with specific values to impact behavioral intentions as predicted in the hypotheses. This finding may be because value-relevant involvement may interact with clusters of values rather than individual values or because values may not significantly interact with value-relevant involvement unless they are first activated, or experimentally manipulated. Each of these issues will be taken up in turn below.

The role of personal values in value-relevant involvement may be more complex and sophisticated than what was suggested by the analytical procedures in this study. For example, VRI, as conceptualized and operationalized in the current study, likely incorporates a cluster, or constellation (Ostrom & Brock, 1968), of values rather than only one key value. However, in the current study, only interactions between one value and VRI were tested; thus, it was only possible to observe the effects of one value interacting with VRI, rather than the interaction between VRI and a cluster of values. To utilize a value-cluster approach, one may use exploratory factor analysis to see how values cluster together (e.g., Chernoff & Davison, 1999)

or one could use Schwartz's (1992) circumplex model to determine *a priori* how values should cluster together theoretically, and test for second-order unidimensionality of those value clusters. A second-order unidimensional measurement model would allow the researcher to test the relationship between behaviors and value quadrants that represent a cluster of underlying higher-order values (e.g., Chernoff & Davison, 1999). This could provide a more realistic (although less precise) picture of the ways that values operate in values-based constructs such as value-relevant involvement or value-expressive communication.

Conversely, the conceptualization and operationalization of value-relevant involvement, and value-expressive communication, could be specified more precisely so that each of those constructs taps into only one value at a time. In other words, given background information on values that are important to the sample and relevant to the behavior, measures of VRI and VEC could stipulate a particular value that may be operating in those constructs. In this way, there would be a closer match between the way that values and value-based constructs are measured, and this may improve the ability to detect interactions between values and value-based constructs.

Another way that the value-VRI interaction might be more complex than suggested in this study is that such an interaction may be more likely to occur under conditions where the value is activated. Similar to work with attitude activation and accessibility (Fazio, 1995; Roskos-Ewoldsen & Fazio, 1992), previous research has suggested that values can be activated and that such activated values are more predictive behavioral intentions than non-activated values. For example, Maio and Olson (1995) found that the value of altruism was predictive of organ donation intentions when it was made salient to participants, but not in the non-activated condition. Maio et al. (2001) found that intentions to donate time to charity were greater in the condition where values were made salient than in the condition where they were not. VerPlanken and Holland (2002) found that when values were activated and central to the self, environmentally friendly consumer choices were more congruent with values. Similarly, it may be that, in order to observe an interactive effect between involvement and values, participants' relevant values would first need to be activated through an experimental manipulation. Such value-activation would likely increase the influence of values on behavioral intentions, and thus might improve the ability to detect significant interactions between values and involvement, as well as values, attitudes, and communication.

Value-Expressive Communication

This study provides support for the conceptualization and operationalization of valueexpressive communication developed in previous research (Anderson, 2011a). The measure of value-expressive communication in close friendships was found to be valid and reliable across all three health domains. In terms of study predictions, value-expressive communication was significantly related to value-relevant involvement in all three behavioral domains, but did not significantly interact with personal values and attitudes to affect behavioral intentions in any domain. However, value-expressive communication did have a direct effect on intentions to drink in moderation. Additionally, post-hoc analyses revealed some individual differences in reported value-expressive communication. These findings are all discussed in turn.

Value-Expressive Communication and Value-Relevant Involvement

The findings of this study support the central theoretical argument of this study: that value-relevant involvement is related to value-expressive communication. In order to make this claim, it was first necessary to provide evidence that the two scales measured distinct constructs. The scale items exhibited face validity when examined in concert with the conceptual definitions

of the constructs. Confirmatory factor analysis provided evidence that the measures of valuerelevant involvement and value-expressive communication were both internally consistent and parallel (i.e., measuring distinct constructs). In addition, value-relevant involvement had a positive direct effect on value-expressive communication for all behaviors in this study. That is, as value-relevant involvement with the health behavior increased, value-expressive communication about that behavior also increased.

This finding supports the main argument of this study: that a) value-expressive communication is the verbalization of an attitude in terms of one's values, b) value-relevant involvement indicates the holding of an attitude linked to one's values, and thus c) value-relevant involvement and value-expressive communication should be positively related to one another. The results from this study support the logic of this argument and provide support for the conceptual foundation of the relatively new construct of value-expressive communication, because they show that as the cognitive link between one's attitudes and values grows stronger (i.e., VRI increases) so too does one's proclivity to verbalize one's attitudes in way that demonstrates one's values (i.e., VEC increases). Thus, the results demonstrate that VEC (both conceptually and empirically) is tapping into the verbalization of a cognitive link between attitudes and values. That is, VEC verbalizes a value-expressive attitude (Katz, 1960), or verbalizes the cognitive state of value-relevant involvement.

Because this was a cross-sectional study, it cannot be determined whether VRI precedes VEC or VEC precedes VRI. In other words, do thoughts precede communication or does communication shape thoughts? This question is one that has been pondered by scholars for many decades, and there is great debate still (e.g., Bloom & Keil, 2001; Carroll, 1956; Hespos & Spelke, 2004; Kay & Kempton, 1984; Pinker, 1994). Indeed, the direction of influence can go

both ways. This type of reciprocal relationship probably also occurs with value-relevant involvement (i.e., thought) and value-expressive communication (i.e., speech).

Future research on VEC and VRI should examine the two competing causal models. The two competing models are VRI \rightarrow VEC \rightarrow BI and VEC \rightarrow VRI \rightarrow BI. An experimental study could vary the order in which value-relevant involvement or value-expressive communication is activated and then observe the effects on behavioral intention. Previous studies have manipulated value-relevant involvement by making values and their connection to the relevant issue more salient for participants. Sometimes this manipulation simply involves asking the participants to draw a line from the message to the relevant value (Ostrom & Brock, 1968, 1969). More sophisticated techniques combine Ostrom and Brock's value connection task with additional manipulations designed to increase the *centrality* of the value to a particular topic. For example, Nichols and Johnson (1997) also asked participants to rate the extent to which a given value was appropriate to the topic.

A series of studies by VerPlanken and Holland (2002) suggest a variety of successful value-activation techniques. In two studies, they primed relevant values by describing a fictitious person who exhibited all the key values of interest in the study. In the value-prime conditions, behavioral intention was more value-congruent. In another study, they only included participants who had (a week prior) scored in the upper and lower quartiles on environmental value ratings. Then, the researchers primed relevant values by asking participants to complete a sentence-building task that used environmentally-related words. Value-congruent behavioral intentions occurred most often in the condition where values were activated and participants rated those same values highly. Finally, in an additional study, the researchers primed self-focus by asking participants to circle personal pronouns in a short narrative on a topic unrelated to the study.

They also asked participants to rate values related to altruism and then report on intentions to donate to charity. They found an interaction between high ratings of altruistic values and exposure to the self-focus manipulation—but no main effect for value ratings or self-focus.

Since there are numerous ways to manipulate value salience and/or to make the valueissue link more salient, there are ample opportunities to experimentally test the potential for value-relevant involvement to predict value-expressive communication. In such a study, valuerelevant involvement ratings would then serve as a manipulation check for value-activation; VRI should be significantly higher in the condition where values were activated than in the condition where values were not activated. If VRI predicts VEC, then VEC should be higher in the High VRI condition than in the Low VRI condition. If there are no differences in VEC, then there would not be evidence that value-relevant involvement predicts value-expressive communication generally. And this prompts the question of whether the causal chain may operate in the opposite direction.

A study testing the second causal string would manipulate VEC. An ideal way to manipulate VEC would be to have four separate conditions: high VEC, low VEC, communication-without-values (CWV), and no communication (control). The last two conditions are crucial for separating out the effects of talking about an issue in terms of values and simply talking about an issue in general. If value-expressive communication is more predictive of VRI than basic communication-without-values, VRI should be highest in the high VEC condition, followed by the low VEC condition, and the CWV and control conditions would both result in low VRI (lower than the VEC conditions). However, if it is just communication about an issue that increases involvement, and not whether such communication invokes values, then VRI should be roughly equivalent across all communication conditions. And VRI should be

higher in the communication conditions than in the no-communication control. Such a design would help to determine whether it is simply communication, or more specifically valueexpressive communication, that predicts value-relevant involvement.

An alternative way to produce value-expressive communication in participants would be to subject the participants to a threat. Psychological reactance theory (Brehm, 1966) posits that reactance occurs when a person's freedom is threatened. Reactance is a combination of emotional and cognitive responses to a threat that can prompt a person to somehow restore the threatened freedom (Dillard & Shen, 2005; Rains & Turner, 2007). In the case of valueexpressive communication, a researcher could threaten the freedom to express attitudes in terms of personal values. This could be done by the researcher explaining that this is a study of health opinions, so they may ask the participants to talk in greater detail about their survey responses. Then participants complete a short measure of personal values and attitudes toward a topic. Then the researcher checks over the responses and—regardless of the answers—delivers a line that will create one of four conditions: high threat to VEC, low threat to VEC, threat to general communication, no threat to communication (control).

In the high-threat-to-VEC condition, the researcher would tell the participant that he or she will not be allowed to voice his or her opinion on an issue, precisely because his or her opinion expresses his or her values. After a researcher expresses this threat and leaves the lab, a confederate could then prompt the participant to share the opinion that the researcher had attempted to stifle. This would likely produce high levels of value-expressive communication. In a low-threat-to-VEC condition, the researcher would state that the participant will not be allowed to voice his or her opinion on the issue since it might have something to do with personal values, but the researcher would make no mention of personal values. In a threat-to-general-

communication condition, the researcher would simply state that the participant will not be allowed to voice his or her opinion on the issue. In the no-threat-control condition, the researcher would make no mention of restricting communication, allow normal (off-topic) conversation between the confederate and participant, and then carry on with the experiment.

Participants would complete measures of perceived threat (e.g., Dillard & Shen, 2005; Rains & Turner, 2007) as a manipulation check. And participants' responses would be coded for VEC content. Perceived threat should produce differences in VEC content, which should then predict reported VRI. It would be expected, based on the assumption that VEC may predict VRI that the greatest reported VRI would be in the high-threat condition, then low-threat, then basicthreat, then no-threat. However, it may be that the threat-followed-by-communication procedure produces more VRI than the no-threat condition, regardless of the VEC content of the communication. In that case, one would expect to find roughly similar levels of VRI in the threat-and-communication conditions and would expect that these levels of VRI would be higher than in the no-threat-no-communication control condition. Regardless of the outcomes, experimental manipulations of value-expressive communication or value-relevant involvement hold promise for untangling the direction of the causal relationship between these constructs.

Value-Expressive Communication, Values, Attitudes, and Intentions

In addition to predicting a relationship between value-relevant involvement and valueexpressive communication, this study predicted that VEC would interact with values and attitudes to affect behavioral intentions. This three-way interaction was not significant for any behavioral domain in this study. Although, consistent with previous research (Kim & Hunter, 1993), attitudes had significant direct effects on all behaviors in this study. The reasons for observing non-significant three-way interactions between values, attitudes, and value-expressive

communication are similar to those posited to explain the non-significant interactions between values and value-relevant involvement. Namely, value-expressive communication may interact with value clusters rather than individual values to affect behavioral intentions or values may need to be activated before they significantly interact with value-expressive communication to affect behavioral intentions.

Though it did not significantly interact with attitudes and values to predict behavior, value-expressive communication did have a positive direct effect on intentions to drink in moderation. That is, as value-expressive communication about drinking in moderation increased, intentions to drink in moderation also increased. This is an important finding because it provides support for the construct of value-expressive communication, because value-expressive attitudes are also positively associated with behavioral intentions (Hullett, 2004; 2006) and value-expressive communication is the verbal expression of a value-expressive attitude. This finding also provides additional support for the argument that value-expressive communication is related to a variety of health-related behaviors, since previous research also demonstrated a positive relationship between value-expressive communication and exercise behavior (Anderson, 2011a).

Clearly, additional studies are still needed to more firmly establish the link between value-expressive communication and behavioral intentions. But, at present, it can at least be argued that future studies should continue to probe the relationship between value-expressive communication and behavioral intentions, specifically in terms of health behaviors, because this helps illuminate the relationship between communication and behavior. Furthermore, if such links continue to be found across behavioral domains, value-expressive communication could become a useful outcome variable for health communication campaigns. That is, as Anderson (2011a) argued, value-expressive communication about a health behavior may be a useful

outcome of health communication campaigns—if it is predictive of behavioral intentions. Health communication campaign messages could thus target both attitude and communication change as means for evoking behavior change.

Value-expressive communication explained significant variance in moderate drinking intentions, but did not explain significant variance in condom use or dieting intentions. The fact that VEC did not explain a significant amount of variance in condom use intentions may be due to the nature of the measurement of VEC. In this study, VEC was measured in the relational context of close friends. Drinking in moderation is a very common conversation topic among close friends in college (Baxter et al., 2008), but something like condom use—which is a more private behavior (Powell & Segrin, 2004; Rimal et al., 2011)—would likely be discussed more commonly in the context of a romantic relationship. Thus, it may not be that VEC does not explain variance in condom use intentions. Future research may further investigate the VEC-BI relationship for condoms by using a modified VEC measure that specifies romantic partner as the relational context. Indeed, future research could measure value-expressive communication in a variety of relational contexts, and observe the effect of those various types of VEC on behavioral intentions.

Value-expressive communication also did not explain a significant amount of variance in dieting intentions. This was not a predicted effect, but since previous research suggests a direct effect for VEC on behavioral intentions, it is worth considering. While the explanation of a non-significant effect for VEC-BI on condom use had to do with the relational context in which VEC was measured, for dieting the issue may be the fact that—regardless of relational context—dieting is a very difficult thing to navigate discursively (Bacon & Aphramor, 2001; Knuf &

Caughlin, 2011). Another explanation might be that people simply do not want to speak about dieting in terms of personal values—even if they are value-relevantly involved with the topic (as they were in this study). Indeed, the correlation between value-relevant involvement and value-expressive communication was the least substantial in this condition. Perhaps a different type of involvement (e.g., impression-relevant involvement) would also be salient for this topic and could produce a different type of communication (social-adjustive communication, perhaps?) that would be predictive of behavioral intentions.

This line of reasoning suggests that communication about attitudes may follow from attitude functions, such that attitudes serving particular functions are verbalized in ways that reflect those functions: value-expressive communication for value-expressive attitudes, socialadjustive communication for social-adjustive attitudes, and so on. As an example, socialadjustive communication might be conceptualized as communication that expresses one's attitude toward an object in such a way that it conveys adherence to group norms. Such communication might then be highly associated with impression-relevant involvement, and might also be associated with behavioral intentions. This line of reasoning would form the basis for a 'functional approach to communication.' Future studies could expand the construct of value-expressive communication into a functional communication framework that posits different modes of attitude verbalization based on attitude functions, and also uses different types of involvement to further understand the conditions under which such forms of communication would occur. Future research investigating other functional bases of communication may also consider the influence of relevant individual difference variables on the tendency to communicate value-expressively, social-adjustively, or otherwise. Such individual differences in value-expressive communication are the focus of the next section.

Individual Differences in Value-Expressive Communication

In addition to testing for the study predictions, a post-hoc comparison of reported levels of value-expressive communication was completed. These comparisons yielded interesting differences in value-expressive communication. For example, women reported greater levels of value-expressive communication than men, F(1, 543) = 18.93, p < .001; and those who live on campus reported greater levels of value-expressive communication than those who live off-campus, F(1, 540) = 4.60, p = .03. Value-expressive communication also differed based on the topic; VEC about dieting was significantly less common than value-expressive communication about either drinking in moderation or using condoms, F(2, 542) = 4.84, p = .01.

These descriptive data on value-expressive communication suggest that future studies should probe potential individual, and contextual, differences in value-expressive communication. In this way, future studies could refine the conceptualization of value-expressive communication to perhaps include not only cognitive variables (i.e., value-expressive attitudes and value-relevant involvement) that give rise to the verbalization of attitudes in terms of values, but also potential individual or contextual differences (e.g., gender, social context) that may predict value-expressive communication. If gender differences continue to be observed in valueexpressive communication, this could affect the development of persuasive campaigns targeting value-expressive communication in cases where VEC has been shown to be related to target behaviors. For example, if women are more prone to communicate value-expressively, perhaps they are a more receptive audience for appeals to modify such communication behavior. Conversely, if men are less prone to communicate value-expressively, but such communication is found to predict desired behaviors, then perhaps campaigns should focus on increasing VEC among men. Future studies on value-expressive communication can probe these potential individual differences.

Limitations

This study was limited by being cross-sectional, by only measuring value-expressive communication in one relational context, by not having enough abstainers (those who planned to not drink or not have sex) to test predictions in that group, by not measuring all values from the PVQ, by having limited statistical power, and by using a sample with limited generalizability. While none of these limitations affects the interpretation or validity of the results, they do limit the implications that can be drawn from these data and their generalizability.

First, since the study was cross-sectional the data cannot reasonably be examined for evidence of causal effects. This issue is most pressing for the interpretation of the relationship between value-relevant involvement and value-expressive communication. As the discussion of results noted, the cross-sectional design of the study leaves open the question of which variable may predict the other—if such causal directionality is even able to be observed. Future studies could better address this issue by manipulating either VEC or VRI experimentally in order to examine its effect on the other variable.

Second, the study measured value-expressive communication only in the context of close friendships. As discussed in chapter one, value-expressive communication is an interpersonal communication construct that can be explored in a variety of relational domains. As the focus of this study was the way that value-expressive communication operates across health contexts, the relational context of VEC was controlled and restricted. However, the relationship between VEC and other variables (e.g., VRI or behavioral intention) may be affected by the relational context in which that communication takes place. For example, the relationship between VEC and intentions to use condoms may be stronger when that VEC occurs in a romantic relationship than when that same type of communication occurs among friends. And, just as VEC varies based on individual differences, the amount of VEC that occurs may vary based on the relational context in which it occurs. Thus, future studies could control the health behavior being studied (i.e., use only one health behavior), but measure value-expressive communication in a variety of relational contexts (e.g., friendship, family, romantic). This would provide a clearer picture of how valueexpressive communication differs based on relational context, and then how that affects relationships between VEC, VRI, and behavioral intentions.

Third, abstainers (those who planned not to drink or planned not to have sex) were dropped from the analysis. Two of the behaviors in this study (moderate drinking and condom use) were modifications of a particular type of behavior: drinking alcohol or having sex. Because these were modificatory behaviors, intentions to perform these behaviors were only meaningful when a person planned to do the basic behavior already. Thus, in this case, the behavioral intention measure was only accurate for those who planned to do the behavior. This resulted in dropping abstainers from the analysis. However, abstainers are a potentially fruitful population in which to study value-expressive communication because they have myriad opportunities to explain their counter-normative behaviors, and often cite personal values in these explanations (Romo, 2012). Thus, the VEC-BI link may be particularly strong for this sub-population. However, this study did not include a sufficient number of abstainers to justify analyzing this group separately. Future research should work to over-sample from this group of participants in order to be able to analyze that data and determine how positive deviants differ from "typical" participants when it comes to the relationship between VEC and BI.

Fourth, although the sample size for this study exceeded the pre-determined size for adequate power, the final analyses of three-way interactions (with abstainers removed from the tests) were conducted with relatively small samples. Detecting three-way interactions is difficult, and with a relatively small sample size, this becomes even more difficult. Even though every effort was made to maximize the number of participants in every condition, the size of the sample—particularly in the tests for three-way interactions—was smaller than ideal. Thus, future studies should include a greater number of participants, and in light of another limitation discussed above, should potentially over-sample from abstaining populations in order to be able to test for differences in observed variable-relations between those who plan and do not plan to engage in the behavior.

Finally, although college students were an appropriate sample for this study given the relevance of the health behaviors to this population, the generalizability of the findings is limited to college students. Thus, the interpretation and application of these results is limited to samples of college students. However, the VEC-intention relationship has also been observed in previous research using a non-college student population (Anderson, 2011a). Thus, there is some precedence to suggest that such relationships can be observed in non-college student samples, but the results of the current study should still be interpreted with this limitation in mind.

Conclusion

This study extended work with value-expressive communication by linking this construct theoretically and empirically with value-relevant involvement. Because value-expressive communication is the verbalization of a value-expressive attitude, and value-relevant involvement indicates that a person holds a value-expressive attitude, this study argued that value-relevant involvement should be positively related to value-expressive communication.

Across three behavioral domains (moderate drinking, condom use, and dieting) this positive VRI-VEC relationship was observed. In addition, value-expressive communication had a direct positive effect on moderate drinking, and value-relevant involvement had a direct positive effect on all three behaviors.

The results of this study provide support for the contention that value-expressive communication is the verbalization of a value-expressive attitude, and this finding presents numerous opportunities for future research. Chief among these directions for future research is the untangling of the direction of causality in the VEC-VRI relationship. Experimental manipulation of these variables is suggested in order to better understand how they are related causally—and under what conditions. In addition, future research should examine valueexpressive communication in a variety of relational contexts in order to establish how relational context affects the observed VRI-VEC and VEC-BI relationships. Finally, once the nature of the VRI-VEC and VEC-BI relationships is better understood, value-expressive communication could be harnessed as an intermediary outcome variable for health communication interventions. That is, interventions could target value-expressive communication as a way to increase desired healthy behaviors. APPENDICES

Appendix A: DEMOGRAPHICS

1. What is your age?

2. What is your race? Please check all that apply.

Black or African American

White (not Hispanic/Latino)

Hispanic or Latino

American Indian

Asian

Native Hawaiian or Pacific Islander

Multiracial (having parents of more than one race)

Member of race not listed above: (please specify)

3. Year in school

First Year

Sophomore

Junior

Senior

Graduate Student

4. What is your major?

5. Do you live on-campus or off-campus?

On-campus

Off-campus

6. Are you in a social fraternity or sorority? (Are you in a Greek social organization?) Yes

No

7. Are you an international student?

Yes

No

8. What is your religious affiliation?

Christian

Jewish

Muslim

Hindu

Buddhist

Other-Religious

Non-Religious

Other-Non-Religious

9. What is your gender?

Appendix B: PORTRAIT VALUES QUESTIONNAIRE

Female Version of PVQ

Instructions to participants

Here we briefly describe some people. Please read each description and think about how much each person is or is not like you. Check the box that shows how much the person is like you (1 - Not at all like me, 2 - Not like me, 3 - A little like me, 4 - Somewhat like me, 5 - Like me, 6 - Very much like me).

*Item removed from analysis

Hedonism (Measured in Survey 1, 2, & 3)

- 1. Having a good time is important to her.
- 2. She likes to "spoil" herself.
- 3. She seeks every chance she can to have fun.
- 4. It is important to her to do things that give her pleasure.

Tradition (Measured in Survey 1 & 3)

- 1. It is important to her to be humble.*
- 2. It is important to her to be modest.
- 3. She tries not to draw attention to herself.*
- 4. Tradition is important to her.
- 5. She tries to follow the customs handed down by her religion.
- 6. She tries to follow the customs handed down by her family

Conformity (Measured in Survey 1 & 3)

- 1. She believes that people should do what they're told.
- 2. She thinks people should follow the rules at all times, even when no one is watching.
- 3. It is important for her to always behave properly.
- 4. She wants to avoid doing anything people would say is wrong.

Stimulation (Measured in Survey 1 & 3)

- 1. She likes surprises.*
- 2. She is always looking for new things to do.
- 3. She thinks it is important to do lots of different things in life.
- 4. She looks for adventures.
- 5. She likes to take risks.
- 6. She wants to have an exciting life.

Universalism (Measured in Survey 2)

- 1. She thinks it is important that every person in the world be treated equally.
- 2. She believes everyone should have equal opportunities in life.
- 3. It is important to her to listen to people who are different from her.
- 4. Even when she disagrees with people, she still wants to understand them.
- 5. She strongly believes that people should care for nature.*
- 6. Looking after the environment is important to her.*

Benevolence (Measured in Survey 2)

- 1. It's very important to her to help the people around her.
- 2. She wants to care for the well-being of people around her.
- 3. It is important to her to be loyal to her friends.
- 4. She wants to devote herself to people close to her.

Power (Measured in Survey 2)

- 1. It is important to her to be rich.
- 2. She wants to have a lot of money and expensive things.
- 3. It is important to her to get respect from others.
- 4. She wants people to do what she says.

Male Version of PVQ

Instructions to participants

Here we briefly describe some people. Please read each description and think about how much each person is or is not like you. Check the box that shows how much the person is like you (1 - Not at all like me, 2 - Not like me, 3 - A little like me, 4 - Somewhat like me, 5 - Like me, 6 - Very much like me).

*Item removed from analysis

Hedonism (Measured in Survey 1, 2, & 3)

- 1. Having a good time is important to him.
- 2. He likes to "spoil" himself.
- 3. He seeks every chance he can to have fun.
- 4. It is important to him to do things that give him pleasure.

Tradition (Measured in Survey 1 & 3)

- 1. It is important to him to be humble.*
- 2. It is important to him to be modest.
- 3. He tries not to draw attention to himself.*
- 4. Tradition is important to him.
- 5. He tries to follow the customs handed down by his religion.
- 6. He tries to follow the customs handed down by his family

Conformity (Measured in Survey 1 & 3)

- 1. He believes that people should do what they're told.
- 2. He thinks people should follow the rules at all times, even when no one is watching.
- 3. It is important for him to always behave properly.
- 4. He wants to avoid doing anything people would say is wrong.

Stimulation (Measured in Survey 1 & 3)

- 1. He likes surprises.*
- 2. He is always looking for new things to do.
- 3. He thinks it is important to do lots of different things in life.
- 4. He looks for adventures.

- 5. He likes to take risks.
- 6. He wants to have an exciting life.

Universalism (Measured in Survey 2)

- 1. He thinks it is important that every person in the world be treated equally.
- 2. He believes everyone should have equal opportunities in life.
- 3. It is important to him to listen to people who are different from him.
- 4. Even when he disagrees with people, he still wants to understand them.
- 5. He strongly believes that people should care for nature.*
- 6. Looking after the environment is important to him.*

Benevolence (Measured in Survey 2)

- 1. It's very important to him to help the people around him.
- 2. He wants to care for the well-being of people around him.
- 3. It is important to him to be loyal to his friends.
- 4. He wants to devote herself to people close to him.

Power (Measured in Survey 2)

- 1. It is important to him to be rich.
- 2. He wants to have a lot of money and expensive things.
- 3. It is important to him to get respect from others.
- 4. He wants people to do what he says.

Appendix C: CENTERED MEAN SCORES FOR PVQ RESPONSES

The centered scores will be computed based on the participant's item responses within and across all value scales. Centering the scores in this way is useful for two reasons. First, it allows one to determine whether the rating of any given value is higher or lower than the mean value rating the person gave across all values (thus indicating the relative importance of the value). Second, it allows for such comparisons to be made without being affected by the participant's response pattern. That is, a participant's mean hedonism rating may be 4.2, which may be lower than the sample mean (say 5.3, for example). Centering based on the sample mean would indicate that this person does not value hedonism. However, this participant may generally be a "low rater" and may have mean value ratings of 2.2, 2.3, and 2.6 on the other three values in that survey. Using this participant's mean rating of all values (MRAV) to create a centered score on hedonism would therefore reveal that, for this participant, hedonism is an important value (i.e., the centered mean would be positive). Such a scoring system is more accurate to the intentions of the participant/rater, because it is inferred from the participant's response pattern (Schwartz, 1992).

Centered mean value scores will be calculated by first summing each participant's responses for the items measuring that value, then dividing by four; this value will be called mean value rating (MVR). Then, per Schwartz's (1992) and Schwartz et al.'s (2001) recommendations, each MVR will be centered using the participant's mean rating of all values. Thus, each of the participant's mean ratings on all values will be summed and divided by 4 (i.e., the total number of values being measured in each survey); this value will be called the mean rating of all values (MRAV). Centered scores for each participant's rating of each value will then be calculated by subtracting the MRAV from the MVR for each value. This creates the centered

value score (CVS). The following equations demonstrate how the CVS would be computed for each participant, using Survey 1, with the values of hedonism, stimulation, tradition, and conformity, as an example.

$$MVR_{hedonism} = \underline{Item 1_{hed} + Item 2_{hed} + Item 3_{hed} + Item 4_{hed}}_{A}$$

$$MVR_{stimulation} = \underline{Item 1_{stim} + Item 2_{stim} + Item 3_{stim} + Item 4_{stim}}_{4}$$

 $MVR_{tradition} = \underline{Item 1_{trad} + Item 2_{trad} + Item 3_{trad} + Item 4_{trad}}{4}$

 $MVR_{conformity} = \underline{Item \ 1_{con} + Item \ 2_{con} + Item \ 3_{con} + Item \ 4_{con}}_{4}$

 $MRAV = \underline{MVR}_{\underline{hed}} + \underline{MVR}_{\underline{stim}} + \underline{MVR}_{\underline{trad}} + \underline{MVR}_{\underline{con}} = \underline{I1}_{\underline{hed}} + \underline{I2}_{\underline{hed}} + \underline{I4}_{\underline{con}}$

 $CVS_{hed} = MVR_{hed} - MRAV$

 $CVS_{stim} = MVR_{stim} - MRAV$

 $CVS_{trad} = MVR_{trad} - MRAV$

 $CVS_{con} = MVR_{con} - MRAV$

Appendix D: VALUE-RELEVANT INVOLVEMENT

Value-Relevant Involvement with Moderate Drinking

Instructions to participants:

The following statements deal with drinking in moderation. Drinking in moderation means monitoring your alcohol consumption (e.g., pacing drinks, limiting amount of drinks) in order to avoid or decrease the risk of experiencing alcohol-related problems.

Please rate your level of agreement with the following statements on a scale from 1 (strongly disagree) to 7 (strongly agree).

*Item dropped from analysis

- 1. The values that are most important to me determine whether or not I engage in moderate drinking.
- 2. My stance on drinking in moderation is central to understanding the kind of person I am.*
- 3. My position on moderate drinking is based on the values with which I try to conduct my life.*
- 4. My stance on moderate drinking is based on the core principles that guide my life.
- 5. My beliefs about how I should live my life determine whether or not I drink in moderation.
- 6. Whether or not I engage in moderate drinking reflects who I am.
- 7. My beliefs about drinking in moderation have little to do with my beliefs about how life should be lived. (reverse code)*

Value-Relevant Involvement with Condom use

Instructions to participants:

The following statements deal with vaginal sexual intercourse. If you are not sexually active, or do not routinely engage in vaginal intercourse, you should answer the questions based on your thoughts concerning the general use of physical barriers during sexual intercourse for preventing the spread of sexually transmitted infections/diseases and preventing pregnancy.

Please rate your level of agreement with the following statements on a scale from 1 (strongly disagree) to 7 (strongly agree).

*Item dropped from analysis

- 1. The values that are most important to me determine whether or not a condom is used when I have sex.
- 2. My stance on using condoms during sex is central to understanding the kind of person I am.*
- 3. My position on using condoms during sex is based on the values with which I try to conduct my life.*

- 4. My stance on using condoms during sex is based on the core principles that guide my life.
- 5. My beliefs about how I should live my life determine whether or not a condom is used when I have sex.
- 6. Whether or not a condom is used when I have sex reflects who I am.
- 7. My beliefs about using condoms during sex have little to do with my beliefs about how life should be lived. (reverse code)*

Value-Relevant Involvement with Dieting

Instructions to Participants

The following questions deal with dieting (or restricting one's food intake in some manner) in order to lose weight. If you have never and are not currently dieting, or are on a restricted diet for non-weight loss reasons, you should answer the following questions based on your thoughts concerning the general practice of dieting for weight loss.

Please rate your level of agreement with the following statements on a scale from 1 (strongly disagree) to 7 (strongly agree).

*Item dropped from analysis

- 1. The values that are most important to me determine whether or not I diet.
- 2. My stance on dieting is central to understanding the kind of person I am.*
- 3. My position on dieting is based on the values with which I try to conduct my life.*
- 4. My stance on dieting is based on the core principles that guide my life.
- 5. My beliefs about how I should live my life determine whether or not I diet.
- 6. Whether or not I diet reflects who I am.
- 7. My beliefs about dieting have little to do with my beliefs about how life should be lived. (reverse code)*

Appendix E: VALUE-EXPRESSIVE COMMUNICATION

Value-Expressive Communication about Moderate Drinking

Instructions to participants:

The following statements deal with drinking in moderation. Drinking in moderation means monitoring your alcohol consumption (e.g., pacing drinks, limiting amount of drinks) in order to avoid or decrease the risk of experiencing alcohol-related problems.

Please rate your level of agreement with the following statements on a scale from 1 (strongly disagree) to 7 (strongly agree).

*Item dropped from analysis

- 1. What I say to my friends about moderate drinking is based on my personal values.
- 2. My personal values come through in the way I talk to my friends about drinking in moderation.
- 3. The things I say to my friends about moderate drinking have nothing to do with my personal values. [recode]*
- 4. When I talk to my friends about drinking in moderation, in a way I'm also talking about my personal values.
- 5. The way I talk to my friends about drinking in moderation shows people my personal values.

Value-Expressive Communication about Condom Use

Instructions to participants:

The following statements deal with vaginal sexual intercourse. If you are not sexually active, or do not routinely engage in vaginal intercourse, you should answer the questions based on your communication about the use of physical barriers during sexual intercourse for preventing the spread of sexually transmitted infections/diseases and preventing pregnancy.

Please rate your level of agreement with the following statements on a scale from 1 (strongly disagree) to 7 (strongly agree).

*Item dropped from analysis

- 1. What I say to my friends about using condoms is based on my personal values.
- 2. My personal values come through in the way I talk to my friends about condom use.
- 3. The things I say to my friends about using condoms have nothing to do with my personal values. [recode]*
- 4. When I talk to my friends about condom use, in a way I'm also talking about my personal values.
- 5. The way I talk to my friends about using condoms shows people my personal values.

Value-Expressive Communication about Dieting

Instructions to Participants

The following questions deal with dieting (or restricting one's food intake in some manner) in order to lose weight. If you have never and are not currently dieting, or are on a restricted diet for non-weight loss reasons, you should answer the following questions based on communication about the practice of dieting for weight loss.

Please rate your level of agreement with the following statements on a scale from 1 (strongly disagree) to 7 (strongly agree).

*Item dropped from analysis

- 1. What I say to my friends about dieting is based on my personal values.
- 2. My personal values come through in the way I talk to my friends about dieting.
- 3. The things I say to my friends about dieting have nothing to do with my personal values. [recode]*
- 4. When I talk to my friends about dieting, in a way I'm also talking about my personal values.
- 5. The way I talk to my friends about dieting shows people my personal values.

Appendix F: ATTITUDES

Attitudes toward Moderate Drinking

Instructions to participants:

The following statements deal with drinking in moderation. Drinking in moderation means monitoring your alcohol consumption (e.g., pacing drinks, limiting amount of drinks) in order to avoid or decrease the risk of experiencing alcohol-related problems.

Please indicate your thoughts on moderate drinking using the scales below.

*Item dropped from analysis

For me, drinking in moderation is...

1.	Useless	 	 	 	 Useful*
2.	Harmful	 	 	 	 Beneficial*
3.	Foolish	 	 	 	 Wise
4.	Good	 	 	 	 Bad [reverse]*
5.	Dumb			 	 Smart
6.	Negative	 	 	 	 Positive
7.	Sensible	 	 	 	 Unsensible [reverse]

For me, drinking in moderation is something I...

8.	Dislike								Like*
----	---------	--	--	--	--	--	--	--	-------

Attitudes toward Condom Use

Instructions to participants:

The following statements deal with vaginal sexual intercourse. If you are not sexually active, or do not routinely engage in vaginal intercourse, you should answer the questions based on your general thoughts about the use of physical barriers during sexual intercourse for preventing the spread of sexually transmitted infections/diseases and preventing pregnancy.

*Item dropped from analysis

For me, using a condom during sex is...

1.	Useless	 	 	 	 Useful*
2.	Harmful	 	 	 	 Beneficial*
3.	Foolish	 	 	 	 Wise
4.	Good	 	 	 	 Bad [reverse]*
5.	Dumb	 	 	 	 Smart
6.	Negative	 	 	 	 Positive

7. Sensible	 	Unsensible [reverse]
For me, using a condom during sex is something I		
8. Dislike	 	Like*

Attitudes toward Dieting

Instructions to Participants

The following questions deal with dieting (or restricting one's food intake in some manner) in order to lose weight. If you have never and are not currently dieting, or are on a restricted diet for non-weight loss reasons, you should answer the following questions based on your general thoughts about the practice of dieting for weight loss.

*Item dropped from analysis

For me, dieting to lose weight is...

1.	Useless	 	 	 	 Useful
2.	Harmful	 	 	 	 Beneficial
3.	Foolish	 	 	 	 Wise
4.	Good	 	 	 	 Bad [reverse]*
5.	Dumb	 	 	 	 Smart*
6.	Negative	 	 	 	 Positive*
7.	Sensible	 	 	 	 Unsensible [reverse]

For me, dieting to lose weight is something I...

8. Dislike	Like*
------------	-------

Appendix G: BEHAVIORAL INTENTIONS

Moderate Drinking

Instructions to Participants

Please rate your level of agreement with the following statements on a scale from 1 (very unlikely) to 7 (very likely).

*Item removed from analysis

In the next two weeks, how likely is it that you will...

- 1. Limit the amount of drinks you have in a given night.
- 2. Refrain from drinking so much that you hurt yourself or get sick.*
- 3. Drink only in moderation (i.e., not drink excessively).
- 4. Keep yourself from drinking so much that you hurt others.*

Do you plan to drink alcohol in the next two weeks? Yes No

Condom Use

Instructions to participants:

The following statements deal with VAGINAL sexual intercourse. If you are not sexually active, or do not routinely engage in vaginal intercourse, you should answer the questions based on your communication about the use of physical barriers during sexual intercourse for preventing the spread of sexually transmitted infections/diseases and preventing pregnancy.

The first or next time you have vaginal sex in the next three months, how likely is it that you will...

- 1. Suggest a condom be used if one is available.
- 2. Have a condom ready to use for sexual intercourse.
- 3. Require a condom be used for sex no matter what.
- 4. Only engage in sexual intercourse if a condom is being used.

Do you plan to have sex in the next three months? Yes

No

Dieting

In the next two weeks, how likely is it that you will...

- 1. Start or maintain a low-calorie diet to lose weight.
- 2. Start or maintain a low-fat diet to lose weight.
- 3. Start or maintain a low-carb diet to lose weight.

4. Start or continue to restrict your diet in some way in order to lose weight.

Do you plan to start or maintain a diet in the next two weeks? Yes No
Appendix H: SELF-EFFICACY

Moderate Drinking

- 1. I know how to drink in moderation.
- 2. I am confident in my ability to drink in moderation.
- 3. I can effectively drink in moderation.

Condom Use

- 1. I know how to use a condom for vaginal sex.
- 2. I am confident in my ability to use a condom for vaginal sex.
- 3. I can effectively use a condom for vaginal sex.

Dieting

- 1. I know how to diet to lose weight.
- 2. I am confident in my ability to diet to lose weight.
- 3. I can effectively diet to lose weight.

Appendix I: Determination of Covariates

The data were examined with respect to significant relationships among potential covariates (age, gender, race, year in school, major international student status, Greek status, religious affiliation, campus living situation, and self-efficacy) and all theoretical variables (values, value-relevant involvement, value-expressive communication, attitude, and behavioral intention). Decisions about the inclusion of demographics as control variables were based on Tabachnik and Fidell's (1996) recommendations for inclusion of covariates. Finally, correlations between all study variables (within a given survey condition) were calculated.

Age

In the moderate drinking condition, age was significantly correlated with the values of conformity, r(174) = .20, p < .01; stimulation r(174) = -.20, p < .01; and universalism r(174) = .15, p < .05. In the condom use condition, age was significantly correlated with the value of hedonism, r(156) = .18, p < .01. In the dieting condition, age was significantly correlated with the value of benevolence, r(161) = -.16, p < .05. Age was not significantly correlated with any other study variables in any condition. Since age was not significantly correlated with any dependent variables, it will not be included as a covariate in subsequent analyses.

Self-Efficacy

Self-efficacy showed no association with study variables in the condom use condition. However, self-efficacy was positively related to intentions to drink moderately, r(150) = .20, p < .05 and to diet, r(152) = .48, p < .001. Self-efficacy was also positively associated with valuerelevant involvement for moderate drinking, r(154) = .26, p < .001, and dieting, r(151) = .38, p < .001; value-expressive communication for moderate drinking, r(154) = .21, p < .01, and for dieting, r(154) = .23, p < .01; and with attitudes toward drinking in moderation, r(150) = .20, p < .05, and dieting, r(151) = .35, p < .001. Thus, self-efficacy will be included as a covariate for analyses regarding value-expressive communication or behavioral intention as outcome variables in either the moderate drinking or dieting conditions.

Race

No significant differences in any study variables emerged based on race in any condition. It will therefore not be used as a covariate in any analyses.

Year in School

Ratings of the value of hedonism, in the condom use condition, were significantly different based on year in school, F(3, 187) = 5.33, p = .002, with seniors reporting significantly higher ratings of hedonism than other levels of students. No significant differences in study variables emerged based on year in school for any conditions. Since year in school was not significantly correlated with any dependent variables, it will not be included as a covariate in subsequent analyses.

Living On or Off Campus

For moderate drinking, those who lived on-campus reported significantly more valueexpressive communication about drinking in moderation than those who lived off-campus, F(1, 187) = 5.33, p = .02. In addition, those who lived on-campus reported significantly higher intentions to drink in moderation than did those who lived off-campus, F(1, 177) = 4.73, p = .03. For condom use, those who lived on-campus reported significantly more favorable attitudes toward condom use than did those who lived off-campus, F(1, 169) = 5.76, p = .02. No significant differences for campus living situation emerged in the dieting condition. Campus living situation will therefore be included as a covariate in analyses of value-expressive communication about drinking in moderation and intentions to drink in moderation.

Involvement in a Greek Organization

In the moderate drinking condition, ratings of the value of conformity were significantly lower among those in a Greek organization than those not in a Greek organization, F(1, 174) =7.07, p = .01. In the condom use condition, those in a Greek organization rated conformity [F(1, 164) = 5.03, p = .03] significantly higher than those not in a Greek organization, and rated universalism [F(1, 164) = 5.83, p = .02] and benevolence [F(1, 164) = 5.81, p = .02] significantly lower than those not in a Greek organization. No differences in value ratings based on Greek status emerged in the dieting condition. For condom use, those who were *not* involved with a Greek organization reported more positive attitudes toward condom use than did those who were involved with a Greek organization, F(1, 169) = 5.65, p = .02. In addition, those who were not involved with a Greek organization reported significantly higher intentions to use condoms during sex than did those who were involved with a Greek organization emerged in either the moderate drinking or dieting conditions. Therefore, involvement in a Greek organization will only be included as a covariate in analyses of intentions to use condoms.

International Student Status

In the moderate drinking condition, domestic students rated the value of benevolence significantly higher than did international students, F(1, 176) = 5.20, p = .02. In the condom use condition, international students rated the value of power significantly higher than did domestic students, F(1, 162) = 8.58, p = .004. In the dieting condition, domestic students rated the value of benevolence higher than did international students, F(1, 163) = 10.69, p = .001. No other significant differences for international student status emerged in any conditions. Since

international student status was not significantly correlated with any dependent variables, it will not be included as a covariate in subsequent analyses.

Religious Affiliation

In the moderate drinking condition, religious affiliation was associated with differences in ratings of the value of tradition, F(5, 172) = 7.64, p < .001. This difference is due to religious participants of all affiliations reporting higher ratings of the tradition value than the non-religious participants. The same pattern emerged in the condom use condition, F(6, 158) = 5.76, p < .001; and in the dieting condition, F(5, 159) = 8.16, p < .001, with regard to the value of tradition. In addition, in the condom use condition, Islamic and Buddhist participants rated the value of power significantly lower than all other religious affiliations, F(6, 158) = 3.51, p = .003. And in the dieting condition, Buddhist, non-religious, and "other-religious" participants rated the value of stimulation significantly higher than all other affiliations, F(5, 159) = 2.66, p = .03. In the dieting condition, Islamic participants rated benevolence significantly lower than all other affiliations, F(5, 159) = 2.45, p = .04.

Religious affiliation produced significantly different attitudes toward drinking in moderation, F(5, 176) = 2.62, p = .03. This difference is due to low attitude scores from the two Islamic participants (M = 3.13, SD = 1.24) and the only Hindu participant (M = 4.00); as well as a high attitude scores from the three Buddhist participants (M = 6.20, SD = .14). Religious affiliation also produced significantly different levels of value-relevant involvement with dieting, F(5, 168) = 2.319, p = .05. This seems to have been caused by significantly lower VRI scores among four Islamic participants (M = 1.75, SD = .54) and two Jewish participants (M = 2.00, SD = 1.41). No other differences for religious affiliation emerged in any conditions. These differences are mostly due to a few extreme scores in sub-sets of the sample with very few

participants, and these differences are among variables that do not serve as outcome variables in any analyses. Therefore, religious affiliation was not included as a covariate in any further analyses.

Sex

Women rated universalism more highly than men, F(1, 507) = 8.01, p = .01; and women rated benevolence more highly than men, F(1, 507) = 7.00, p = .01. Whereas men rated the value of power higher than women, F(1, 507) = 8.99, p < .001. For drinking in moderation, women reported significantly greater intentions to drink in moderation than men, F(1, 177) = 8.42, p = .004. For condom use, women reported significantly more value-expressive communication about condoms than men, F(1, 176) = 5.96, p = .02; and more positive attitudes toward condoms than men, F(1, 170) = 9.94, p = .002. Finally, for dieting, women reported significantly more value-expressive communication about dieting than did men, F(1, 176) = 12.91, p < .001; and significantly greater intentions to diet than men, F(1, 173) = 9.77, p = .002. Thus, sex will be included as a covariate for tests involving intentions to drink in moderation, value-expressive communication about condoms, value-expressive communication about dieting, and intentions to diet.

			SI	Total # of	Total Items	
Scale	Mean (SD)	Alpha	Alpha	Items	Retained	Dropped Item(s)
Hedonism	4.42 (.46)	0.825	0.832	4	3	2
Tradition	4.22 (.74)	0.661	0.682	4	4	
Conformity	3.95 (.97)	0.815	0.819	4	4	
Stimulation	4.74 (.87)	0.888	0.890	6	5	1
Universalism	4.77 (.78)	0.798	0.804	6	6	
Benevolence	5.19 (.74)	0.845	0.848	4	4	
Power	3.68 (1.11)	0.800	0.793	4	3	3
Drinking ATT	5.08 (1.52)	0.950	0.951	13	8	4, 5, 6, 9, 13
Condom ATT	6.18 (1.17)	0.931	0.945	13	8	4, 5, 6, 9, 13
Dieting ATT	4.68 (1.55)	0.950	0.952	13	8	4, 5, 6, 9, 13
Drinking INT	5.29 (1.71)	0.864	0.865	4	4	
Condom INT	5.39 (1.98)	0.945	0.944	4	4	
Deiting INT	3.58 (2.03)	0.957	0.957	4	4	

Table 1. PSYCHOMETRIC PROPERTIES OF SCALES INCLUDED IN PILOT TEST

			Condom	
	Full	Drinking	Use	Dieting
	Sample	Condition	Condition	Condition
Total Participants	547	190	179	178
	20.49	20.45	20.48	20.53
Mean Age	(SD=1.95)	(SD=2.05)	(SD=1.9)	(SD=1.89)
Female	62.5%	70.5%	54.7%	61.8%
Live Off-Campus	61.0%	59.5%	61.8%	61.9%
Greek Affiliation	18.5%	14.9%	13.6%	17.0%
Race				
White	76.9%	74.6%	76.0%	80.3%
Black	9.2%	9.0%	10.1%	8.4%
Asian	7.0%	9.0%	7.8%	3.9%
Hispanic	2.7%	3.7%	2.8%	1.2%
Multiracial	2.9%	2.6%	1.7%	4.5%
American Indian	0.2%	0.0%	0.6%	0.0%
Other	1.1%	1.1%	1.1%	1.1%
Year in School				
First Year	25.0%	25.4%	25.7%	23.7%
Sophomore	20.0%	23.3%	17.9%	18.6%
Junior	22.9%	21.2%	22.9%	24.9%
Senior	31.9%	29.6%	33.5%	32.8%
Religious Affiliation				
Christian	69.8%	72.6%	63.5%	73.0%
Non-Religious	22.3%	19.5%	28.1%	19.7%
Jewish	4.0%	4.7%	5.6%	1.7%
Muslim	1.3%	1.1%	0.6%	2.2%
Buddhist	1.1%	1.6%	0.6%	1.1%
Other-Religious	1.1%	0.0%	1.1%	2.2%
Hindu	0.4%	0.5%	0.6%	0.0%

Table 2. SAMPLE CHARACTERISTICS

-			Plan to Er	igage	Plan NOT to	engage	•
	Full Sample (N	= 547)	in Behav	vior	in Beha	vior	
							Dropped
Scale	Mean (SD)	Alpha	Mean (SD)	Alpha	Mean (SD)	Alpha	Item(s)
VRI	4.37 (1.31)	0.85	4.12 (1.25)	0.83	5.00 (1.31)	0.84	2, 3, 7
VRI ^D	4.29 (1.47)	0.84	4.17 (1.47)	0.83	4.65 (1.43)	0.84	2, 3, 7
VRI ^c	3.52 (1.28)	0.85	**	**	**	**	2, 3, 7
VEC	4.55 (1.41)	0.92	4.31 (1.38)	0.92	5.14 (1.37)	0.90	3
VEC ^b	4.54 (1.27)	0.88	4.40 (1.28)	0.88	4.99 (1.18)	0.85	3
VEC ^c	4.17 (1.23)	0.89	**	**	**	**	3
ATT	5.55 (1.33)	0.91	5.57 (1.19)	0.92	5.65 (1.61)	0.89	1, 2, 4, 8
ATT ^b	6.45 (.86)	0.84	6.37 (.89)	0.82	6.65 (.74)	0.90	1, 2, 4, 8
ATT ^c	4.89 (1.60)	0.93	**	**	**	**	4, 5, 6, 8
EFF	5.91 (1.22)	0.95	5.91 (1.08)	0.95	6.08 (1.45)	0.95	
EFF ^b	6.26 (1.07)	0.99	6.45 (.84)	0.99	5.73 (1.48)	0.99	
EFF ^c	4.82 (1.58)	0.95	**	**	**	**	
INT	5.65 (1.49)	**	5.39 (1.57)	**	6.50 (.84)	**	2,4
INT ^b	5.53 (1.76)	0.93	5.40 (1.85)	0.95	6.00 (1.33)	0.82	
INT ^c	3.45 (1.87)	0.95	**	**	**	**	
HED	4.64 (.79)	0.78	**	**	**	**	
TRAD	4.29 (.95)	0.71	**	**	**	**	1, 3
CONF	4.00 (.97)	0.83	**	**	**	**	
STIM	4.88 (.82)	0.87	**	**	**	**	1
UNIV	5.01 (.81)	0.85	**	**	**	**	5,6
BEN	5.27 (.71)	0.89	**	**	**	**	
PWR	4.12 (.89)	0.75	**	**	**	**	

Table 3. PSYCHOMETRIC PROPERTIES OF ALL SCALES

Notes:

**Not applicable

^a Moderate drinking condition (N = 186). N = 131 plan to drink; N = 55 plan not to drink.

^b Condom use condition (N = 133). N = 133 plan to have sex; N = 42 plan not to have sex.

^c Dieting condition (N = 172)

	Ob	served	(Expect	ed)					Fac	ctor
		Corre	lations		Residuals					
	VRI1	VRI2	VRI4	VRI6	VEC1	VEC2	VEC4	VEC5	VRI	VEC
VRI1					0.14	0.09	0.08	-0.04	0.72	
VRI2	0.63				0.06	0.07	-0.04	-0.11	0.88	
VRI4	0.62	0.76			0.09	0.05	0.03	-0.09	0.87	
VRI6	0.50	0.58	0.58		-0.01	0.18	0.18	0.07	0.67	
	.49	.49	.52	.40						
VEC1	(.35)	(.43)	(.43)	(.33)						0.73
	.45	.51	.49	.52						
VEC2	(.36)	(.44)	(.44)	(.34)	0.69					0.75
	.52	.50	.56	.59						
VEC4	(.44)	(.54)	(.53)	(.41)	0.63	0.67				0.91
	.40	.43	.45	.48						
VEC5	(.44)	(.54)	(.54)	(.41)	0.65	0.67	0.85			0.92

Table 4. TEST FOR PARALLELISM OF VALUE-RELEVANT INVOLVEMENT ANDVALUE-EXPRESSIVE COMMUNICATION SCALES

	HED	TRAD	CONF	STIM	UNIV	BEN
Tradition	34**					
Conformity	43**	.26**				
Stimulation	.18**	35**	56**			
Universalism	30**	16**	21**	02		
Benevolence	17**	20**	13**	01	.31**	
Power	.12**	32**	12**	19**	36**	35**

Table 5. CORRELATIONS BETWEEN VALUES IN FULL SAMPLE (N = 509)

Note: ***p* < .01

Table 6. CORRELATIONS IN THE MODERATE DRINKING CONDITION, FOR THOSE WHO PLAN TO DRINK (N = 131)

	BI	VEC	VRI	ATT	EFF	HED	TRAD	CONF	STIM	UNIV	BEN
VEC	.53**										
VRI	.48**	.64**									
ATT	.26*	.28**	.18*								
EFF	.38**	.13	.27**	.00							
HED	30**	18*	26**	20	10						
TRAD	.18*	.23*	.29**	.00	.11	26**					
CONF	.20*	.13	.17	0.11	.24*	32**	.25**				
STIM	07	.16	11	10	10	.08	23*	63**			
UNIV	.08	05	.06	.20*	10	37**	18*	21*	03		
BEN	01	.04	05	.04	.00	24**	17	09	21*	.33**	
PWR	14	02	15	.00	10	.17	47**	10	14	34**	25**

Note: * *p* < .05, ** *p* < .01

Table 7. CORRELATIONS IN THE CONDOM USE CONDITION, FOR THOSE WHO PLAN TO HAVE SEX (N = 133)

_	BI	VEC	VRI	ATT	EFF	HED	TRAD	CONF	STIM	UNIV	BEN
VEC	.38**										
VRI	.49**	.70**									
ATT	.51**	.45**	.40**								
EFF	.01	.03	05	.16							
HED	05	04	08	.06	.06						
TRAD	.01	.15	.18	.02	06	31**					
CONF	10	.22*	.12	.01	10	42**	.26**				
STIM	02	24**	19*	06	05	.19*	36**	52**			
UNIV	.24**	.04	.03	.14	.18	29**	16	19*	08		
BEN	01	03	04	.09	.19*	22*	29*	18*	03	.34*	
PWR	04	10	02	18*	11	.09	21*	16	23*	41**	24**

Note: * *p* < .05, ** *p* < .01

	BI	VEC	VRI	ATT	EFF	HED	TRAD	CONF	STIM	UNIV	BEN
VEC	.28**										
VRI	.45**	.53**									
ATT	.47**	.17*	.25**								
EFF	.48**	.23**	.38**	.39**							
HED	.02	09	06	.03	10						
TRAD	05	.06	.02	03	.00	35**					
CONF	.01	.11	01	.01	.15	53**	.26**				
STIM	.07	03	.06	.06	.00	.27**	45**	60**			
UNIV	01	02	05	02	10	26**	14	18*	.00		
BEN	04	08	03	02	.04	07	19*	.12	01	.21**	
PWR	01	01	.04	04	.00	.09	30**	10	14	34**	41**

Table 8. CORRELATIONS IN THE DIETING CONDITION

Note: * *p* < .05, ** *p* < .01

					Total
	r	β	t	ΔR^2	R^2
Step 1				.19***	0.19
Self-efficacy	0.38**	0.39***	4.16		
Live on campus		0.16	1.67		
Female		0.21*	2.27		
Step 2				0.08*	0.27
Conformity	0.20*	0.09	0.73		
Tradition	0.18*	0.06	0.59		
Hedonism	-0.29**	-0.24*	-2.49		
Stimulation	-0.07	0.03	0.23		

Table 9. REGRESSION OF MODERATE DRINKING INTENTION ON PERSONAL VALUES (H1a & H1b) (N = 101)

Note: This analysis only included those who plan to drink alcohol in the next 2 weeks

					Total
	r	β	t	ΔR^2	R^2
Step 1				0.07	.07**
Greek		-0.27**	-3.06		
Step 2				0.05	0.12
Universalism	.24**	0.24*	2.38		
Benevolence	-0.003	-0.11	-1.17		
Hedonism	-0.05	-0.01	-0.13		
Power	-0.04	0.05	0.54		

Table 10. REGRESSION OF CONDOM USE INTENTION ON PERSONAL VALUES [H2a & H2b] (N = 122)

Note: This analysis only included those who plan to have sex in the next three months

	r	в	t	ΛR^2	Total R^2
Step 1	-	Ρ		.29***	0.29
Self-efficacy	.48***	.49***	6.89		
Female		.23**	3.18		
Step 2				0.02	0.31
Tradition	-0.05	0.01	0.06		
Conformity	0.003	0.01	0.07		
Stimulation	0.07	0.06	0.59		
Hedonism	0.02	0.09	0.99		

Table 11. REGRESSION OF DIETING INTENTION ON PERSONAL VALUES [H3a & H3b] (N = 143)

r	β	t	ΔR^2	Total R^2
			0.06	0.06
.21**	0.20**	2.48		
	0.13	1.59		
	0.07	0.90		
			<i>∕</i> 17***	0.53
70***	71***	12 17	. ד /	0.55
	<i>r</i> .21** .70***	<i>r</i> β .21** 0.20** 0.13 0.07 .70*** .71***	r β t .21** 0.20** 2.48 0.13 1.59 0.07 0.90 .70*** .71*** 12.17	r β t ΔR^2 0.06 .21** 0.20** 2.48 0.13 1.59 0.07 0.90 .007 0.90 .47***

Table 12. REGRESSION OF VEC ON VRI FOR MODERATE DRINKING [H4] (N = 152)

		0		A D ²	Total
	r	β	t	ΔR^2	R ^z
Step 1				0.04	0.04
Greek		-0.05	-0.67		
Female		.18*	2.44		
Step 2				.49***	0.52
VRI	.71***	.70***	13.17		

Table 13. REGRESSION OF VEC ON VRI FOR CONDOM USE [H4] (N = 175)

	r	β	t	ΔR^2	Total R^2
Step 1				.10***	0.10
Self-					
Efficacy	.23**	.23**	2.97		
Female		.22**	2.79		
Step 2				.22***	0.32
VRI	.53***	.50***	6.82		

Table 14. REGRESSION OF VEC ON VRI FOR DIETING [H4] (N = 150)

	r	β	В	t	ΔR^2	Total R^2
Step 1					.19***	0.19
Self-efficacy	.38***	.39***		4.16		
Live on campus		0.16		1.67		
Female		.21*		2.27		
Step 2					19***	0.38
VRI	.48***	.38***		4.17		0100
Tradition	.18*	-0.04		-0.48		
Conformity	.20*	0.09		0.82		
Hedonism	0.29**	18*		-1.98		
Stimulation	-0.07	0.06		0.51		
Model 1 (H5a1)					0.00	0.38
VRI x Tradition			0.03	0.18		
Model 2 (H5a2)					0.01	0 39
VRI x Conformity			-0.04	-0.35	0.01	0.07
Model 3 (H5b1)					0.02	0.41
VRI x Hedonism			0.29	1.84	0.02	
Model 4 (H5b2)					0.00	0.38
VRI x Stimulation			-0.03	-0.31		

Table 15. REGRESSION OF MODERATE DRINKING INTENTION ON VALUES AND VRI[H5a1, H5a2, H5b1, H5b2] (N = 101)

Note: This analysis only included those who plan to drink alcohol in the next 2 weeks Note: *p < .05, **p < .01, ***p < .001

	r	β	В	t	ΔR^2	Total R^2
Step 1					.07**	0.07
Greek		-0.27**		-3.06		
Step 2					.24***	0.31
VRI	.49***	.44**		5.67		
Universalism	.24**	.23*		2.55		
Benevolence	-0.003	-0.07		-0.84		
Hedonism	-0.05	0.04		0.43		
Power	-0.04	0.06		0.75		
Model 1 (H5a3)					0.00	0.31
VRI x						
Universalism			-0.12	-0.72		
Model 2 (H5a4)					0.00	0.31
VRI X Denevolance			0.01	0.02		
Benevolence			-0.01	-0.03		
$M_{adal} 2 (115h2)$					0.00	0.21
WDL v Hadaniam			0.12	0.75	0.00	0.51
VKIX HEDOMSM			-0.13	-0.75		
					0.00	0.21
WDL D			0.02	0.00	0.00	0.31
V KI x Power			0.03	0.29		

Table 16. REGRESSION OF INTENTIONS TO USE A CONDOM ON VALUES AND VRI [H5a3, H5a4, H5b3, H5b4] (*N* = 122)

Note: This analysis only included those who plan to have sex in the next three months Note: *p < .05, **p < .01, ***p < .001

	r	β	В	t	ΔR^2	Total R^2
Step 1					.29***	0.29
Self-efficacy	.48***	.49***		6.89		
Female		.23**		3.18		
Step 2					.09**	0.38
VRI	.45***	.29***		3.84		
Tradition	-0.05	-0.003		-0.04		
Conformity	0.003	0.02		0.20		
Stimulation	0.07	0.05		0.47		
Hedonism	0.02	0.11		1.29		
Model 1 (H5a5)					0.01	0.39
VRI x Tradition			-0.18	-1.24		
Model 2 (H5a6)					0.00	0.38
VRI x						
Conformity			0.08	0.71		
Model 3 (H5b5)					0.00	0.38
V KI X			0.00	0.50		
Sumulation			0.09	0.39		
Model 4 (H5b6)					0.01	0.39
VRI x Hedonism			-0.17	-0.98	0.01	0.07

Table 17. REGRESSION OF DIETING INTENTION ON VALUES AND VRI [H5a5, H5a6, H5b5, H5b6] (N = 136)

	r	β	t	ΔR^2	Total R^2
Step 1				.19***	0.19
Self-efficacy	.38***	.40***	4.41		
Live on campus		0.15	1.59		
Female		.18*	2.01		
Step 2				.04*	0.23
ATT	.25**	0.19*			

Table 18. REGRESSION OF MODERATE DRINKING INTENTION
ON ATTITUDE [H6] (N = 102)

Note: This analysis only included those who plan to drink alcohol in the next 2 weeks Note: *p < .05, **p < .01, ***p < .001

	r	β	t	ΔR^2	Total R^2
Step 1				.06**	0.06
Greek		17*	-2.19		
Step 2				.24***	0.31
ATT	.51***	.50***	6.55		

Note: This analysis only included those who plan to have sex in the next three months Note: *p < .05, **p < .01, ***p < .001

	-				
	r	β	t	ΔR^2	Total R^2
Step 1				.26***	0.26
Self-Efficacy	.48***	.48***	6.84		
Female		.19**	2.69		
Step 2				.12***	0.38
ATT	.47***	.37***	5.22		

Table 20. REGRESSION OF DIETING INTENTION ON ATTITUDE [H6] (N = 150)

Note: ***p* < .01, ****p* < .001

	r	β	В	t	ΔR^2	Total R^2
Step 1					.19***	0.19
Self-efficacy	.38***	.37***		3.86		
Live on campus		0.13		1.38		
Female		.21*		2.24		
Step 2					.25***	0.44
ATT	.25**	0.14		1.65		
VEC	.47***	.39***		4.51		
Tradition	.18*	-0.01		-0.02		
Conformity	.20*	0.12		0.99		
Hedonism	-0.29**	-0.16		-1.72		
Stimulation	-0.07	0.12		1.11		
Model 1 (RQ1a)						
Step 3					0.002	0.44
ATT x VEC			-0.03	-0.28		
ATT x Tradition			-0.06	-0.31		
VEC x Tradition			0.02	0.19		
Step 4					0.01	0.45
ATT x VEC x Tradition			0.13	1.27		
Model 2 (RQ1b)						
Step 3					0.01	0.45
ATT x VEC			-0.05	-0.57		
ATT x Conformity			0.10	0.60		
VEC x Conformity			0.04	0.38		
Step 4					0.01	0.46
ATT x VEC x Conformity			-0.12	-1.29		
Model 3(RQ2a)						
Step 3					0.02	0.46
ATT x VEC			-0.05	-0.59		
ATT x Hedonism			-0.17	-0.78		
VEC x Hedonism			0.28	1.62		

Table 21. REGRESSION OF MODERATE DRINKING INTENTION ON VALUES, ATTITUDE, VEC (N = 95)

	r	β	В	t	ΔR^2	Total R^2
Step 4					0.02	0.48
ATT x VEC x						
Hedonism			0.31	1.86		
Model 4(RQ2b)						
Step 3					0.02	0.70
ATT x VEC			-0.05	-0.86		
ATT x Stimulation			-0.04	-0.19		
VEC x Stimulation			-0.13	-0.63		
Step 4					0.04	0.74
ATT x VEC x						
Stimulation			0.14	1.61		

Table 21. CONT'D

Note: This analysis only included those who plan to drink alcohol in the next 2 weeks Note: *p < .05, **p < .01, ***p < .001

	r	в	В	t	ΛR^2	Total R^2
Step 1		Ρ	2		.07**	0.07
Greek		-0.27**		-3.01		
~ •					• • • • • •	
Step 2		0.40		4.00	.29***	0.36
ATT	.51***	0.43***		4.83		
VEC	.38***	0.15		1.78		
Universalism	.24**	0.18		1.98		
Benevolence	0.00	-0.09		-1.13		
Hedonism	-0.05	-0.03		-0.41		
Power	-0.04	0.11		1.22		
Model 1 (RQ1c)						
Step 3					0.01	0.37
ATT x VEC			0.02			
ATTx UNIV			-0.21			
VEC x UNIV			-0.13			
			0.15			
Step 4					0.00	0.37
ATT x VEC x UNIV			-0.03	-0.12		
Model 2 (RO1d)						
Step 3					0.02	0.38
ATT x VEC			0.09	0.87		
ATTx BEN			0.62	1.54		
VEC x BEN			-0.31	-1.33		
Stop 4					0.02	0.4
SICP 4			0.20	1 70	0.02	0.4
ATTX VEC X BEN			0.38	1./8		
Model 3 (RQ2c)						
Step 3					0.01	0.37
ATT x VEC			0.02	0.16		
ATTx HED			0.33	1.01		
VEC x HED			-0.16	-0.82		
Step 4					0.01	0.38
ATT X VEC X HED			-0.44	-1.26		

Table 22. REGRESSION OF CONDOM USE INTENTION ON VALUES, ATTITUDE, VEC (N = 117)

	r	β	В	t	ΔR^2	Total R^2	
Model 4 (RQ2d)							
Step 3					0.001	0.36	
ATT x VEC			0.02	0.16			
ATTx PWR			0.04	0.14			
VEC x PWR			-0.01	-0.06			
Step 4					0.02	0.38	
ATT x VEC x PWR			-0.26	-1.87			

Table 22. CONT'D

Note: This analysis only included those who plan to have sex in the next three months Note: *p < .05, **p < .01, ***p < .001

	r	β	В	t	ΔR^2	Total R^2
Step 1					.30***	0.30
Self-efficacy	.48***	.49***		6.91		
Female		.22**		3.11		
Step 2					.10**	0.40
ATT	.47***	.33***		4.28		
VEC	.28***	0.03		0.4		
Tradition	-0.05	0.01		0.08		
Conformity	0.003	-0.01		-0.11		
Stimulation	0.07	0.06		0.63		
Hedonism	0.02	0.06		0.6		
Model 1 (RQ1e)						
Step 3					0.01	0.41
ATT x VEC			-0.12	-0.22		
ATT x TRAD			-0.04	-0.32		
VEC x TRAD			-0.15	-1.18		
Step 4					0.01	0.41
ATT x VEC x TRAD			-0.10	-1.09		
Model 2 (RQ1f)						
Step 3					0.00	0.40
ATT x VEC			-0.01	-0.10		
ATT x CONF			0.05	0.49		
VEC x CONF			-0.08	-0.74		
Step 4					0.00	0.40
ATT x VEC x CONF			0.03	0.56		
Model 3 (RQ2e)						
Step 3					0.00	0.40
ATT x VEC			-0.01	-0.21		
ATT x HED			-0.03	-0.18		
VEC x HED			-0.003	-0.02		

Table 23. REGRESSION OF DIETING INTENTION ON VALUES, ATTITUDE, VEC (N = 138)

	r	β	В	t	ΔR^2	Total R^2
Step 4					0.00	0.40
ATT x VEC x HED			-0.01	-0.13		
Model 4 (RQ2f)						
Step 3					0.00	0.40
ATT x VEC			-0.01	-0.21		
ATT x STIM			-0.01	-0.09		
VEC x STIM			0.14	0.88		
Step 4					0.00	0.40
ATT x VEC x STIM			0.01	0.15		

Table 23. CONT'D

Note: ***p* < .01, ****p* < .001

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