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CULTURAL DIFFERENCE IN THE PERSUASIVE IMPACT
OF A ROLE NORM MESSAGE

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SANG-YEON KIM

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CULTURAL DIFFERENCE IN THE PERSUASIVE IMPACT OF A ROLE NORM MESSAGE

By

Sang-Yeon Kim

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ABSTRACT

CULTURAL DIFFERENCE IN THE PERSUASIVE IMPACT
OF A ROLE NORM MESSAGE

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Sang-Yeon Kim

This study examines the persuasive impact of role norm appeal relative to the persuasive impact of traditional social norm strategies. Role norms constitute a particular form of social norms, stipulating what one ought to do as the holder of a particular role. This study hypothesizes that a role norm appeal produces greater persuasion than a social norm appeal, because social sanctions from related others tend to be perceived as more threatening than social sanctions from those that are unrelated .This study also predicts a relatively greater persuasive impact of role norm appeals in holistic cultures versus analytic cultures because holists tend to manifest a greater role-dependency compared to their analytic counterparts.

The predictions were examined employing a 2 (U.S., Korea) × 3 (role norm, social norm, no-norm control) independent groups design (N_{TOT} = 702; N_{US} = 412, N_{KOR} = 290). These three groups argue separate messages: firstly, that college students should avoid excessive drinking as a responsible child of his/her parents; second that excessive drinking is avoided because the person is a responsible community member; and lastly that drinking is avoided for the subject's own good, respectively. The participant's own behavioral intention (BI) and the projected behavioral intention of others (PBI) served as major dependent variables. Neither the main effect for treatment, nor the culture by treatment interaction, were statistically significant at level α = .05. However, a participant's culture had a significant main impact on both BI and PBI; across conditions,

Korean students' BI and PBI scores indicated lower intentions to drink than the U.S. students. Path analyses indicate that, across cultures, social norm factors exert only minor impacts on behavioral intention; whereas participants' perception of problem severity explains more variance. Path models also suggest that Korean participants take a dual cognitive processing in which BI and PBI are explained by two separate sets of variables. This tendency remained less pronounced among the U.S. participants.

Dedicated to my wife, Yeol-Hee Lee, who has willingly sacrificed
six years of her youth for my doctoral study.

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Literature Review

Social Norms and Persuasion

Considerable scholarly energy has been devoted across many disciplines of social science to the understanding of the influence of social norms on human behavior. Anthropologists have long investigated the nature of social norms as the key to understanding the basic principles of society (e.g., Malinowski, 1926). Sociologists (e.g., Birenbaum & Sagarin, 1976; Nadel, 1957; Piddocke, 1968) and students of law (e.g., McAdams, 1997; Sustein, 1996) have produced a vast literature on aspects of social norms, particularly social norms' contributions to the maintenance of a social order without resorting to legal measures. Persuasion scholars have been investigating ways to maximize the effect of social norms in inducing pro-social behavior among the public (e.g., Cialdini, Reno, & Kallgren, 1990; Reno, Cialdini, & Kallgren, 1993).

Across this broad spectrum of applications, the concept of "social norms" has typically been defined as having two elements: (a) a consensus on the patterns of behavior considered to be desirable by most members of a collective, and (b) social enforcement, where compliers are rewarded, defectors are punished, or both (Birenbaum & Sagarin, 1976; Malinowski, 1926; Nadel, 1957; Piddocke, 1968). Individuals raised in the same culture come to develop a similar rule set stipulating which behaviors and value systems correspond or contradict those desired by the majority of people. Possessing a code of conduct presumed to be shared by most others, one can predict, albeit roughly, whether his or her behavior will be viewed as acceptable if executed in public. This ability to predict potential social consequences of one's behavior functions as an internal regulator that encourages pro-social behaviors and discourages anti-social behaviors,

because by so doing, one can gain social approval and avoid potential consequences for violating rules. Consistent with these observations, this study defines social norms as *a set of socially shared guidelines to the expected behavioral patterns whereby social order is spontaneously maintained through social enforcement.*

While symbolic interactionists have paid more attention to the process in which a social consensus evolves, and how it becomes internalized in the minds of individual members of the society (Blumer, 1969; Mead, 1934), the concept of social sanctions has attracted continued interest from social psychologists as they examine direct and indirect normative influences on human behavior (Firth, 1958; Homans, 1950; Piddocke, 1968). Firth (1958) and Piddocke (1968) in particular point out that one's decision to carry out a particular action is immediately determined by the actor's projection of potential social sanctions as well as personal predispositions or habits.[1]

Cialdini and colleagues (1990, 1993, 2000) are among many persuasion scholars who have successfully demonstrated the influence of social norms in inducing pro-social behavior. In particular, the researchers devoted a series of field experiments to test the effectiveness of anti-littering social norms on curtailing littering in public space (Cialdini, Reno, & Kallgren, 1990; Kallgren, Reno, & Cialdini, 2000; Reno, Cialdini, & Kallgren, 1993). In the main, the data were consistent with the prediction; targets in whom the anti-littering social norm had been induced were less likely to litter than were the targets in whom the anti-littering social norm had *not* been induced. Particularly, an increase in the

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[1] This premise holds true to the extent that social sanctions, especially punishments, are indeed perceived as such by most members of the society; a death penalty may *not* be valued as punishment for a martyr and thus would exert little influence on her religious behavior (Piddocke, 1968). Whether it be a direct physical attack from the community, restricted freedom of action, a ruined self-image, or feelings of shame or anxiety, a social sanction must be an external or internal measure that arouses at least minimal displeasure in the norm violator. A social norm that tells what is desired but unsubstantiated by sanctions is what we call an ideal (Homans, 1950).

strength of an induced anti-littering social norm produced a proportionate decrease in littering. Cialdini and associates (1990, 1993, 2000) attributed this outcome to the salience of the experimental stimulus. Cialdini et al. opined that most social norms tend to remain dormant in the human mind until becoming cognitively accessible to the target through a salient stimulus, and posited that the probability of norm conformity enhances as the stimulus becomes more salient. This is because a more salient stimulus can render the pertinent social norms, and thus potential social sanctions, more noticeable to the target (see Rimal & Lapinski, 2005).

To the extent that this premise is correct, a social norm which is made more accessible to the target's cognition should produce an increased norm conformity. This study thus proposes that a stronger norm congruence maybe inducible by invoking the target's role norms than by inducing other types of social norms.

A social role refers to *a position endowed to a person fulfilling expected duties in a particular relationship.* That is, a social role does *not* exist until one enters a relationship *and* plays a part complementary to that of the counterpart(s) in that particular relationship (Banton, 1965; Nadel, 1957). For example, in order for a man to be a legitimate father, he must enter a father-child relationship and perform a set of obligations for relationship maintenance. Demonstrably, no doctors would exist in that role of "doctors" in the absence of patients that have to be treated.

In particular, the relational duties expected of a role holder can be referred to as role norms, hereby defined as *"a set of norms and expectations applied to the incumbent of a particular position"* (Banton, 1965, p. 29). Role norms are a particular form of social norms exclusively confined to the role-specific behavior domain. That is, role norms

operate only within the domains where the interactants communicate as 'role players,' whereas social norms cover the whole gamut of social interactions including those in which individuals need *not* be identified as a role bearer. For example, social norms and role norms provide an equal set of instructions as to what one ought to do as a parent, a student, a manager, a romantic partner, etc. But it is only more general social norms that remain valid beyond the relational boundaries, requiring, for example, to follow basic table manners, not to pick nose in the presence of others, not to stare at people, and so on.

As mentioned, social norms include role norms. For convenience, however, this study limits the scope of social norms exclusively to public domains where interactants feel little role obligations to the other(s) due to the absence of a perceivable relationship. Social titles as 'community member' or 'fellow citizen,' for example, are nominal in nature, requiring minimal expectations about what one ought to do for the other(s), and would thus fall into the domain of social norms.

A corollary of this view is that role norms comprise the anticipations from related others whereas social norms represent the expectations of unrelated others. To the extent that the expectations from related others are more salient in human minds than the expectations from unrelated others, people should also perceive the sanctions from related others as more threatening than the sanctions from unrelated others. It further follows that norm-congruent pro-social actions are more likely to occur in the targets in whom role norms have been invoked, opposed to the targets in whom social norms have been induced. Following this reasoning, this study proposes its first hypothesis as follows.

H1: Persuasion messages using role-norm appeals are more effective in promoting pro-social behaviors than the persuasion messages using more general social

norm appeals.[2, 3]

Cross-Cultural Difference in the Impact of Role Norm Appeals

Cross-cultural researchers have invested significant effort to understanding the causes and consequences of cultural differences. Culture itself is a very broad concept, and depending on which aspects of culture is highlighted, some find the cause of cultural divides in the difference in language (Hamaguchi, 1977; Kashima & Kashima, 1998; Lebra, 1976), in context-dependency (Hall, 1976), in history of philosophy (King, 1985; Munro, 1985), in perception of self (Markus & Kitayama, 1991, 1998; Kashima et al., 2004), in worldview (Nisbett, 2003), or in the structure of society (Lim, 2002; Lim, Allen, Burrell, & Kim, 2007).

One observation is that behind these diverse frames of reference lies a common assumption that there exists a substantial cultural difference in context-dependency, particularly between Europeans and East Asians. For example, Kashima and Kashima (1998) documented a context-dependency of Japanese culture by the fact that, in Japanese language, the reference to self (i.e., first person singular pronoun) takes different forms according to varying relational contexts. Hall (1976) pointed out that Easterners' communication depends more on contextual cues, whereas Westerners tend to focus more on the message itself as the primary source of meaning. Markus and

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[2] Some may argue that role norms are conceptually identical to subjective norms (Ajzen, 1985; Fishbein & Ajzen, 1975), which refer to one's perception of norms dominant in his/her reference group (e.g., *'what my family would expect me to behave'*). Subjective norms, however, lack social desirability that is by definition imbedded in role norms (e.g., *'what you ought to do as a parent'*). The norms active in one's family, for instance, are a combination of the social norms universally embraced by most other families *and* the norms idiosyncratic to that particular family. It is determined that the former conveys social desirability while it remains probabilistic if so does the latter. Therefore, the norm-congruent actions induced by a subjective norm appeal might be either pro- or anti-social in nature. But the norm-conforming behaviors that a role norm appeal produces should always be pro-social.

[3] It should be also noted that the discussion of social norms and role norms here focuses on what Cialdini et al. (1990, 1993, 2000) call injunctive norms.

Kitayama (1991, 1998), Kashima et al. (2004), and Lim et al. (2007) have proposed that East Asians' perception of self tends to vary depending on whom they communicate with at the moment while one's identity tends to remain relatively unaffected by the relational contexts in European cultures.

Recently, Nisbett (2003) and Nisbett, Peng, Choi, and Norenzayan (2001) have used a similar approach to explain cultural differences in the way of understanding and perceiving the world. Specifically, Nisbett (2003) proposes that Europeans, the descendants of ancient Greek culture, tend to possess an analytic worldview. East Asians, as the offspring of Chinese tradition, manifest a holistic tendency. This new scheme - the distinction of analytic versus holistic cultures - posits that individuals raised in societies where analytic world views prevail tend to see the world as an aggregate of objects separable from one another and from the context that they belong to. In analytic cultures, objects dissociated from the context receive cognitive attention in a belief that knowing individual objects' internal attributes provide a reliable means of understanding physical and social phenomena. This cultural assumption implies that fundamental characteristics of an individual object remain relatively constant, independent of other objects and varying contexts. In contrast, Nisbett postulates that East Asians with a holistic worldview tend, as a whole, to see things in context, or are less apt to distinguish individual objects from the pertinent background. To holists, everything is interrelated and the attributes of an object change depending upon where the object is situated. Hence, the knowledge of a separated object is considered to be of little use to understand the world. Instead, knowing how things are related and being able to see their relational dynamics in context is regarded as important in holistic cultures.

Existing data corroborate the assertion that analysts tend to perceive things independent of context, whereas holists' perception of the world is more context-bound. For example, Japanese participants tended to recall better the objects placed in the background of a visual stimulus (e.g., water, rocks, or plants in an aquarium) whereas American participants were more likely to report on the objects in the foreground (e.g., big fish in the same aquarium; Masuda & Nisbett, 2001). Also, among Japanese participants, the retention rate of a previously shown object was significantly lower when the same stimulus was presented again later against a different background than when the visual context remained unchanged. American participants, however, maintained an equal retention rate across conditions (Masuda & Nisbett, 2001). In Morris and Peng's (1994) study, Chinese participants tended to view situational factors as more important causes of a fictitious murder case, whereas American participants were more likely to evaluate the murderer's presumed personality traits as the primary cause of the murder (see Nisbett, 2003 for review of other related findings).

Given Nisbett's (2003) postulate, it should follow that analysts' perception is less sensitive to social roles whereas holists' perception is more sensitive to social roles. This is because, as mentioned, social role is by definition context-bound.[4] Role recognition necessitates relational context, which changes constantly according to the object of communication. A social role comes to exist only in the presence of a relationship whether it be marriage, familial, friendship, or companion. One is a husband 'in relation' to his wife, a father 'in relation to' his child, a friend 'in relation to' his/her friend, an

[4] This reasoning implicates an association between cognitive context dependency and sensitivity to social roles. Consistent with this conjecture, Dershowitz (1971) found out that children who had received domestic education that spells out role relations are more likely to manifest a field dependency, an inclination that one's perception of objects being influenced by the background, compared to children from normal families.

employee 'in relation to' his/her boss, etc. A social role *cannot* hold independent of the counterpart assuming a reciprocal role in that particular relationship (Banton, 1965). This notion implies that one's social role keeps changing from one to another as he/she travels through various relational contexts (see James, 1950). One assumes the role as a parent when communicating with a child but acts out a student role at school, particularly before a professor. Thus, staying sensitive to varying contextual cues is imperative to role recognition.

To the extent that the preceding reasoning is correct, whether or not a role factor is made apparent in a persuasion message should create a more pronounced perceptual difference among people from holistic cultures than among people from analytic cultures. This is primarily because holists are more role-sensitive and thus more likely to catch and incorporate role-related information in forming impressions of the message whereas analysts, who are relatively insensitive to social roles, would have a limited chance to do so. Presuming that it is a pan-cultural tendency for people to experience the potential sanctions from related others as more threatening than the sanctions from unrelated others, and to the extent that a proximate social sanction is more likely to produce a pro-social behavior than would a social sanction perceived as distal, holists should manifest the same behavioral tendency of analysts but to a greater magnitude. That is, a role-norm appeal should promote pro-social actions from holists more than it does from analysts, and a social-norm appeal should demote pro-social actions from holists more than it does from analysts.

In fact, it has been documented repeatedly that East Asians tend to discriminate against people in whom they find little relational connection, while offering greater

generosity to people tied in any form of relationship (King, 1985; Triandis, 1995). Cross-cultural psychologists (DeVos, 1973; Hamaguchi, 1977; Lebra, 1976; Lim, 2002; Lim, Allen, Burrell, & Kim, 2007; Triandis, 1995) and philosophers studying culture (King, 1985; Munro, 1985) postulate that role-dependency, which characterizes the essence of holistic culture, constitutes the primary cause of discrimination based on presence or absence of relational connections. Specifically, Munro (1985) and Lim, Allen, Burrell, and Kim (2007) conjecture that individuals in holistic societies are viewed as mutually interdependent parts of a whole, fulfilling complementary roles assigned *by* the whole, not as autonomous yet unique-different individuals as in analytic cultures.[5] Holists are, thus, more likely to self-identify as a role player that attains significance only when functioning in the role within the whole but turns into a meaningless entity when separated from the whole or dissociated from related others (DeVos, 1973; Hamaguchi, 1977; Lebra, 1976). Empirical findings indicate that the descendants of holistic cultural heritage tend to identify themselves by referring to their social roles and often experience difficulties describing self *not* using role terms (Bachnik, 1994; Cousins, 1989; Cross, Kanagawa, Markus, & Kitayama, 1995; Ip & Bond, 1995; Lim, Allen, Burrell, & Kim, 2007; Markus, Mullally, & Kitayama, 1997; Rhee et al., 1995; Snyder & Gangestad, 1986).

The conjecture that holists' identity originates from their social roles translates that one's significance as a social entity comes from the presence of related others, namely the ones that imbue the otherwise insignificant with meanings. Fulfilling one's

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[5] In their original works, Munro (1985) and Lim et al. (2007) maintained the traditional term 'individualistic culture' to refer to the cultural characteristics of East Asian nations, which is represented by 'analytic cultures' in Nisbett's book (2003). Simply for the sake of communication with readers, this study chose to use the term 'analytic' consistently throughout this manuscript.

relational duties to other(s) in a relationship may thus be commensurate with respecting the actor him/herself as well as the counterpart and the relationship itself. In contrast, unrelated others should remain as unimportant social objects because of their inability to invoke an identity as a social being. Particularly, in situations where unrelated individuals communicate, there remain few rules on appropriate treatment of the counterpart or interaction rituals of politeness. Once released from all relational ties, East Asians are freed from all social restrictions regulating utterances and behaviors.[6] For this reason, Chinese philosophers have warned that Chinese people, as a whole, can be cold-hearted or extremely impolite to people in whom they find few meaningful relational connections (King, 1985; see also Triandis, 1995). Building upon the preceding accounts of holistic culture, this study proposes a second set of hypotheses (see Figure 1).

H2: The difference in magnitude between the persuasive impact of role-norm appeals and the persuasive impact of social-norm appeals is more pronounced in holistic cultures than in analytic cultures.

H2a: A role norm appeal promotes pro-social actions more among holists than analysts.

H2b: A social norm appeal demotes pro-social actions more among holists than analysts.

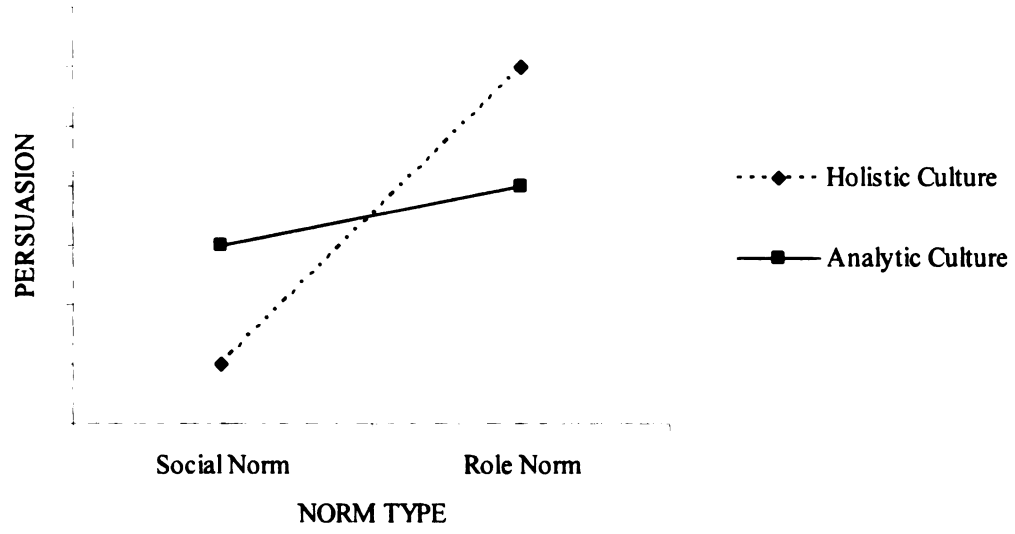
Method

Participants

Participants (N_{TOT} = 851) were recruited from the U.S. (N_{US} = 469) and South

[6] The basic disciplines of Confucianism, one of the most influential life principles among most East Asian countries, have been teaching for centuries about what one ought to do in certain specific relationships but reticent on how one should behave outside those relational contexts (King, 1985; Markus, Mullally, & Kitayama, 1997).

Figure 1 *Predicted Cultural Difference in Persuasive Impact of Role-Norm and Social-Norm Appeals*



Korea (N_{KOR} = 382) to constitute a sample of an analytic and a holistic culture, respectively. The experiment was advertised in social science classes including communication, sociology, and journalism, in both nations. The investigator was also able to reach potential American participants outside these classes using an online subject pool operated in the Communication Department at Michigan State University. Students participated in the experiment online by accessing a designated website where the experiment stimuli and measurement sets were posted. Research credits were awarded in exchange for participation.

Duplicate responses were screened by examining registered IP addresses and the time points at which a particular respondent began and finished the experiment. All responses associated with an IP address that appears more than once in the server were considered as duplicates and deleted (Lehmiller, 2008). However, the duplicate response preceding all others sharing the same IP address was retained, noting that the participant's first response *cannot* be contaminated by how he/she responded in a later session. Multiple responses were further detected by participant's student ID numbers and excluded from the data set following the same procedure. In total, 125 responses were identified as duplicates, and thus eliminated from the data set. The file containing participants' IP addresses and student ID numbers were permanently destroyed after cleaning the data.

Approximately 2 percent (n = 10) of the U.S. participants came from countries out of research interest (e.g., Latin America and Middle East) and were excluded from the U.S. sample. Chinese participants constituted 5.2 percent (n = 15) and Japanese participants accounted for .3 percent (n = 1) of the Korean sample. Responses from

Chinese or Japanese participants were kept considering that both countries manifest the holistic cultural tendency as in Korea (see Nisbett, 2003). Responses from one Latin American subject were deleted from the Korean data set. Also deleted were responses from participants who failed to report their cultural origin (n = 13).

After eliminating duplicate responses and the responses from cultures out of research interest, the sample size has reduced to N_{TOT} = 702; N_{US} = 412 and N_{KOR} = 290. Sixty six percent of the U.S. sample were females. Mean age was 19.98 (SD = 1.56). Females constituted 48 percent of the Korean sample, with the mean age of 21.94 (SD = 2.43).

Experiment Design

The predictions were examined employing a 2 (U.S., Korea) × 3 (role norm, social norm, no-norm control) independent groups design. Participants from each country were randomly assigned to one of the three treatment conditions, resulting in n_{role} = 143, n_{social} = 143, and $n_{control}$ = 126 in the U.S. sample, and n_{role} = 94, n_{social} = 104, and $n_{control}$ = 92 in the Korean sample.

Procedure

Upon entering the experiment website, participants were asked to read the assigned message and evaluate it using a set of Likert-type items. The role norm, social norm, and no-norm control messages warned against the habit of excessive drinking among college students, the potential subject pool of this study. The role norm condition and the social norm condition were created by varying the norm type that the message uses to dissuade excessive drinking around campus. Specifically, the role norm message

indicated that potential negative consequences of excessive drinking may fall on their parents as well as themselves, emphasizing that avoiding excessive drinking is a part of fulfilling duties as a responsible child of their parents (i.e., *"Your parents have been sacrificing themselves to raise you for almost twenty years. Now, they just want you to be safe and healthy. Drink responsibly. Responsible children do not make their parents suffer!"*). On the other hand, the social norm message reminded the reader that excessive drinking may hurt other innocent community members, urging the reader to implement the duties as a responsible community member (i.e., *"Drink responsibly. Responsible community members do not make other fellow members suffer!"*). The no-norm control message attempted to deter excessive drinking without using norm appeals; it simply discussed potential negative consequences for the excessive drinker him/herself (i.e., *"Drink responsibly. Protect yourself!"*).

The quality of the argument remained strong across conditions. The arguments themselves presented factual or statistical evidence from qualified sources. The evidence was obtained from the website of "University Mothers Against Drunk Driving" or UMADD (2009), a nationwide organization established to help prevent college binge drinking at community level (see Appendices A and C for English messages and measures, respectively). All experimental materials were administered in the primary language spoken in the country in which the data were collected. The initial survey was created in English, and then translated and back-translated into Korean by native Korean speakers to ensure equivalence of meaning (Brislin, 1980; see Appendices B and D for Korean messages and measures, respectively).

Measures

Induction check. Eight 5-point Likert items (1 = *strongly disagree* and 5 = *strongly agree*) were used to assess if the treatment message has induced its corresponding norm type as intended. The first four items checked if the message had manipulated the role norm (i.e., the role as a responsible child), and the latter four items tapped into the perceived salience of social norm (i.e., the role as a responsible community member). To the extent that the message induction was successful, higher ratings should result from the first four items *and* lower ratings from the latter four items for the role norm condition. The opposite trend should indicate successful induction for the social norm condition. Lower scores should result from all the eight items provided that the no-norm control message has induced neither.

Included items were "This message points out that avoiding excessive drinking is a way of becoming a responsible child of my parents," "This message appeals to my role obligation as the child of my parents," "This message argues that I avoid excessive drinking as a responsible child of my parents," "This message indicates that excessive drinking may prevent me from functioning as a responsible child of my parents." "This message points out that avoiding excessive drinking is a way of becoming a responsible community member," "This message appeals to my role obligation as a community member," "This message argues that I avoid excessive drinking as a responsible community member," and "This message indicates that excessive drinking may prevent me from functioning as a responsible community member."

Perceived salience of social sanction. To test the rationale that role norm appeals can exert a greater conformity than social norm appeals via the enhanced perception of social sanction, measures of perceived salience of social sanction were included in the

survey as a mediator. Four 5-point Likert-items (1 = *strongly disagree* and 5 = *strongly agree*) measured the perceived salience of social sanction. Included items were "I feel like people would think less of me if I drank excessively," "People would disapprove of me if I drank excessively," "Our society views heavy drinkers negatively," "Society is intolerant of excessive drinking."

Locus of consequence. Powell (1965) found that the effectiveness of a fear appeal becomes greater when the potential consequences of non-compliance were cast on the target's family, than when the expected ramifications were said to affect the nation or the target himself (i.e., men with family). This finding led to an alternative explanation that the role norm message may produce more persuasion than does the social norm message, due to the locus of potential consequences being nearer to the subjects in the former (i.e., parents) than to the subjects in the latter (i.e., community) *not* because of the perceived social sanctions being made more salient in the role norm condition than in the social norm condition. This study attempted to measure and statistically control the potential nuisance effect of the locus of consequence to document a separate main impact of perceived norm salience in inducing pro-social behavior.

Four 5-point Likert-items (1 = *strongly disagree* and 5 = *strongly agree*) measured the perceived locus of consequences of excessive drinking. Included items were "This message shows that excessive drinking will have consequences for people that are close to me," "This message demonstrates the negative effects of excessive drinking that people close to me are likely to face," "This message indicates that my excessive drinking may affect people close to me," and "This message claims that people

close to me can be the potential victims of my excessive drinking." [7]

Personal and projected behavioral intention. Personal and projected behavioral intentions were the primary dependent measures. Five 5-point Likert-items (1 = *not at all* and 5 = *very much*) were used to assess the strength of participant's behavioral intention to avoid excessive drinking. Included items were "I would be willing to sign a petition supporting regulation on excessive drinking," "I will try to drink less in the future," "I will avoid excessive drinking," "If I drink, I will drink in moderation," "I would be willing to ask my friends to drink less," and "I would be willing to talk to my friends about binge drinking issues."

Also included were another four 5-point Likert-items (1 = *not at all* and 5 = *very much*) that purport to measure participants' projected behavioral intention of other readers. Included items were "Many of those who read this message will avoid excessive drinking to the best that they can," "Most people who read this message will try not to drink excessively," "People who read this message will try dissuading their significant others from excessive drinking," "Most people will NOT quit excessive drinking because of this message (R)."

Other potential mediators: A potential threat to the internal validity of this experiment involves the treatment messages' difference in content. That is, all three messages claimed that excessive drinking may cause serious damages, yet each approach uses different facts in doing so. In particular, the role norm appeal introduced, for example, how many college students die from excessive drinking every year, and then

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[7] In these items, the locus of potential consequences, either community or parents, were left unspecified but made to vary in relational closeness to make the resulting scores comparable between the role norm and the social norm condition. This arrangement assumes that people feel closer to their parents than other, mostly unknown, community members.

reminded that the same number of parents are losing their children to excessive drinking. The social norm appeal, on the other hand, discussed statistics on misdemeanors often committed by heavy drinkers in public space (e.g., picking fights with strangers, damaging public properties, or killing innocent people while driving under the influence of alcohol). To control for the potential nuisance effect for the messages being confounded, two additional measures were attached to the survey; argument quality and perceived severity of drinking problem. Six 5-point Likert items (1 = *strongly disagree* and 5 = *strongly agree*) measured perceived argument quality. Included items were "The argument of this message is strong," "valid," "flawed (R)," "high in quality," "weak (R)," and "invalid (R)." Four 5-point Likert items (1 = *strongly disagree* and 5 = *strongly agree)* tapped into perceived severity of drinking problem. Included items were "Excessive drinking among students leads to severe and undesirable consequences," "is a serious problem," "is dangerous," and "is NOT a serious problem (R)."

Descriptive and injunctive norm.[8] Descriptive norm of drinking among college students was estimated using six 5-point Likert items (1 = *strongly disagree* and 5 = *strongly agree*). Included items were "It is commonplace that college students drink excessively (R)," "Most college students drink excessively now and then (R)," "Excessive drinking is prevalent among college students (R)," "Few college students drink excessively," "In general, college students tend to drink too much on occasions (R)," and "It is usual that college students consume alcohols excessively (R)."

Five 5-point Likert items measured students' injunctive norm of drinking (1 = *strongly disagree* and 5 = *strongly agree*). Included items were "Most college students

[8] For an easier interpretation of results, the responses were recoded such that higher ratings indicate a greater anti-drinking descriptive norm or a greater anti-drinking injunctive norm.

consider excessive drinking to be acceptable (R)," "Most students object to excessive drinking among college students," "At my university, it is okay for college students to drink excessively (R)," "Most students at my university would think that college students should not drink excessively," "Most students at my university disapprove of excessive drinking among college students."

TRA measures.[9] To explore for the potential impact of participant's subjective norm on the behavioral intention, measures of subjective norm of drinking and motivation to comply were included. Both measures were sub-divided into two separate sets according to the targeted reference group; parents and community.

Subjective norm of drinking in family was tapped into by using six 5-point Likert items (1 = *strongly disagree* and 5 = *strongly agree*). Included items were "Excessive drinking is acceptable in my family (R)," "My parents object to excessive drinking," "My parents think it is okay that I drink excessively (R)," "My parents think that I should not drink excessively," "My parents allow excessive drinking (R)," "My parents disapprove of my excessive drinking." The measures of subjective norm of drinking in community were created simply by replacing the word 'parents' and 'family' by 'community' and 'other members of my community,' respectively.

Five 5-point Likert items measured participant's motivation to comply with parents (1 = *strongly disagree* and 5 = *strongly agree*). Included items were "It is important that I obey my parents," "It is okay for me to disobey my parents (R)," "It is important that I do as my parents wish," "It is important that I meet the expectations of my parents," and "I want to do what my parents would think is a good thing." Another

[9] As in the measures of descriptive norm and the measures of injunctive norm of drinking, the responses were recoded for higher scores to represent a greater anti-drinking subjective norm.

five 5-point Likert items were used to assess participant's motivation to comply with the norm of community. Included items were "It is important that I conform to the norms of my community," "It is okay for me to violate the norms of my community (R)," "It is important that I do as other community members would wish," "It is important that I meet the expectations of other community members," and "I want to do what other community members would think is a good thing."

Tests of Measurement Invariance

Before testing the current hypotheses, all scales were subjected to measurement invariance tests for cultural differences. A set of items may produce factor loadings that are different in sign, magnitude, or both, across cultures due to unclear wordings or meanings that may have been lost or added in translation. Removal of such items enhances confidence that the cultural tendencies were comparable based on latent constructs functionally equivalent across cultures.

Exploratory Factor Analysis (EFA) preceded the measurement invariance tests whenever the investigator was unsure about the factor structure of a given set of items. Principal Axis Analysis was conducted and the emergent factor loadings were rotated using Varimax Method for separate cultures. Only the items that consistently loaded on a same factor for both cultures were kept and then put into subsequent Confirmatory Factor Analyses (CFA) for measurement invariance tests. Factor structures obtained by EFAs were maintained in CFAs with no further adjustments. Missing values were imputed using Full-Information Maximum Likelihood Method (FIML; Little & Rubin, 2002) to produce more precise fit indices and parameter estimates.

Tests of measurement invariance were performed according to a conventional

procedure (Muthén & Muthén, 1998-2004; Steenkamp & Baumgartner, 1998) which comprises the following four phases: (a) separate CFAs were conducted for each culture to see if the same factor structure holds across cultures; (b) a chosen factor structure was compared with the data from both cultures simultaneously, this time with all the parameters freed; (c) phase (b) was repeated with restrictions on the parameters; (d) finally, the model was fitted to the entire means-covariance structure for both cultures simultaneously. At each phase, items producing relatively large errors were eliminated to enhance model-data fit. Efforts were made to preserve the reliability of resulting estimates; when the deletion of a particular item led to a minimal improvement of the fit, the item was kept to maintain an acceptable level of degrees of freedom. Using this elimination rule, it was ensured that each latent construct has at least three indicators at the final phase.

The fit of each model was estimated with M*plus* (Muthén & Muthén, 1998-2004) with Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA) as fit indices. CFI compares the obtained covariance matrix to the predicted model and to a baseline null model in which all the variables included in the covariance matrix are set to be uncorrelated. As CFI approaches 1, the obtained covariance matrix better approximates the predicted model relative to the null model, and 0 for the opposite case. As an approximated rule of thumb, a CFI of .90 or higher represents a reasonable model fit. RMSEA computes the overall distance between the observed and the predicted covariance matrix, with no null models involved. Conventionally, RMSEA of less than .05 is considered as a good model fit. Both CFI and RMSEA are among the fit indices that are least affected by sample size (Fan, Thompson, & Wang, 1999).

Obtaining an acceptable model fit at the final phase (i.e., full measurement invariance or intercept and factor loading invariance) has rarely been found to be achievable in the discipline of cross-cultural studies (see for review Steenkamp & Baumgartner, 1998). Larger error terms resulted as more restrictions were added to the model, and most measurement invariance models failed to pass the conventional fit test, particularly RMSEA $\leq$ .05, at the final phase. The conventional RMSEA criterion was thus relaxed for a mean-covariance structure to be considered as acceptable when the lower bound of 90 percent confidence interval hovered around .08 (see Table 1 for the final measures, fit indices, factor loadings, and reliability coefficients). Only the items that have survived the full measurement invariance test were used for further analysis (see Table 2 for descriptive statistics and Table 3 for full correlation matrix).

Results

Induction Checks

Perception of roles. The induction of role perception was successful. The role norm appeal ($M = 3.89$, $SD = 0.68$, $n = 237$) exerted a stronger induction of participant's reported role as a child than did the social norm appeal ($M = 3.05$, $SD = 1.02$, $n = 245$) or the no-norm appeal ($M = 3.00$, $SD = 0.90$, $n = 217$); $F(2, 693) = 73.22$, $p < .001$, $\eta^2 = .17$. A contrast coefficient test (i.e., "role norm" = + 2, "social norm" = "no norm" = – 1) produced a similar result, $t(696) = 12.41$, $p < .001$, $\eta^2 = .18$. Tukey B post-hoc comparisons also indicated that the role norm message induced the perception of child role more powerfully than did the social norm or the no norm control condition, which produced equally less powerful inductions of role perception as a child. Neither the main effect for culture nor the culture by treatment interaction were statistically significant at

Table 1 *Measurement Invariance Tests (N = 702)*

	α	χ^2	*df*	*p*	CFI	RMSEA	$RMSEA_{90\%LB}$	Question	$\ell_{US}(\ell_{KOR})$
		109.85	24	< .01	.964	.101	.082		
(Child)	.92							"This message points out that avoiding excessive drinking is a way of becoming a responsible child of my parents."	.88 (.77)
								"This message appeals to my role obligation as the child of my parents."	.85 (.87)
								"This message argues that I avoid excessive drinking as a responsible child of my parents."	.92 (.89)
								"This message indicates that excessive drinking may prevent me from functioning as a responsible child of my parents."	.85 (.80)
(Community)	.69							"This message points out that avoiding excessive drinking is a way of becoming a responsible community member."	.72 (.73)
								"This message indicates that excessive drinking may prevent me from functioning as a responsible community member."	.74 (.67)

Table 1 *Continued*

	α	χ^2	*df*	*p*	CFI	RMSEA	$RMSEA_{90\%LB}$	Question	$\ell_{US}(\ell_{KOR})$
Behavioral Intention			50	< .01	.933	.080	.067		
(Self)	.74							"I would be willing to sign a petition supporting regulation on excessive drinking."	.64 (.56)
								"I will try to drink less in the future."	.71 (.59)
								"If I drink, I will drink in moderation."	.62 (.47)
								"I would be willing to ask my friends to drink less."	.74 (.67)
(Projected)	.80							"Many of those who read this message will avoid excessive drinking to the best that they can."	.85 (.90)
								"Most people who read this message will try not to drink excessively."	.77 (.84)
								"Most people who read this message will try dissuading their significant others from excessive drinking."	.62 (.71)
								"Most people will NOT quit excessive drinking because of this message." (R)	.41 (.48)
Perceived Sanction	.69	39.49	4	< .01	.913	.152	.109	"People would disapprove of me if I drank excessively."	.48 (.58)
								"Our society views heavy drinkers negatively."	.69 (.67)
								"Society is intolerant of excessive drinking."	.72 (.79)

Table 1 *Continued*

	α	χ^2	*df*	*p*	CFI	RMSEA	$RMSEA_{90\%LB}$	Question	$\ell_{US}(\ell_{KOR})$
Argument Quality	.79	58.14	10	< .01	.937	.117	.089	"The argument of this message is strong."	.77 (.76)
								"The argument of this message is flawed." (R)	.43 (.37)
								"The argument of this message is high in quality."	.66 (.60)
								"The argument of this message is weak." (R)	.84 (.78)
Locus of Consequence	.81	4.57	4	.34	.999	.020	< .001	"This message demonstrates the negative effects of excessive drinking that people close to me are likely to face."	.61 (.63)
									.90 (.92)
								"This message indicates that my excessive drinking may affect people close to me."	.78 (.80)
								"This message claims that people close to me can be the potential victims of my excessive drinking"	
Problem Severity	.84	19.43	4	< .01	.981	.105	.061	"Excessive drinking among students leads to severe and undesirable consequences."	.71 (.73)
								"Excessive drinking among students is a serious problem."	.78 (.84)
								"Excessive drinking among students is dangerous."	.86 (.81)

Table 1 *Continued*

	α	χ^2	*df*	*p*	CFI	RMSEA	$RMSEA_{90\%LB}$	Question	$\ell_{US}(\ell_{KOR})$
Social Norm		216.38	50	< .01	.901	.097	.084		
(Descriptive)	.81								.63 (.74)
								"Most college students drink excessively now and then." (R)	.58 (.70)
								"Excessive drinking is prevalent among college students." (R)	.74 (.80)
								"In general, college students tend to drink too much on occasions." (R)	.44 (.62)
								"It is usual that college students consume alcohols excessively." (R)	.66 (.79)
(Injunctive)	.75							"Most students object to excessive drinking among college students."	.56 (.56)
								"Most students at my university would think that college students should not drink excessively."	.84 (.75)
								"Most students at my university disapprove of excessive drinking among college students."	.79 (.69)

Table 1 *Continued*

	α	χ^2	*df*	*p*	CFI	RMSEA	$RMSEA_{90\%LB}$	Question	$\ell_{US}(\ell_{KOR})$
Subjective Norm		151.37	50	< .01	.958	.076	.062		
(Parents)	.82							"Excessive drinking is acceptable in my family." (R)	.75 (.62)
								"My parents object to excessive drinking."	.55 (.60)
								"My parents think it is okay that I drink excessively." (R)	.79 (.81)
								"My parents allow excessive drinking." (R)	.87 (.89)
(Community)	.86							"My community objects to excessive drinking."	.75 (.79)
								"Other members of my community think that one should not drink excessively."	.77 (.78)
								"My community allows excessive drinking." (R)	.74 (.71)
								"My community disapproves of excessive drinking."	.87 (.81)

Table 1 *Continued*

	α	χ^2	*df*	*p*	CFI	RMSEA	$RMSEA_{90\%LB}$	Question	$\ell_{US}(\ell_{KOR})$
Motivation to Comply		79.16	24	< .01	.965	.081	.062		
(Parents)	.84							"It is important that I obey my parents."	.75 (.72)
								"It is important that I do as my parents wish."	.82 (.78)
								"It is important that I meet the expectations of my parents."	.73 (.69)
								"I want to do what my parents would think is a good thing."	.72 (.70)
(Community)	.79							"It is important that I meet the expectations of other community members"	.83 (.83)
								"I want to do what other community members would think is a good thing."	.79 (.79)

Table 2 *Descriptive Statistics by Culture and Treatment Condition*

		Induction (Child)	Induction (Community)	Behavioral Intention	BI	Perceived Sanction	Argument Quality	Locus Consequence	Perceived Severity
U.S.	Control	3.03 (.93)	3.42 (.84)	3.36 (.80)	2.40 (.71)	3.23 (.81)	3.46 (.67)	3.45 (.83)	3.89 (.68)
		n = 125	*n* = 126	*n* = 126	*n* = 126	*n* = 126	*n* = 126	*n* = 126	*n* = 126
	Community	3.07 (1.08)	3.88 (.74)	3.41 (.82)	2.45 (.74)	3.28 (.80)	3.50 (.67)	3.83 (.71)	3.87 (.75)
		n = 143	*n* = 143	*n* = 143	*n* = 143	*n* = 143	*n* = 143	*n* = 143	*n* = 143
	Child	3.93 (.69)	3.55 (.83)	3.43 (.86)	2.46 (.69)	3.27 (.80)	3.44 (.75)	3.99 (.65)	3.88 (.74)
		n = 143	*n* = 143	*n* = 143	*n* = 143	*n* = 143	*n* = 143	*n* = 143	*n* = 143
	Total	3.36 (1.00)	3.62 (.83)	3.40 (.83)	2.44 (.71)	3.26 (.80)	3.47 (.70)	3.77 (.76)	3.88 (.72)
		n = 411	*n* = 412	*n* = 412	*n* = 412	*n* = 412	*n* = 142	*n* = 412	*n* = 412
Korea	Control	2.95 (.86)	3.18 (.84)	3.61 (.65)	2.75 (.63)	2.96 (.75)	2.85 (.58)	3.39 (.77)	3.63 (.67)
		n = 92	*n* = 92	*n* = 92	*n* = 92	*n* = 92	*n* = 92	*n* = 92	*n* = 91
	Community	3.02 (.91)	3.54 (.73)	3.63 (.65)	2.86 (.77)	2.90 (.72)	3.00 (.66)	3.80 (.57)	3.57 (.72)
		n = 102	*n* = 104	*n* = 104	*n* = 104	*n* = 103	*n* = 104	*n* = 104	*n* = 104
	Child	3.83 (.66)	3.32 (.89)	3.59 (.73)	2.80 (.73)	2.88 (.70)	2.82 (.69)	3.71 (.72)	3.56 (.88)
		n = 94	*n* = 94	*n* = 94	*n* = 94	*n* = 94	*n* = 94	*n* = 94	*n* = 94
	Total	3.26 (.91)	3.36 (.83)	3.61 (.67)	2.80 (.71)	2.91 (.72)	2.89 (.65)	3.64 (.71)	3.59 (.76)
		n = 288	*n* = 290	*n* = 290	*n* = 290	*n* = 289	*n* = 290	*n* = 290	*n* = 289

Table 2 *Continued*

		Descriptive Norm	Injunctive Norm	S-Norm (Parents)	S-Norm	M-Comply (Parents)	M-Comply (Community)
U.S.	Control	2.09 (.59)	2.32 (.72)	4.21 (.67)	3.48 (.89)	3.86 (.62)	3.09 (.85)
		n = 126	*n* = 126	*n* = 126	*n* = 126	*n* = 126	*n* = 126
	Community	2.14 (.57)	2.59 (.75)	4.10 (.74)	3.49 (.78)	3.75 (.65)	3.14 (.84)
		n = 143	*n* = 143	*n* = 143	*n* = 141	*n* = 142	*n* = 143
	Child	2.12 (.52)	2.41 (.71)	4.24 (.65)	3.59 (.83)	3.91 (.62)	3.17 (.83)
		n = 143	*n* = 143	*n* = 143	*n* = 143	*n* = 143	*n* = 143
	Total	2.12 (.56)	2.44 (.73)	4.18 (.69)	3.52 (.83)	3.84 (.63)	3.13 (.84)
		n = 412	*n* = 412	*n* = 412	*n* = 410	*n* = 411	*n* = 412
Korea	Control	2.22 (.55)	2.61 (.62)	4.11 (.77)	3.27 (.65)	3.57 (.58)	2.93 (.79)
		n = 92	*n* = 92	*n* = 92	*n* = 92	*n* = 92	*n* = 92
	Community	2.50 (.68)	2.71 (.63)	3.98 (.76)	3.35 (.58)	3.50 (.62)	2.95 (.65)
		n = 103	*n* = 104	*n* = 104	*n* = 104	*n* = 104	*n* = 104
	Child	2.45 (.75)	2.62 (.64)	4.16 (.74)	3.39 (.72)	3.43 (.75)	2.77 (.79)
		n = 94	*n* = 94	*n* = 94	*n* = 94	*n* = 94	*n* = 93
	Total	2.39 (.67)	2.65 (.63)	4.08 (.76)	3.34 (.65)	3.50 (.65)	2.89 (.74)
		n = 289	*n* = 290	*n* = 290	*n* = 290	*n* = 290	*n* = 289

Table 3 *Full Correlation Matrix (N = 702)*[a]

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Culture[b]																
2. Induction (Child)	3.32	.97	-.05													
3. Induction (Community)	3.51	.84	-.16	.24												
4. Behavioral Intention	3.49	.77	.13	.22	.22											
5. Projected BI	2.59	.73	.25	.19	.21	.34										
6. Perceived Sanction	3.12	.79	-.22	.21	.18	.22	.24									
7. Argument Quality	3.23	.73	-.39	.24	.33	.20	.16	.24								
8. Locus of Consequence	3.72	.74	-.08	.35		.21	.12	.12	.29							
9. Perceived Severity	3.76	.75	-.19	.21	.28	.50	.17	.31	.38	.26						
10. Descriptive Norm	2.23	.63	.22	-.19	-.19	-.07	.10	-.01	-.24	-.18	-.33					
11. Injunctive Norm	2.53	.70	.15	.04	.06	.18	.31	.29	-.01	-.01	.10	.31				
12. Subjective Norm (Parents)	4.14	.72	-.07	.17	.09	.34	.05	.19	.14	.14	.35	-.15	-.05			
13. Subjective Norm (Community)	3.35	.77	-.12	.13	.11	.22	.14	.32	.16	.07	.28	.05	.15	.33		
14. M-Comply (Parents)	3.70	.66	-.25	.22	.16	.27	.09	.16	.32	.12	.33	-.24	-.05	.24	.21	
15. M-Comply (Community)	3.03	.81	-.15	.17	.21	.17	.23	.19	.31	.13	.21	-.12	.12	.04	.22	.41

[a] $r \geq .08$ and $r \geq .10$ were statistically significant at $p = .05$ and $p = .01$, respectively; [b] U.S. = 1; Korea = 2.

level $\alpha = .05$.

Similarly, participant's role perception as a community member was induced more powerfully in the participants exposed to the social norm appeal ($M = 3.74$, $SD = 0.75$, $n = 247$) compared to the participants in the role norm condition ($M = 3.46$, $SD = 0.86$, $n = 237$) or the participants in the offset control condition ($M = 3.32$, $SD = 0.85$, $n = 218$); $F(2, 696) = 15.36$, $p < .001$, $\eta^2 = .04$. A contrast coefficient test (i.e., "social norm" = + 2, "role norm" = "no norm" = – 1) produced a consistent result, $t(699) = 5.40$, $p < .001$, $\eta^2 = .04$. Tukey B post-hoc comparisons also indicated that the social norm message induced the perception of role as a community member more strongly than did the role norm or the no norm control condition, which produced non-different and less powerful inductions of role perception as a community member. The induction strength of perceived role as a community member, however, also varied by culture, $F(1, 696) = 18.43$, $p < .001$, $\eta^2 = .03$. Across conditions, the U.S. participants ($M = 3.63$, $SD = 0.83$, $n = 412$) experienced a stronger sense of role obligation as a community member than did the participants in South Korea ($M = 3.36$, $SD = 0.83$, $n = 290$). The interaction between culture and norm type was within sampling error at level $\alpha = .05$.

Perceived social sanction. The main effect for the treatment on perceived social sanction was *not* statistically significant, $F(2, 695) = 0.05$, $p > .09$, $\eta^2 < .001$. The perception of social sanction, however, varied by culture, $F(1, 695) = 34.03$, $p < .001$, $\eta^2 = .05$. Specifically, heavy drinkers were perceived as deserving greater social sanctions in the U.S. ($M = 3.26$, $SD = 0.80$, $n = 412$) than in South Korea ($M = 2.92$, $SD = 0.72$, $n = 289$). The culture by treatment interaction was non-significant at level $\alpha = .05$.

Perceived argument quality. Perception of argument quality remained relatively invariant across the treatment conditions, $F(2, 696) = 2.06, p > .13, \eta^2 = .005$. The impact of culture on perceived argument quality, however, was statistically significant, $F(1, 696) = 123.20, p < .001, \eta^2 = .15$. Korean participants ($M = 2.89$, $SD = 0.65$, $n = 290$) rated the message as lower in argument quality than did the U.S. participants ($M = 3.47$, $SD = 0.70$, $n = 412$). The interaction between culture and treatment produced non-significant impact on perceived argument quality.

Perceived locus of consequence. Compared to the no norm appeal ($M = 3.43$, $SD = 0.80$, $n = 218$), the role norm appeal ($M = 3.88$, $SD = 0.69$, $n = 237$) and the social norm appeal ($M = 3.82$, $SD = 0.65$, $n = 247$) were associated with greater perceptions of the potential consequence of excessive drinking for people close to the participants themselves, $F(2, 696) = 24.10, p < .01, \eta^2 = .06$. Tukey B post-hoc analysis found the mean difference between the role norm appeal and the social norm appeal as statistically insignificant however. Cultural difference affected the perceived locus of consequence, but was trivial in magnitude, $F(1, 696) = 5.00, p < .05, \eta^2 = .007$. The culture by treatment interaction was not significant at $\alpha = .05$.

Perceived severity of drinking problem. The treatment produced little variance in perceived severity of drinking problem, $F(2, 695) = 0.25, p > .78, \eta^2 < .001$. A significant culture difference existed however, $F(1, 695) = 26.37, p < .001, \eta^2 = .04$. The U.S. participants ($M = 3.88$, $SD = 0.72$, $n = 412$) found the problem of student drinking as more severe than did the Korean participants ($M = 3.59$, $SD = 0.76$, $n = 289$). The culture by treatment interaction failed to produce significant impact on the dependent

variable.

Descriptive norm of drinking. Participants exposed to the social norm appeal (M = 2.29, SD = 0.64, n = 246) found that excessive drinking in college is slightly less predominant than the participants who read the no norm appeal (M = 2.14, SD = 0.58, n = 218); $F(2, 695) = 4.61$, $p = .01$, $\eta^2 = .01$. Tukey B comparisons indicate that the mean of the role norm condition (M = 2.25, SD = 0.64, n = 237) significantly differs from neither the mean of the social norm condition nor the mean of the role norm condition. The main impact for culture was significant, $F(1, 695) = 33.99$, $p < .001$, $\eta^2 = .05$; Korean participants (M = 2.39, SD = 0.67, n = 289) viewed excessive drinking among students as less prevalent than did the U.S. participants (M = 2.12, SD = 0.56, n = 412). The culture by treatment effect fell within sampling error.

Injunctive norm of drinking. The main effect for treatment was statistically significant, $F(2, 696) = 4.53$, $p < .05$, $\eta^2 = .01$. Specifically, the participants in the social norm condition (M = 2.64, SD = 0.71, n = 247) perceived the norm against excessive drinking as stronger than the participants in the role norm condition (M = 2.49, SD = 0.69, n = 237) or the participants in the control condition (M = 2.44, SD = 0.69, n = 218). Tukey B post-hoc test grouped the role norm and the control condition as a homogeneous subset. Reported injunctive norm also varied by culture, $F(1, 696) = 15.40$, $p < .001$, $\eta^2 = .02$; perceived social disapproval of excessive drinking was stronger among Korean participants (M = 2.65, SD = 0.63, n = 290) than among the U.S. participants (M = 2.44, SD = 0.73, n = 412). The culture by treatment interaction produced non-significant impact on the perception of injunctive norm.

Subjective norm of parents. Neither treatment nor culture had significant impact on participant's subjective norm of parents on drinking. Their interaction term also remained within sampling error of zero at level $\alpha = .05$.

Subjective norm of community. Analysis indicates a significant main effect for culture, $F(1, 694) = 10.19, p = .001, \eta^2 = .02$. Specifically, the community's norm against excessive drinking was reported as more powerful among the U.S. participants ($M = 3.52, SD = 0.83, n = 410$) than among the participants in South Korea ($M = 3.34, SD = 0.65, n = 290$). Neither the main effect for treatment nor the culture by treatment interaction passed the significance test at level $\alpha = .05$.

Motivation to comply with parents. A stronger motivation to comply with parents resulted among the U.S. participants ($M = 3.84, SD = 0.63, n = 411$) than among Korean participants ($M = 3.50, SD = 0.65, n = 290$); $F(1, 695) = 47.05, p < .001, \eta^2 = .06$. The main effect for treatment and the interaction between culture and treatment produced non-significant impact on motivation to comply with parents.

Motivation to conform to the community's norm. The main effect for culture was statistically significant, $F(1, 695) = 15.80, p < .001, \eta^2 = .02$. The U.S. participants ($M = 3.13, SD = 0.84, n = 412$) had a greater motivation to follow the norm of community than did their counterparts from South Korea ($M = 2.89, SD = 0.74, n = 289$). The p-values for the treatment effect and the culture by treatment interaction exceeded .05.

Hypothesis Testing

H1 and H2 were tested with 2-way independent groups ANOVAs examining the effects of norm type and culture on behavioral intention (BI) and projected behavioral

intention (PBI) to avoid excessive drinking. H1 predicted that a role norm appeal is to produce a stronger intention to avoid excessive drinking in participants (BI) than would a social norm appeal. Non-significant main effect resulted for norm type, $F(2, 696) = 0.13$, $p > .80$, $\eta^2 < .001$. A similar finding resulted when the analysis was rerun after excluding the control condition, $F(1, 480) = 0.01, p > .90$, $\eta^2 < .001$. Null findings continued when the projected behavioral intention (PBI) served as the dependent measure; $F(2, 696) = 0.73, p > .40$, $\eta^2 = .002$ with the control condition included, and $F(1, 480) = 0.14, p > .70$, $\eta^2 < .001$ with the control condition excluded. The current data were therefore inconsistent with H1.

H2 was also inconsistent with the data because the culture by treatment interaction effect was *not* statistically significant for either dependent measures; $F(1, 480) = 0.11, p > .70$, $\eta^2 < .001$ for BI and $F(1, 480) = 0.23, p > .60$, $\eta^2 < .001$ for PBI. An ANCOVA was conducted to examine H2 controlling for the nuisance effect of potential covariates; age and sex. Both age and sex explained a significant amount of variance in BI, $F(1, 470) = 5.41, p = .02$, $\eta^2 = .01$ and $F(1, 470) = 14.39, p < .001$, $\eta^2 < .03$, respectively. A subsequent regression analysis indicated that female respondents ($M = 3.62$, $SD = .78$, $n = 275$) had a greater intention to drink less than male respondents ($M = 3.34$, $SD = .76$, $n = 203$), $\beta = .16$, $t(473) = 3.49, p = .001, \eta^2 = .03$. The impact of age, however, became insignificant when entered into the equation with sex presumably due to the more powerful impact of sex suppressing the impact of age, $\beta = -.03$, $t(473) = -.68, p > .40$, $\eta^2 = .001$. Regardless, only a minimal increase in F-value resulted for

culture by treatment interaction effect for BI, with confirming the same null finding as above; $F(1, 470) = 0.38, p > .50, \eta^2 < .001$. Entering age and sex as covariates made little contribution in reducing the error variance for PBI; $F(1, 470) = 2.86, p > .09, \eta^2 = .005$ and $F(1, 470) = 0.28, p = .60, \eta^2 < .001$, respectively. The culture by treatment interaction remained as statistically non-significant as a result, $F(1, 470) = 0.38, p > .50, \eta^2 < .001$.

ANOVA detected a significant main effect for culture. Specifically, Korean participants ($M = 3.61$, $SD = 0.69$, $n = 198$) were more willing to avoid excessive drinking, $F(1, 480) = 6.76, p = .01, \eta^2 = .01$, than American participants ($M = 3.42$, $SD = 0.84$, $n = 286$). Korean participants ($M = 2.83$, $SD = 0.75$, $n = 198$) also had a greater expectation of other readers' compliance, $F(1, 480) = 30.15, p < .001, \eta^2 = .06$, compared to their U.S. counterparts ($M = 2.46$, $SD = 0.71$, $n = 286$). Figures 2 and 3 visually represent the results from hypothesis testing for comparison with the initial prediction depicted in Figure 1.

Exploratory Structural Equation Modeling

Investigation continued to explore paths linking the induction of role obligation to behavioral intention, and their possible cultural differences. Conjectured path models were compared to the data using Structural Equation Modeling technique (SEM). M*plus* (Muthén & Muthén, 1998-2004) computed path coefficients and estimated model-data fit, enabling to assess the empirical validity of each model. Missing responses were approximated using FIML in producing parameter estimates (Little & Rubin, 2002).

Phase 1. A full path model was first created to incorporate all the variables

Figure 2 *Found Cultural Difference in Persuasive Impact of Role-Norm and Social-Norm Appeals (Behavioral Intention)*

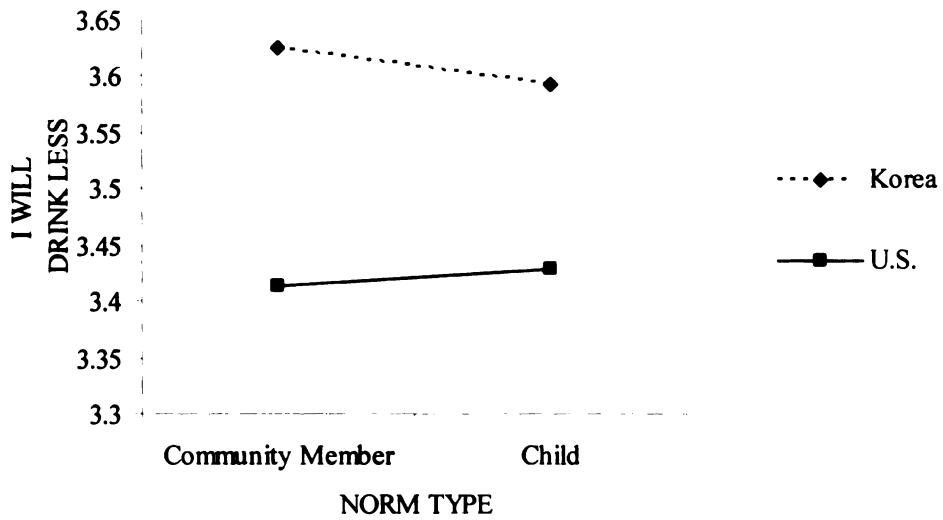
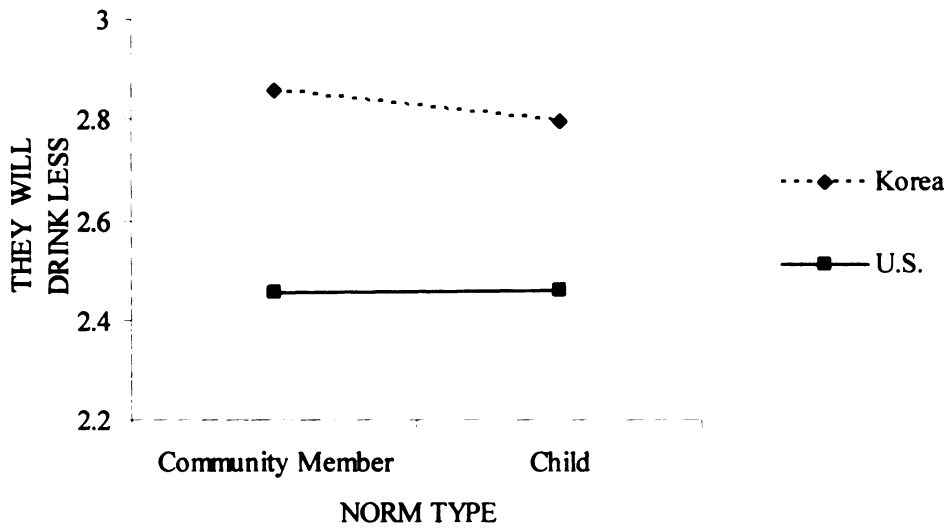


Figure 3 *Found Cultural Difference in Persuasive Impact of Role-Norm and Social-Norm Appeals (Projected Behavioral Intention)*



measured for this study. The induction was dichotomized for an easier interpretation of the results by dummy coding for the three treatment conditions, which resulted in the induction of role norm and the induction of social norm as two separate independent variables. All measured intervening variables were entered as potential mediators. That is, perceived social sanction, argument quality, locus of consequence, and perceived severity of drinking problem were specified to relay the impact of perceived role salience (i.e., sensitized role obligation as a child or a community member) to behavioral intention and projected behavioral intention simultaneously. Descriptive norm, injunctive norm, subjective norm of parents, and subjective norm of community were also considered as mediators although they may in fact constitute antecedent variables exerting direct impact on the dependent measures independent of the message induction.[10] These decisions reflect the notion that the resulting path coefficients may reveal the position of a particular variable in the equation model. Specifically, a particular variable substantially correlated with both of the presumed antecedent(s) and the consequence(s) is likely be a mediator, whereas non-induced antecedents can affect the dependent(s) while minimally affected by other independent(s).

The intervening variables were entered in the model, unordered, as few theory-based predictions were available to determine the order amongst them. A researcher, however, can determine post-hoc the order among mediators in a causal chain through observing the size of their respective path coefficients to the dependent variable(s).

---

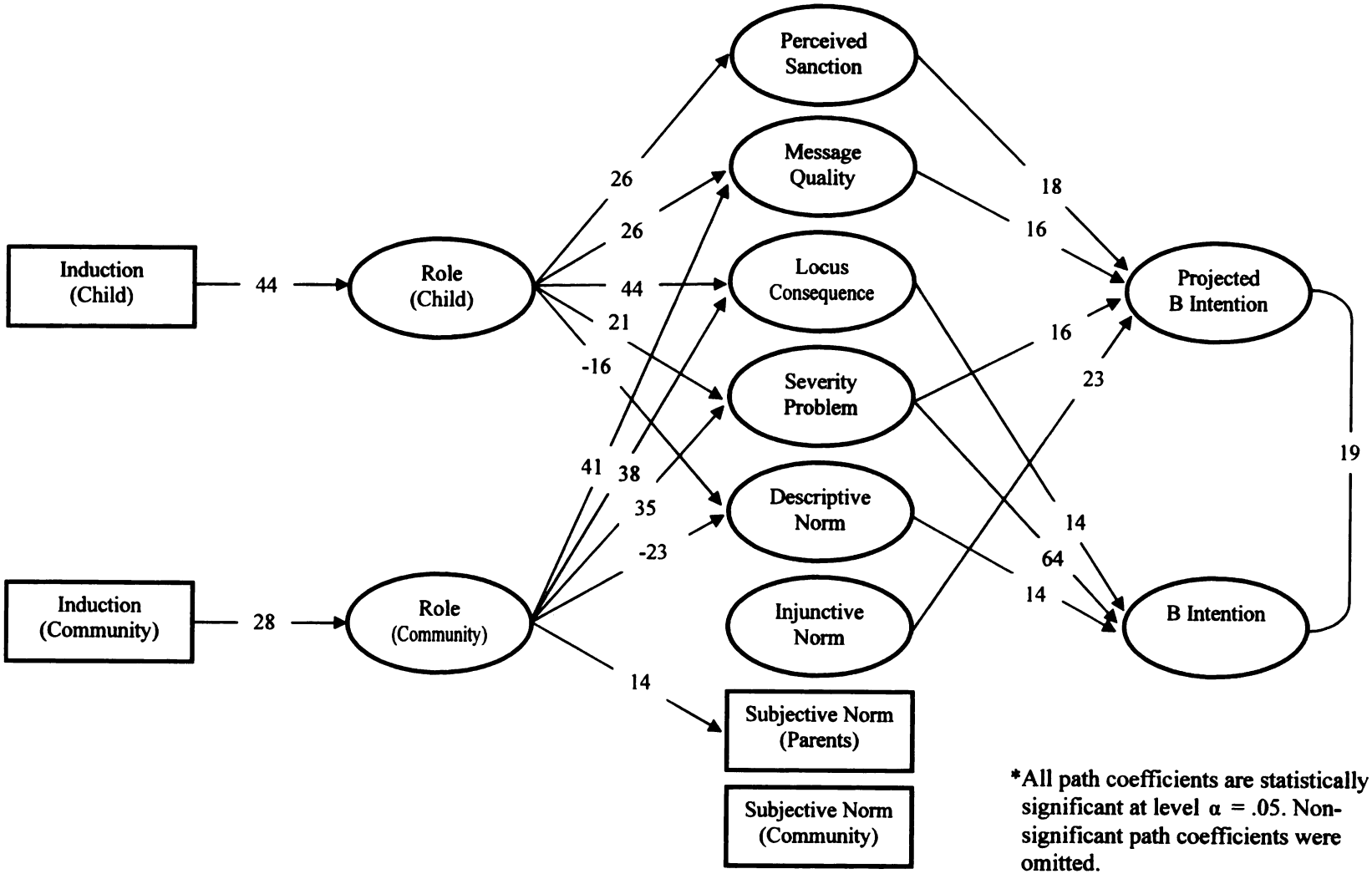
[10] The subjective norm in the model constitutes the product of the initially measured subjective norms and the motivation to comply with the corresponding reference group (i.e., parents or community). This decision followed the assumption that subjective norm alone may *not* exert powerful influence on behavioral intention particularly in the absence of motivation to comply; one may believe that it is important to do as his/her parents would wish yet still lacking in motivation to actually do so. That is, one's subjective norm is likely to impact his/her behavior in reality only when combined with the motivation to conform to the norm of the reference group.

Specifically, a mediator more powerfully correlated with the dependent variable is likely to rest nearer to the dependent variable than a mediator less correlated with the consequence. This statistical decision rule, however, becomes tenable only when it corresponds to reasonable conjectures derivable from the pertinent literature.

The full model was compared with the data separately for each culture. The data from both cultures produced a reasonable fit to the model although the path coefficients differed in size (see Figures 4 and 5 for the models and fit indices). The model, however, provided too complicated a picture of cognitive process, making it difficult to comprehend and explain in a coherent manner. One major cause of this problem involves retaining small but statistically significant path coefficients. The small path coefficients seem to have passed the significance test due to the relatively large sample sizes (i.e., $N_{US} = 412$ and $N_{KOR} = 290$) rather than to exhibiting substantial associations. Keeping minor path coefficients just for statistical significance is prone to lower the probability that the model replicates in future studies, particularly when the model was built for exploratory purposes under little theoretical guidance (Rakov & Marcoulides, 2000). Following this rationale, the significance level α was lowered from .05 to .01, and path coefficients associated with $p > .01$ were deemed as statistically insignificant and eliminated from the model. Figures 6 and 7 illustrate thus reduced path models for the U.S. and South Korea, respectively. The path models in Figures 8 and 9 are identical to those in Figures 6 and 7, respectively, but simplified after excluding constructs all of whose paths were removed for being insignificant.

The reduced models were tested with the trivial paths excluded. Results, however, suggested a further model adjustment for both samples. For the U.S. sample, the

Figure 4 *Full Model (U.S.):* $\chi^2 = 1317.77$, $df = 670$, $p < .001$; CFI = .893; RMSEA = .048, $RMSEA_{90\%\ LOWER\ CI} = .045$*



*All path coefficients are statistically significant at level α = .05. Non-significant path coefficients were omitted.

Figure 5 *Full Model (Korea):* $\chi^2 = 1110.19$, $df = 670$, $p < .001$; CFI = .896; RMSEA = .048, $RMSEA_{90\%\ LOWER\ CI} = .043$*

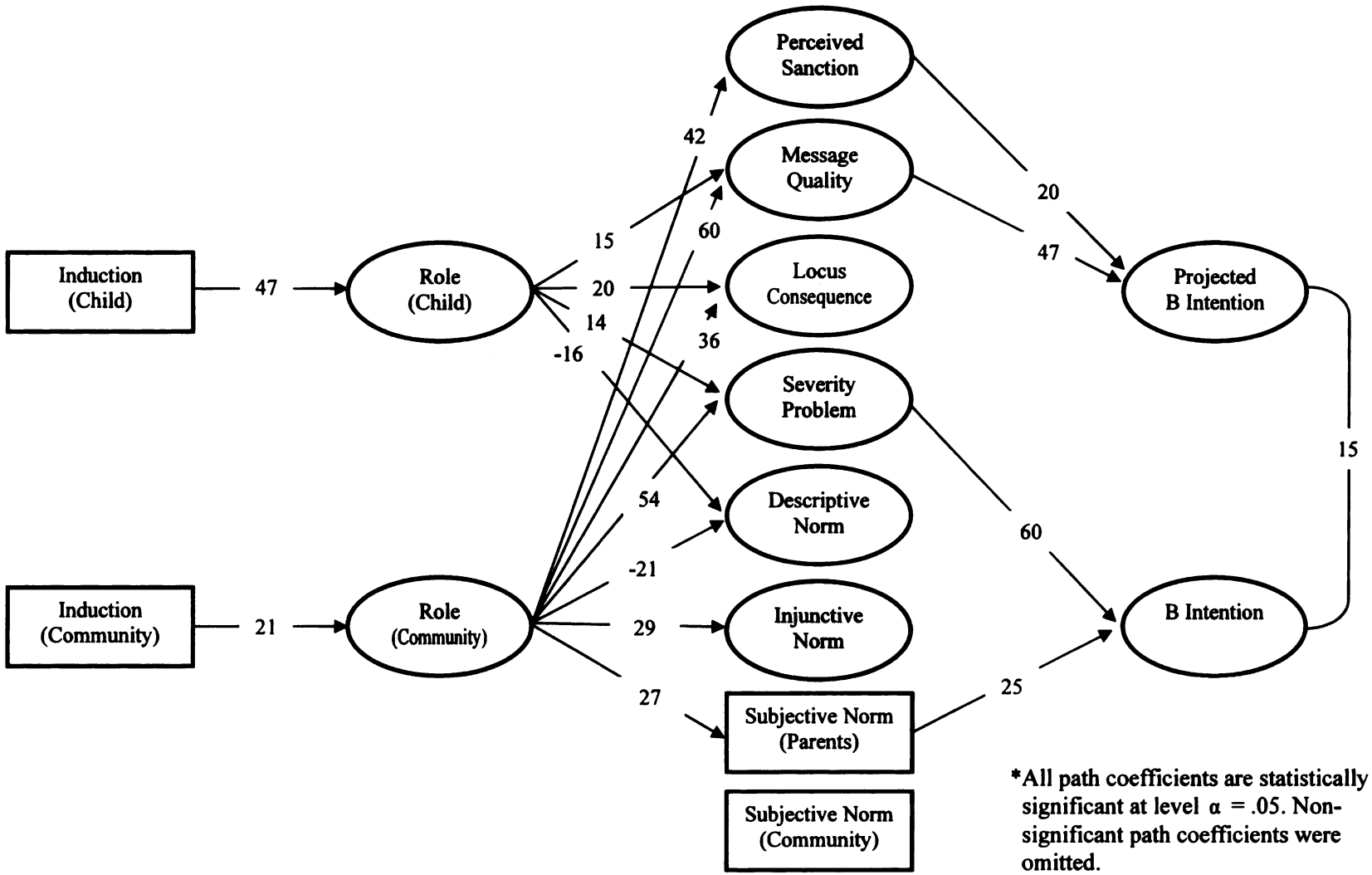


Figure 6 *A Reduced Model (U.S.):* χ^2 = 560.87, *df* = 261, $p < .001$; CFI = .927; RMSEA = .053; $RMSEA_{90\%\ LOWER\ CI}$ = .047

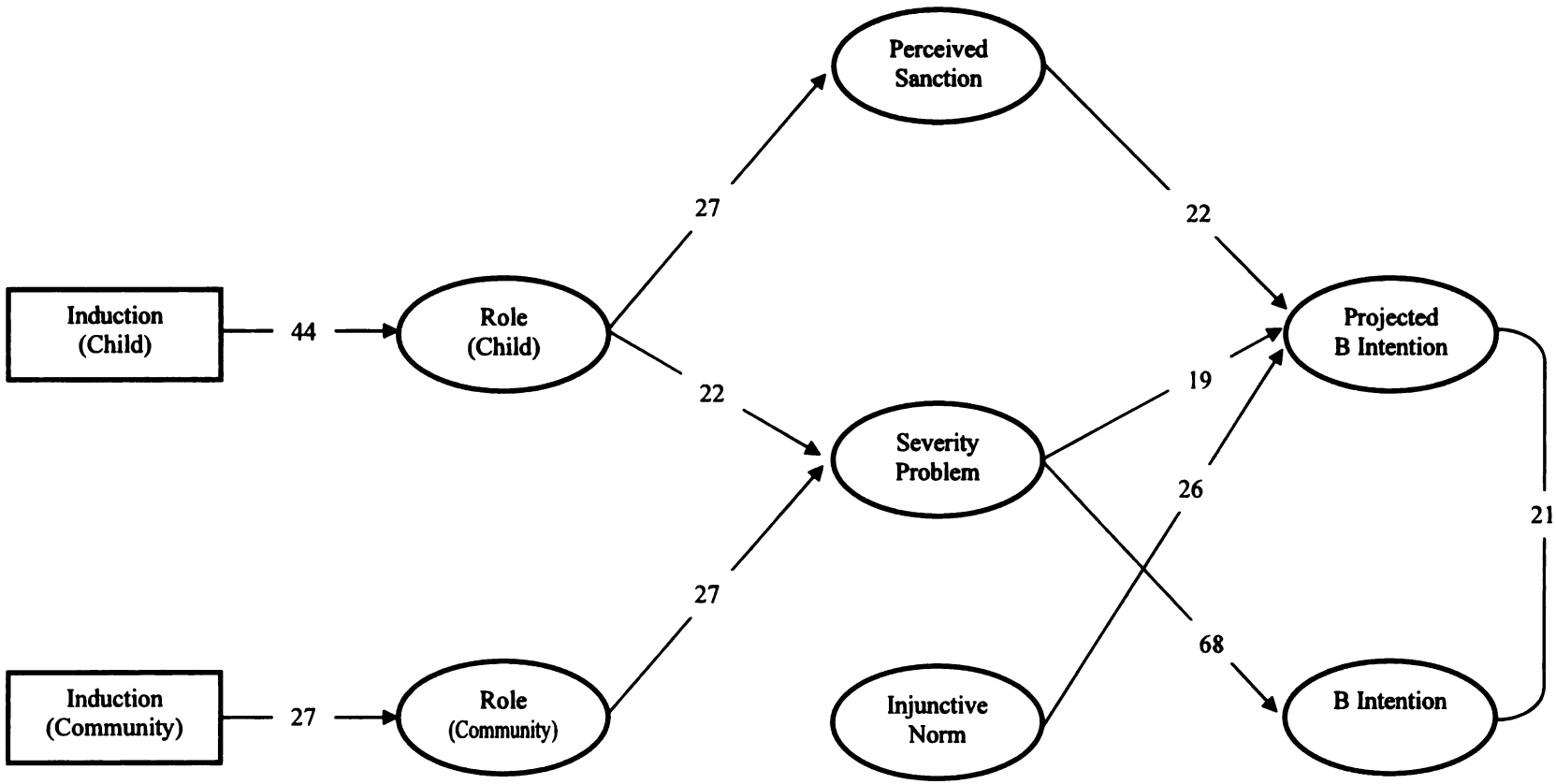


Figure 7 *A Reduced Model (Korea)*: χ^2 = 515.77, df = 307, p < .001; CFI = .926; RMSEA = .048; $RMSEA_{90\%\ LOWER\ CI}$ = .041

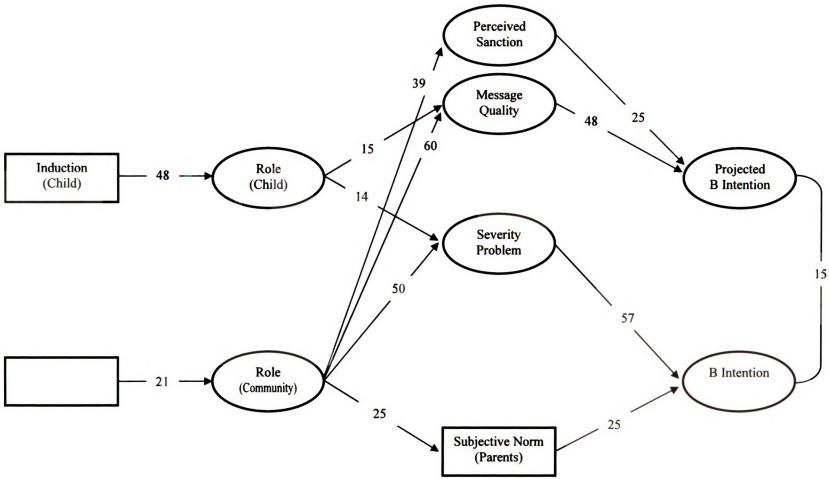


Figure 8 *A Reduced Model for the U.S. (Rearranged):* $\chi^2 = 560.87$, $df = 261$, $p < .001$; CFI = .927; RMSEA = .053; $RMSEA_{90\%\ LOWER\ CI} = .047$

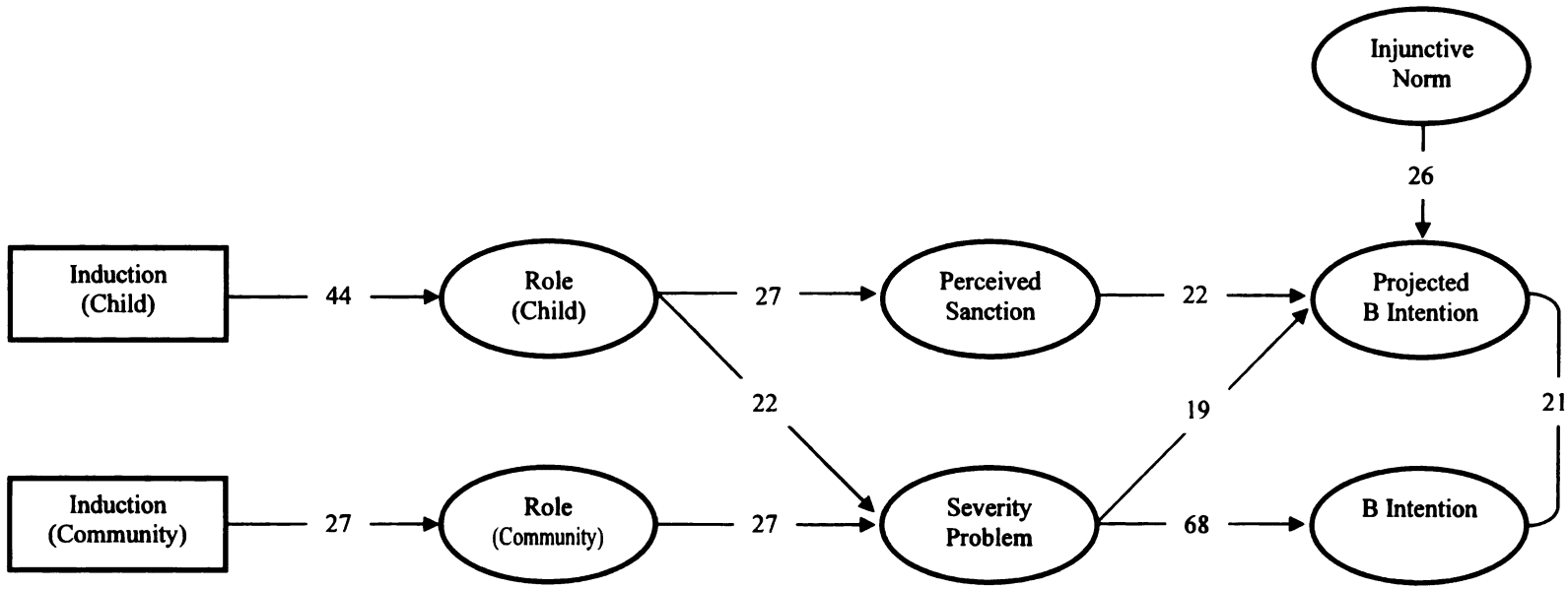
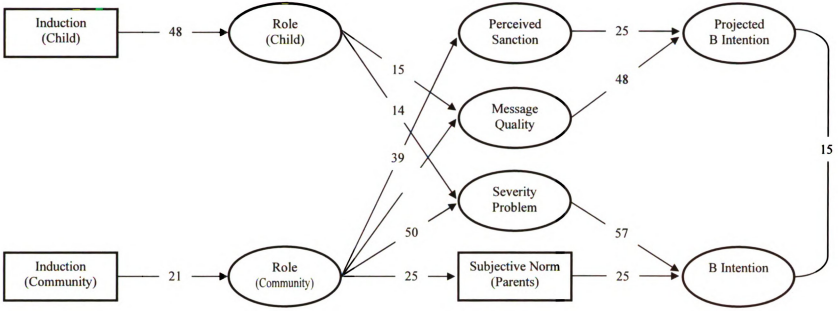


Figure 9 *A Reduced Model for Korea (Rearranged)*: $\chi^2 = 515.77$, $df = 307$, $p < .001$; CFI = .926; RMSEA = .048; $RMSEA_{90\%\ LOWER\ CI} = .041$)



association between the perceived role as a community member and injunctive norm became statistically significant with the elimination of the minor path links. This data-driven information was incorporated into the final model for the U.S. sample. The model-data fit remained acceptable after the adjustment; CFI = .925 and RMSEA = .053 (see Figure 10). In the sample from South Korea, the induction of role as a child has lost its function as a mediator as it produces only minor effects on its immediate dependent variables; perceived argument quality and perceived problem severity. The induction of child role was thus eliminated from the final model for South Korea. The revised model adequately fit the data; CFI = .895 and RMSEA = .057 (see Figure 11). All path coefficients in both models are statistically significant at level $\alpha = .01$.

Each final model was then fitted to the means-covariance structure of the opposite culture in order to examine the potential moderating effect for culture. The resulting model-data fit should deteriorate substantially if the model takes a widely different structure across cultures. The fits were lowered, yet remained as acceptable, although the power of some path coefficients weakened (see Figures 12 and 13). Interestingly, the results from χ^2 goodness-of-fit test indicated that the U.S. model may fit Korean sample, $\chi^2(265) = 546.41, p < .001$, slightly better than it fits the U.S. data set, $\chi^2(265) = 571.47, p < .001$. An objective conclusion, however, remains unavailable because identical models with the same degrees of freedom are incommensurable using Likelihood Ratio Test (LRT). The other fit indices, on the other hand, indicate that the U.S. model may fit the U.S. sample better (CFI = .925, RMSEA = .053) than it fits the Korean sample (CFI = .894, RMSEA = .061). Still, both CFIs and RMSEAs constitute descriptive fit indices unable to determine whether the U.S. model performs *significantly*

better with the U.S. sample or with Korean sample. Here, however, a greater focus should be placed on the observation that both models produced an acceptable fit with the sample from a presumably different culture, with revealing little moderating effect for culture.

Two observations common for both countries merit mention. First, perceived severity of the drinking problem exerted a substantial positive impact on behavioral intention across cultures. The willingness to drink less tended to increase as the participants perceive the problem of drinking as more severe. The effect size may seem culturally different when comparing for the strength of path coefficients; $\beta_{US} = .70$ and $\beta_{KOR} = .60$ (see Figures 10 and 11). However, it should be noted that the two models are qualitatively different, which do not allow for direct comparison of path coefficients in either size or magnitude. As an alternative, their respective zero-order correlations were compared after *z*-transformation (see Tables 4 and 5 for correlation matrix for the U.S. and Korea, respectively). The difference between the two correlations fell within sampling error at level $\alpha = .05$; $-.06 \leq \rho_{US} - \rho_{KOR} \leq .24$. Second, the perceived social sanction predicted projected behavioral intention positively for both countries; $\beta_{US} = .17$ and $\beta_{KOR} = .26$. Participants anticipated a greater willingness to avoid excessive drinking among others as they perceive potential social sanctions as more threatening. The effect size remained approximately equal for both cultures at level $\alpha = .05$; $-.24 \leq \rho_{US} - \rho_{KOR} \leq .06$.

A further observation revealed potential culture differences. The injunctive norm exerted significant impact on projected behavioral intention in the U.S. ($\beta = .22$) while producing non-significant influence in the Korean sample. The subjective norm of

Table 4 *Correlation Matrix for the U.S. (N = 412)* *

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Induction (Child)	3.36	1.00													
2. Induction (Community)	3.62	.83	.21												
3. Behavioral Intention	3.40	.83	.27												
4. Projected BI	2.44	.71	.20	.21	.34										
5. Perceived Sanction	3.26	.80	.24	.11	.29	.28									
6. Argument Quality	3.47	.70	.26	.26	.29	.17	.14								
7. Locus of Consequence	3.77	.76	.40	.32	.29	.14	.12	.31							
8. Perceived Severity	3.88	.72	.21	.22	.57	.19	.25	.35	.30						
9. Descriptive Norm	2.12	.56	-.17	-.16	-.06	.10	.06	-.19	-.20	-.28					
10. Injunctive Norm	2.44	.73	-.01	.05	.18	.29	.30	-.01	-.02	.06	.34				
11. Subjective Norm (Parents)	4.18	.69	.20	.07	.35	.04	.23	.15	.17	.36	-.12	-.03			
12. Subjective Norm (Community)	3.52	.83	.13	.06	.27	.18	.31	.15	.05	.28	.06	.14	.36		
13. M-Comply (Parents)	3.84	.63	.30	.13	.39	.19	.14	.31	.16	.33	-.15	-.07	.32	.21	
14. M-Comply (Community)	3.13	.84	.19	.12	.19	.26	.15	.28	.16	.15	-.11	.07	.09	.23	.42

* $r \geq .10$ and $r \geq .13$ were statistically significant at $p = .05$ and $p = .01$, respectively.

Table 5 *Correlation Matrix for Korea (N = 290)* *

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Induction (Child)	3.26	.91													
2. Induction (Community)	3.36	.83	.28												
3. Behavioral Intention	3.61	.67	.13	.19											
4. Projected BI		.71	.24	.34	.29										
5. Perceived Sanction	2.91	.72	.15	.22	.20	.36									
6. Argument Quality	2.89	.65	.20	.36	.24	.44	.24								
7. Locus of Consequence	3.64	.71	.25	.32	.12	.15	.07	.24							
8. Perceived Severity	3.59	.76	.19	.30	.51	.28	.34	.32	.18						
9. Descriptive Norm	2.40	.67	-.19	-.17	-.16	-.02	.02	-.15	-.13	-.32					
10. Injunctive Norm	2.65	.63	.13	.13	.13	.29	.39	.15	.05	.23	.22				
11. Subjective Norm (Parents)	4.08	.76	.13	.08	.37	.11	.11	.07	.08	.32	-.16	-.05			
12. Subjective Norm (Community)	3.34	.65	.10	.15	.18	.18	.30	.08	.08	.25	.11	.24	.26		
13. M-Comply (Parents)	3.50	.65	.09	.13	.20	.12	.07	.16	.03	.26	-.24	.07	.11	.16	
14. M-Comply (Community)	2.89	.74	.14	.32	.21	.31	.18	.26	.05	.26	-.08	.27	-.05	.15	.34

* $r \geq .13$ and $r \geq .15$ were statistically significant at $p = .05$ and $p = .01$, respectively.

Figure 10 *Final Model (U.S.):* $\chi^2 = 571.47$, $df = 265$, $p < .001$; CFI = .925; RMSEA = .053; $RMSEA_{90\%\ LOWER\ CI} = .047$

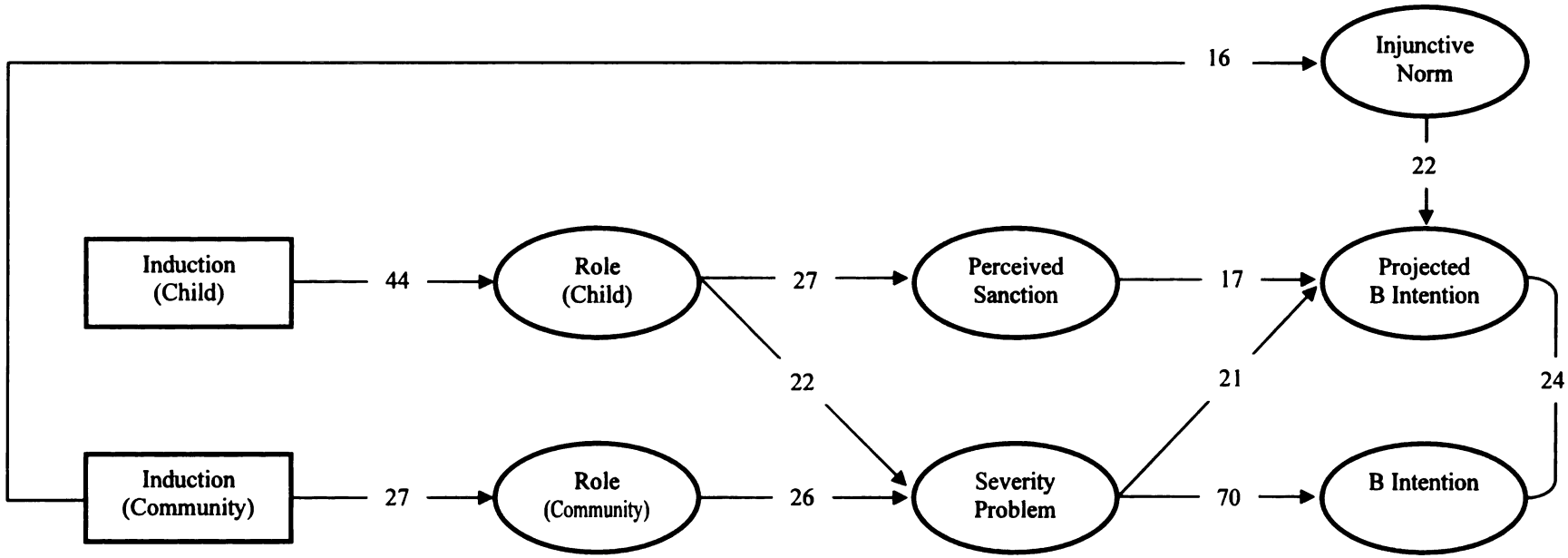


Figure 11 *Final Model (Korea):* $\chi^2 = 434.40$, $df = 223$, $p < .001$; CFI = .895; RMSEA = .057; $RMSEA_{90\%\ LOWER\ CI} = .049$

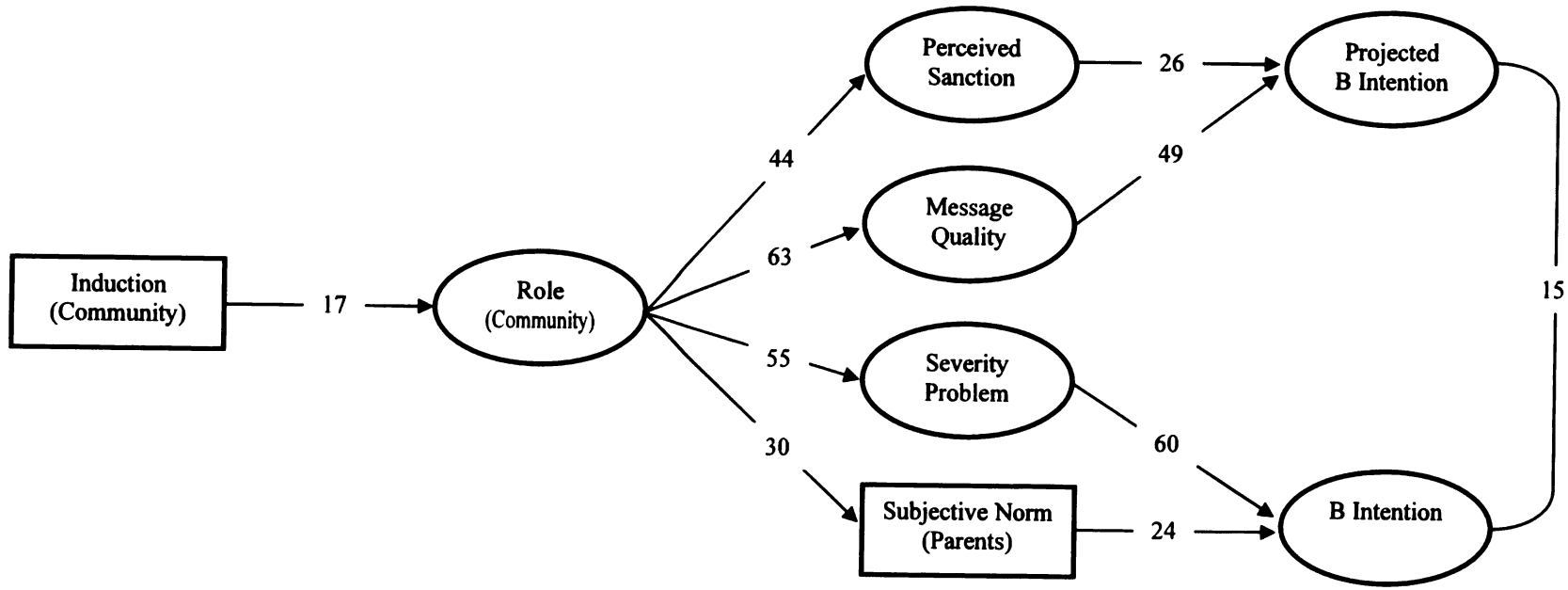
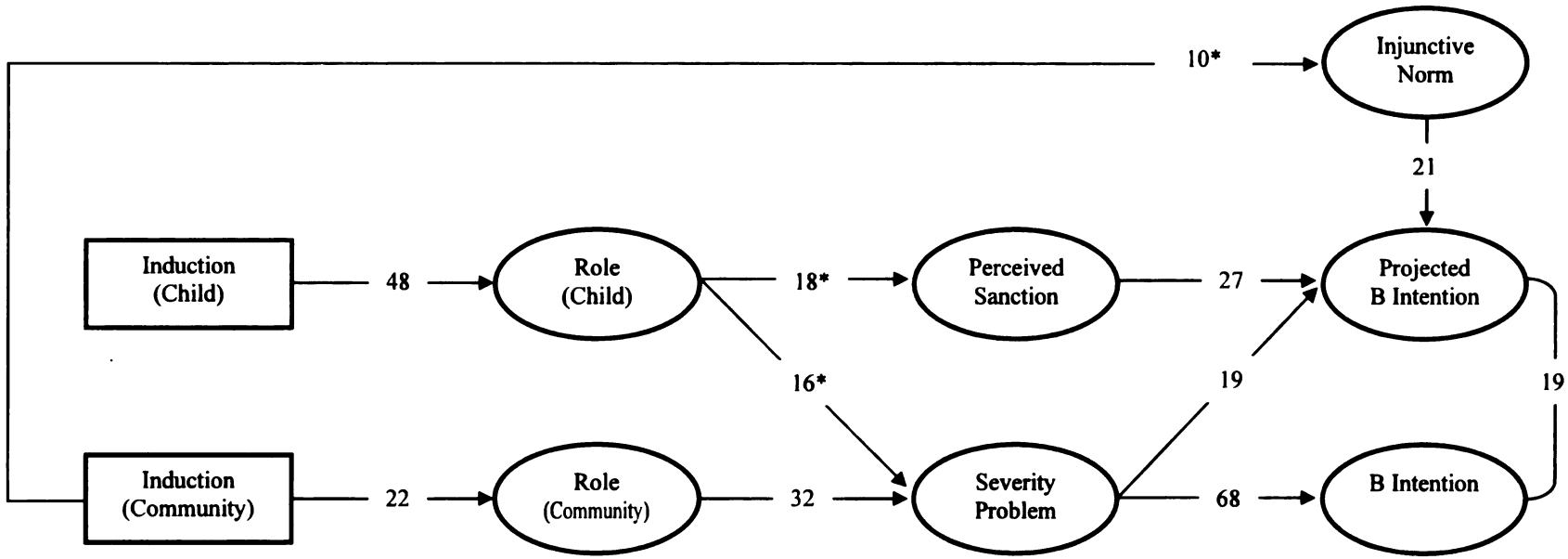
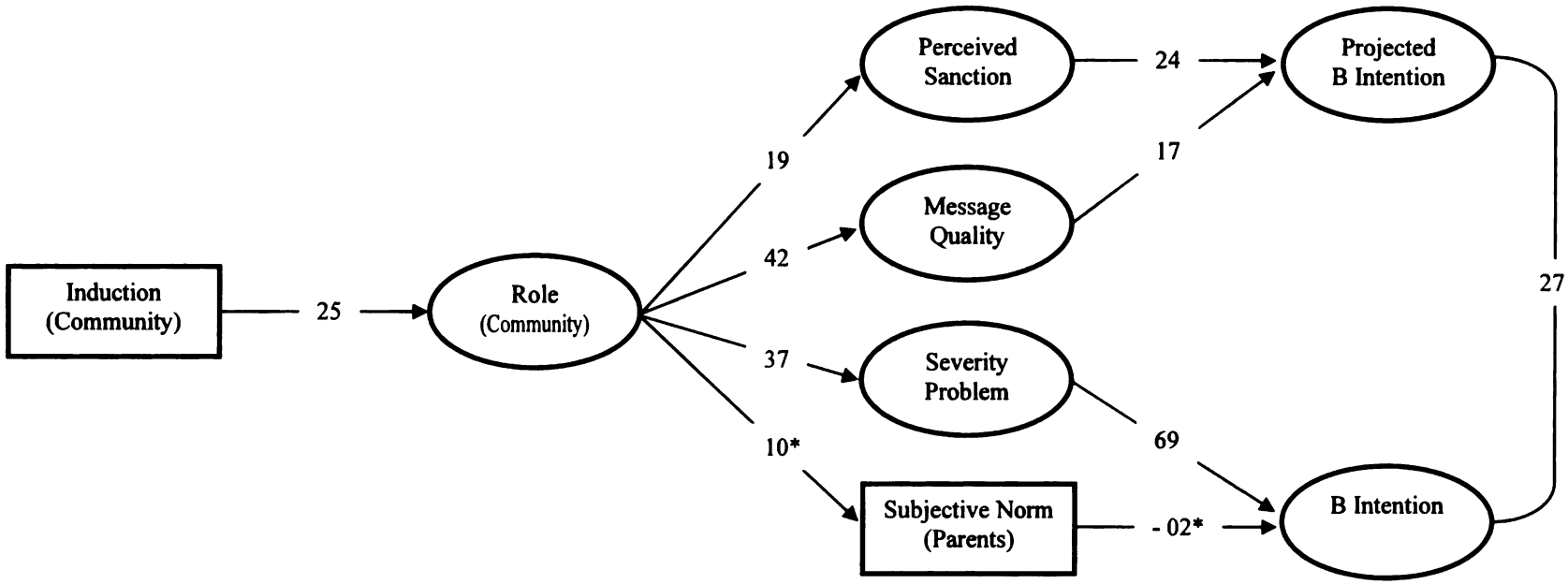


Figure 12 *U.S. Model Fitted to Korean Sample:* $\chi^2 = 546.41$, $df = 265$, $p < .001$; CFI = .894; RMSEA = .061; $RMSEA_{90\%\ LOWER\ CI} = .053$*



* $p > .01$; All other path coefficients are statistically significant at $\alpha = .01$

Figure 13 *Korean Model Fitted to the U.S. Sample:* $\chi^2 = 597.24$, $df = 223$, $p < .001$; CFI = .870; RMSEA = .064; $RMSEA_{90\%\ LOWER\ CI} = .058$*



* $p > .01$; All other path coefficients are statistically significant at $\alpha = .01$

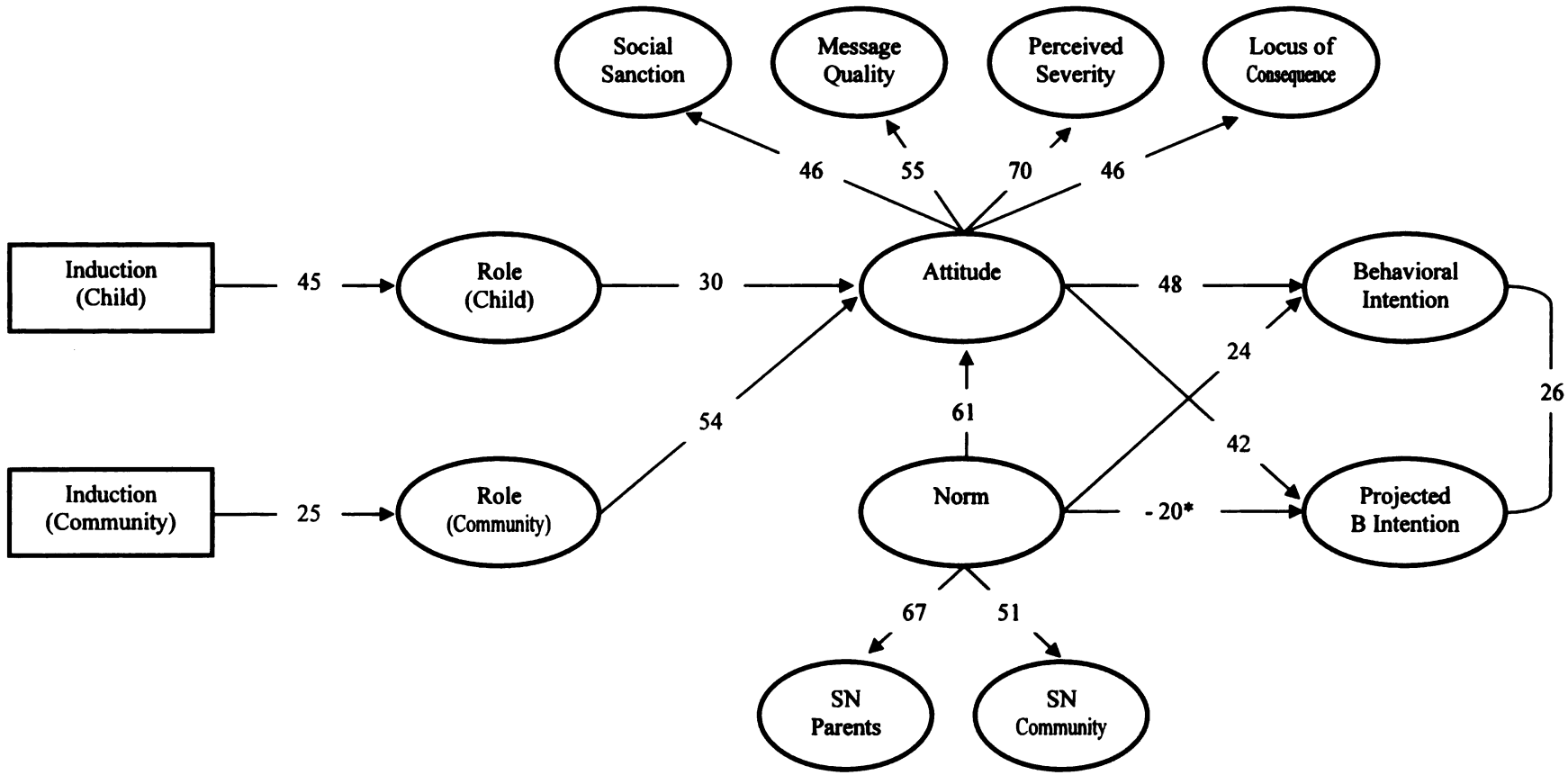
parents constituted a moderately powerful predictor of behavioral intention in South Korea ($\beta = .24$), but remained relatively uncorrelated with all other variables in the U.S. sample. As aforementioned, however, the two models are incomparable, particularly for the impact of a variable present in one model but absent in the other.

Phase 2. Further efforts were made to create a culturally equivalent structural equation model, which would justify testing for potential culture difference in interrelationships among the constructs of research interest. The two tendencies common for both nations provided the basis for constructing the new model; the main effect for perceived problem severity on behavioral intention and the impact of perceived social sanction on projected behavioral intention. A conjecture arose by extending these observations that the norm variables (i.e., injunctive norm, descriptive norm, and subjective norm) may predict projected behavioral intention independent of the message, whereas participants' own behavioral intention can be better explained with the immediate outcomes of message induction (i.e., perceived social sanction, perceived argument quality, perceived severity of problem, and the locus of consequence). The model explained the data adequately with CFI = .893 and RMSEA = .046. The results, however, suggest that a second-order unidimensionality model is invalid for the norm factor. Neither the injunctive norm nor the descriptive norm hung together with the subjective norm constructs, with contributing little to the higher-order norm component; ℓ = .04 and -.24, respectively. As an alternative, the injunctive and the descriptive norm construct were isolated from the two subjective norm constructs, and presumed to be second-order unidimensional on their own. Two independent second-order norm factors evolved as a result. The model-data fit remained as acceptable after the adjustment; CFI

= .903 and RMSEA = .044. Still, the second-order unidimensionality assumption failed to hold for the injunctive and the descriptive norm components, particularly due to their factor loadings being substantially different in size; ℓ = .40 and .95, respectively. Moreover, the second-order factor for the injunctive norm and the descriptive norm construct behaved in unpredictable ways when related with other constructs; it correlated negatively, albeit insignificantly, with the subjective norm factor while producing a significant negative impact on projected behavioral intention. The injunctive norm and the descriptive norm constructs were excluded from further fit tests for instability in factor structure.

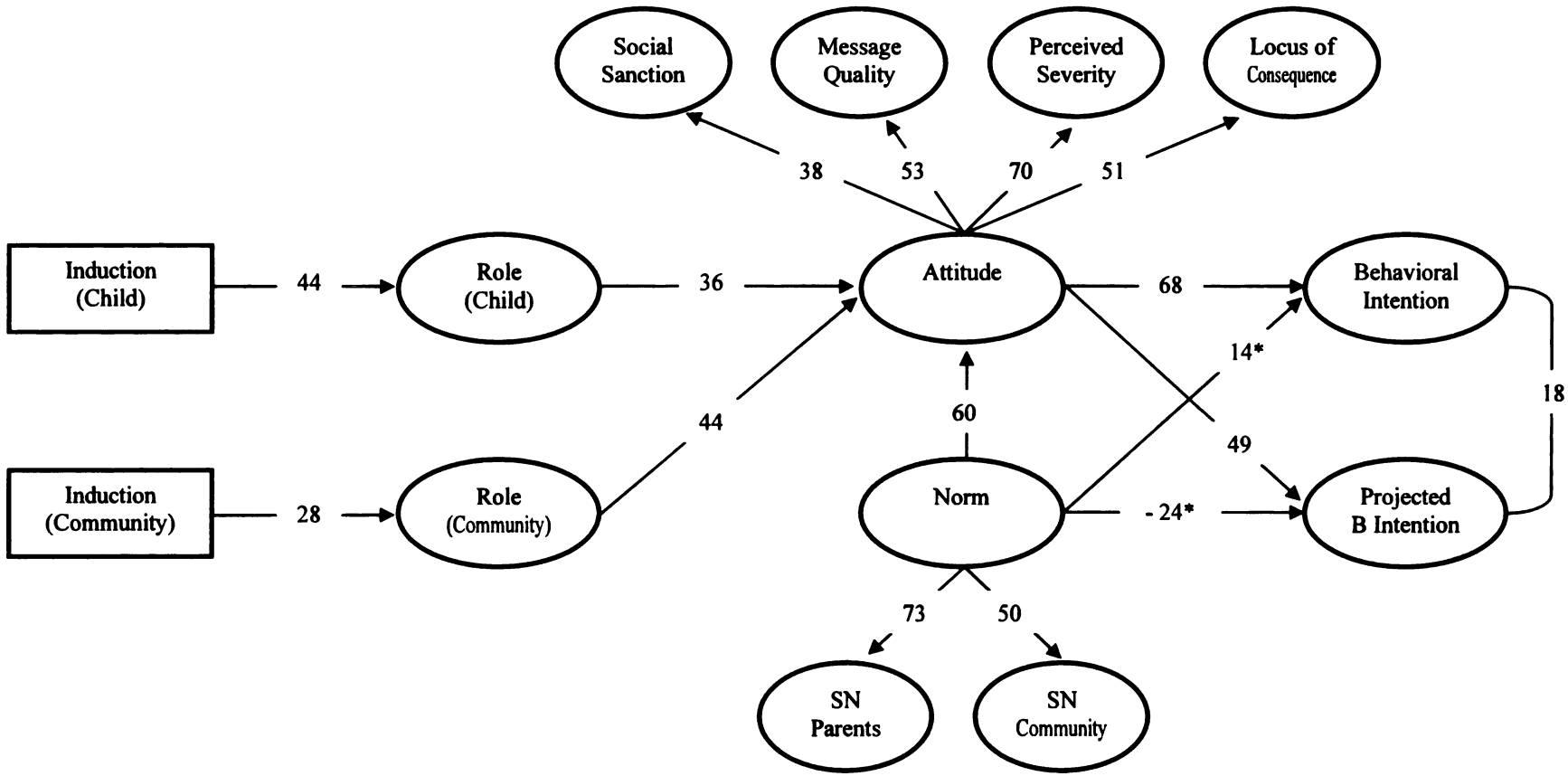
The model after the adjustment seemed to assimilate the traditional TRA model particularly when considering the perception of the message as a proxy of the participant's attitudes on drinking (see Figure 14). This time, both the attitude components and the norm components substantially loaded onto their corresponding second-order factor. The model-data fit was acceptable when tested with the entire sample; CFI = .924 and RMSEA = .044. The model also fit the data separated by culture; CFI = .918 and RMSEA = .042 for the U.S. and CFI = .919 and RMSEA = .039 for Korea (see Figures 15 and 16). The model, however, seemed far from ideal for either country when examining the factor loadings and path coefficients. In the U.S. data, social sanction hardly hung on the second-order factor for message perception (ℓ = .38) and the second-order construct for subjective norm had a negative impact on projected behavioral intention (β = - .24), which is inconsistent with past findings. Moreover, β = - .24 was statistically non-significant while a smaller partial correlation (i.e., $\beta_{BI\text{-}PBI}$ = .18) passed significance test at the same level alpha. This result originated from the

Figure 14 *TRA Model (Entire Sample):* $\chi^2 = 1428.01$, $df = 612$, $p < .001$; CFI = .924; RMSEA = .044; $RMSEA_{90\%\ LOWER\ CI} = .041$*



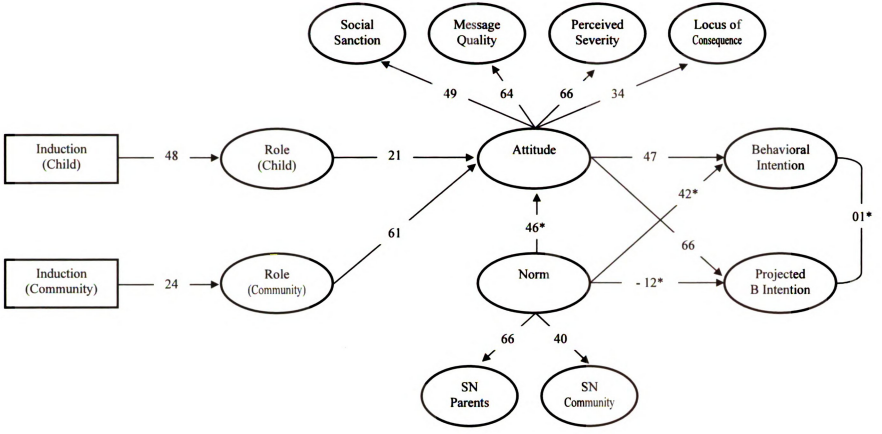
* $p > .01$; All other path coefficients are statistically significant at $\alpha = .01$

Figure 15 *TRA Model (U.S.):* $\chi^2 = 1149.53$, $df = 612$, $p < .001$; CFI = .918; RMSEA = .046; $RMSEA_{90\%\ LOWER\ CI} = .042$*



* $p > .01$; All other path coefficients are statistically significant at $\alpha = .01$

Figure 16 *TRA Model (Korea):* $\chi^2 = 956.10$, $df = 612$, $p < .001$; CFI = .919; RMSEA = .044; $RMSEA_{90\%\ LOWER\ CI}$



* $p > .01$; All other path coefficients are statistically significant at $\alpha = .01$

second-order norm factor being associated with a large standard error which is attributable to the two subjective norm constructs failing to meet the second-order unidimensionality assumption. Similar problems occurred with Korean data. The factor loadings for social sanction (ℓ = .49) and perceived locus of consequence (ℓ = .34) were relatively small compared to those of message quality (ℓ = .64) or perceived problem severity (ℓ = .66), suggesting that the former two factors may jointly constitute a separate cluster or independently form two respective clusters. The second-order norm construct continued behaving erratically due to its unstable factor structure; the ample path coefficients as $\beta_{\text{NORM-PERCEPT}} = .46$ or $\beta_{\text{NORM-BI}} = .42$ were found statistically insignificant.

Fit tests continued incorporating these results. Locus of consequence was excluded from the model, while perceived social sanctions were maintained as a separate norm construct, this time considering it as a measurement of perceived social pressure external to message perceptions. The second-order norm factor further broke into two original subjective norms (i.e., parents and community). Adopting Eagly and Chaiken's conjecture (1993) that subjective norms may affect behavioral intention indirectly via attitudes, both message perception and perceived social sanction were predicted by the subjective norms as well as the message induction. The model was further simplified by restricting the subjective norm of parents to affect the message perception only and the subjective norm to predict perceived social sanction alone. This last decision followed the observation that the subjective norm of community correlates more powerfully with perceived social sanction (r = .32) than with the two components of message perception; r = .28 and r = .16 for perceived problem severity and perceived argument quality,

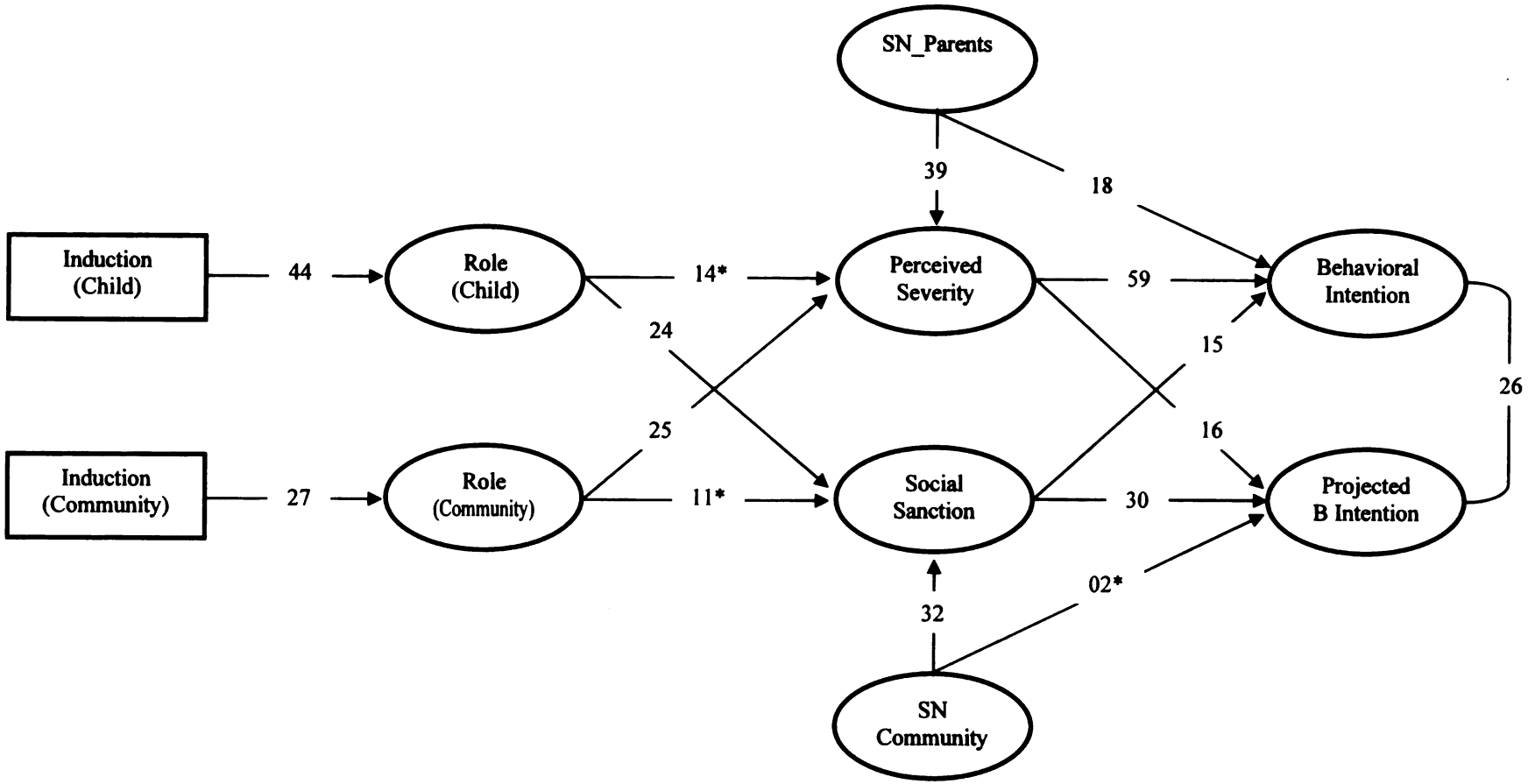
respectively. The reverse pattern prevailed for the subjective norm of parents, whose correlation with problem severity ($r = .35$) surpasses the correlation with perceived social sanction ($r = .19$).[11] Perceived argument quality, however, remained relatively uncorrelated with either the subjective norm of parents ($r = .14$) or the subjective norm of community ($r = .16$). That perceived argument quality lacks association with the variables of interest and, more importantly, it behaves differently from how its companion variable (i.e., perceived problem severity) behaves suggest its elimination from the model. As a result, perceived problem severity alone replaced the second-order construct for message perception. Path models illustrated in Figures 17 and 18 (i.e., the Separate Process Model) represent the above reasoning applied to the U.S. and Korean sample, respectively.

Having two equivalent path models warranted a comparison of path coefficients in magnitude and sign, which would further the investigation of potentially meaningful cultural difference in cognition. Four observations merit mention. First, the induction of child role exerted a larger impact on perceived social sanction in the U.S. ($\beta = .24$) than in South Korea ($\beta = .11$), though the difference was only marginally significant; $-.01 \leq \rho_{US} - \rho_{KOR} \leq .29$. The U.S. participants seem to believe that one may subject to social sanctions for worrying parents with troubles he/she created while drunk. Korean participants, on the other hand, seem to distinguish family matters from society, viewing that society may *not* intervene to chastise someone for failing to fulfill duties as a child of his/her parents.

Second, the impact of perceived role obligation as a community member

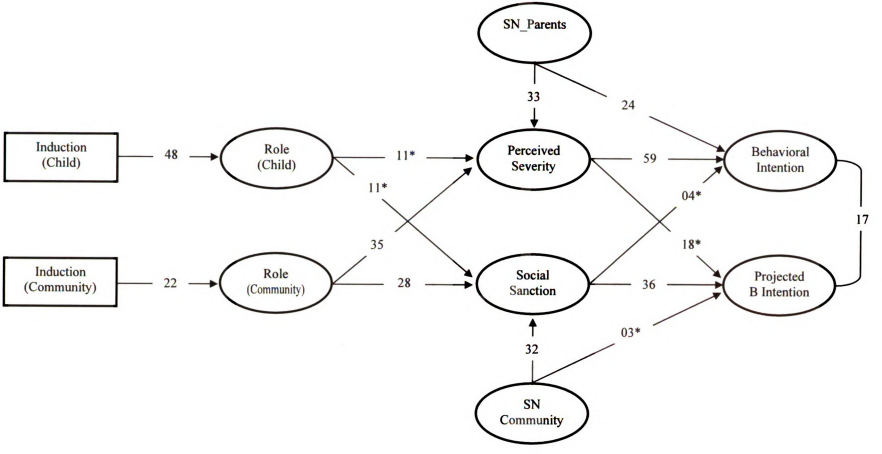
[11] The margin of error for 95 percent confidence was $\pm .10$ after z-transformation ($N = 702$).

Figure 17 *Separate Process Model (U.S.):* $\chi^2 = 738.61$, $df = 386$, $p < .001$; CFI = .933; RMSEA = .047; $RMSEA_{90\%\ LOWER\ CI} = .042$*



* $p > .01$; All other path coefficients are statistically significant at $\alpha = .01$

Figure 18 *Separate Process Model (Korea):* $\chi^2 = 624.04$, $df = 386$, $p < .001$; CFI = .931; RMSEA = .046; $RMSEA_{90\%\ LOWER\ CI} = .039$*



* $p > .01$; All other path coefficients are statistically significant at $\alpha = .01$

predicted perceived social sanction significantly better in South Korean ($\beta = .28$) than in the U.S. ($\beta = .11$); $-.33 \leq \rho_{US} - \rho_{KOR} \leq -.03$. In Koreans' perception, society may exercise the right to punish people for causing troubles to the community, whereas Americans tend to deny society such privilege. Americans may depend more on the legal measures than informal social pressures to treat trouble makers to the community.

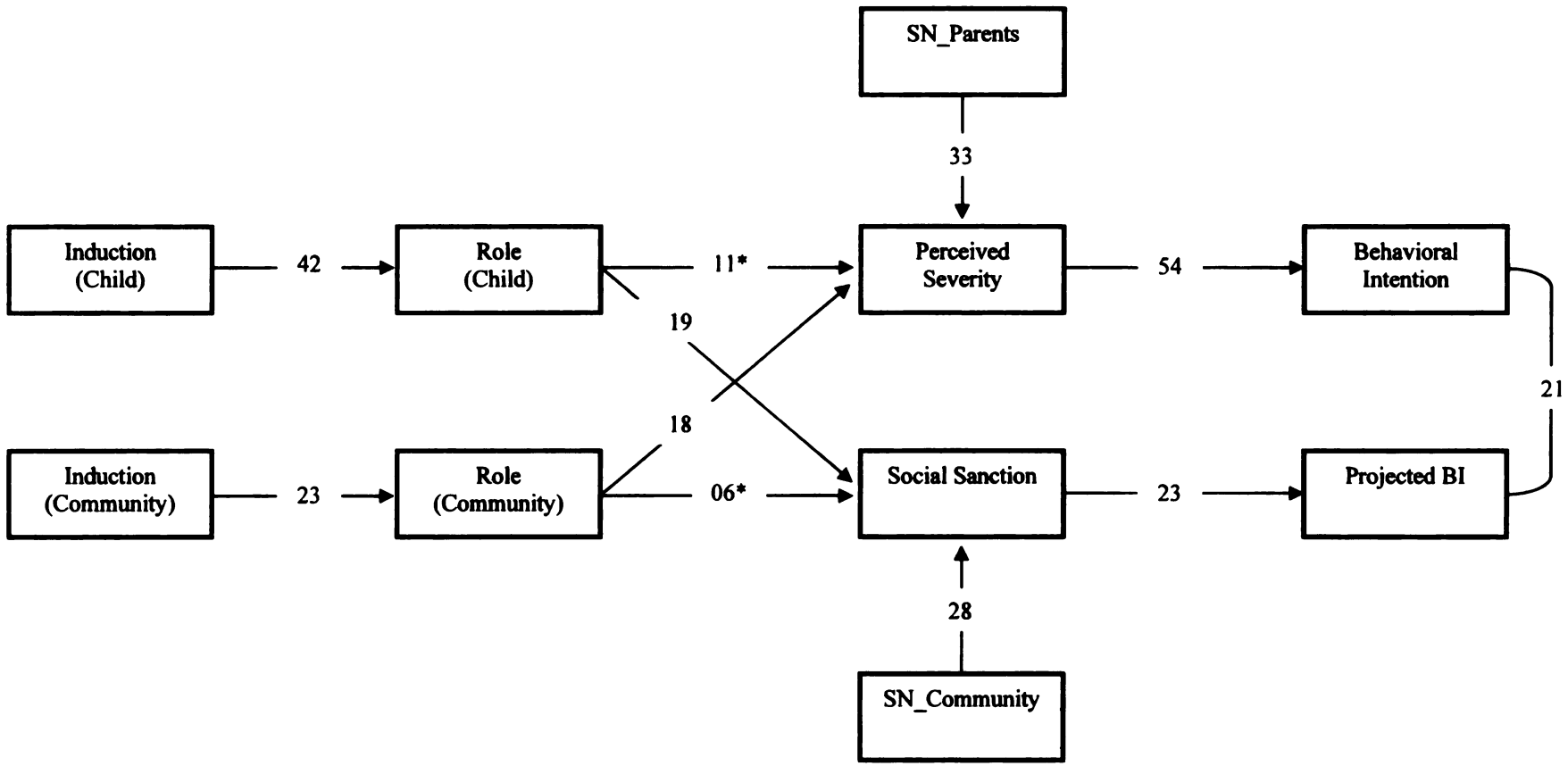
Third, perceived problem severity produced a substantially more powerful impact on BI ($\beta_{US} = \beta_{KOR} = .59$) than on PBI ($\beta_{US} = .16$ and $\beta_{KOR} = .18$) for both countries; $.38 \leq \rho_{BI} - \rho_{PBI} \leq .66$ for the U.S. and $.34 \leq \rho_{BI} - \rho_{PBI} \leq .66$ for Korea. Perceived social sanction had a significantly larger impact on PBI ($\beta_{US} = .30$ and $\beta_{KOR} = .36$) than on BI ($\beta_{US} = .15$ and $\beta_{KOR} = .04$) for both cultures; $CI_{95\%}$ ranged $-.30 \leq \rho_{BI} - \rho_{PBI} \leq -.02$ and $-.50 \leq \rho_{BI} - \rho_{PBI} \leq -.18$ for the U.S. and South Korea, respectively. These two findings demonstrate that participants from both cultures applied two separate mechanisms in determining BI and PBI. Participants reported that their own intention to drink less would increase as the drinking problem was perceived as more severe, while anticipating that others may try to avoid excessive drinking as perceived social sanctions grow stronger.

These two models were reanalyzed using composite indices, the averaged sum of individual items. The model-data fit deteriorated slightly due to reduction in degrees of freedom, but the path coefficients remained similar to those estimated using individual items (see Figures 19 and 20).

Discussion

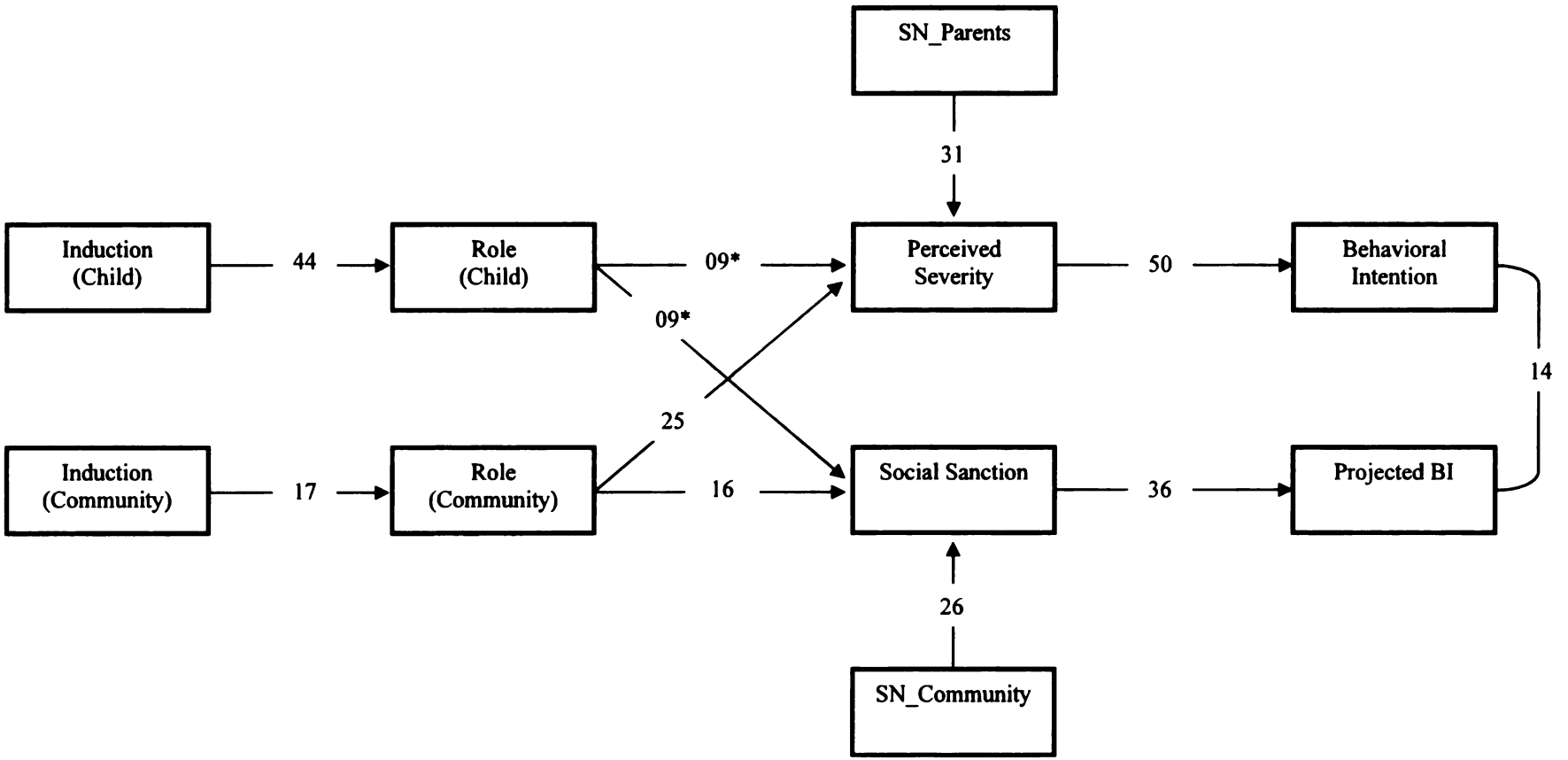
This study predicted that a role norm appeal would produce greater persuasion

Figure 19 *Separate Process Model (U.S.), Composite Indices:* χ^2 = 153.67, *df* = 28, $p < .001$; CFI = .781; RMSEA = .104; $RMSEA_{90\%\ LOWER\ CI}$ = .089*



* $p > .01$; All other path coefficients are statistically significant at $\alpha = .01$

Figure 20 *Separate Process Model (Korea), Composite Indices:* $\chi^2 = 127.62$, $df = 28$, $p < .001$; CFI = .747; RMSEA = .111; $RMSEA_{90\%\ LOWER\ CI} = .092$*



* $p > .01$; All other path coefficients are statistically significant at $\alpha = .01$

than a traditional social norm approach, and this pattern should be more pronounced in holistic cultures than in analytic cultures. Neither predictions were consistent with the data. Participants who read the role norm message (i.e. *"You should avoid excessive drinking as a responsible child of your parents"*) were *no* more willing to drink less than the participants exposed to the social norm appeal (i.e., *"You should avoid excessive drinking as a community member"*). This pattern of data prevailed across the U.S. and South Korea, an analytic and a holistic culture, respectively. These findings suggest that (a) role norm appeals may create little perceptual difference from traditional social norm appeals at least in the persuasion context tested here, producing little enhancement in the amount of compliance, and (b) role norm appeals' inability to garner a greater persuasion than would social norm appeals may be common for both analytic and holistic cultures.

Check for Validity of Rationales

H1 followed the rationale that a role norm appeal should produce greater conformity than a social norm appeal because people often find social sanctions from related others to be more threatening than the potential sanctions from unrelated others. As evidenced in the induction check, however, perceived social sanction on excessive drinking remained nearly invariant across the three message conditions, $\eta^2 < .001$. The path coefficients in the SEM models (see Figures 17 and 18) provide mixed support for this reasoning. The induced role perception as a child ($\beta = .24$) had a greater impact on perceived social sanction than the perceived role as a community member ($\beta = .11$) for the U.S. data; $.00 \leq \rho_{child} - \rho_{community} \leq .28$.[12] The direct opposite was the case for

[12] The reported $CI_{95\%}$ is wider than actual due to rounding error.

South Korea however. Perceived social sanction was significantly higher among participants primed with the role as a community member ($\beta = .28$) than among the participants reminded of the role as a child ($\beta = .11$); $.34 \leq \rho_{child} - \rho_{community} \leq -.02$.

These findings suggest that there exists a stronger family-community connection in the U.S. than in South Korea, or the community pressure for norm conformity remains more powerful in U.S. families than in Korean families. That is, U.S. students seem to believe that one who fails to fulfill his/her duties as a child may well deserve sanctions at the community level as well as immediate punishment from parents. The term 'institutionalization' has been used frequently to encapsulate the typical American culture (e.g., Hall, 1976). A problem of individual families often becomes a problem of community. The police, after receiving a call from a neighbor, often engage in incidents of domestic violence or meddle in quarrels between a father and his son. There exist numerous support groups to help people unable to lead a normal family life for being addicted to substances (e.g., "Alcoholics Anonymous"), losing a child (e.g., "Compassionate Friends") , being infertile (e.g., "RESOLVE"), suffering from minor disorders to serious diseases like cancer (e.g., "The Wellness Community"), or even being in debt (e.g., "Money's Debt Support Group), to mention a few. That the U.S. participants had a significantly higher motivation to conform to the community norms than did the Korean participants also corroborates this conjecture (see Table 6 for culture differences at construct level). The U.S. correlation between the motivation to comply with parents and the motivation to follow the norm of community, $r(412) = .42, p < .01$, also surpassed that of South Korea, $r(290) = .34, p < .01$, although the difference remained marginally significant at level $\alpha = .05$; $-.05 \leq \rho_{US} - \rho_{KOR} \leq .25$ (see

Table 6 *Mean Difference Between the U.S. and South Korea at Construct Level*

	D = KOR – US
Behavioral Intention	.34*
Projected BI	.64**
Perceived Sanction	-.58**
Argument Quality	-1.17**
Locus of Consequence	-.20*
Severity of Problem	-.45**
Descriptive Norm	.49**
Injunctive Norm	.41**
Subjective Norm (Parents)	-.13
Subjective Norm (Community)	-.32*
Motivation to Comply (Parents)	-.57**
Motivation to Comply (Community)	-.36**

* $p < .01$ ** $p < .001$

Tables 4 and 5).

Korean students, on the other hand, seem to more strictly separate family matters from those of community by reporting that violating role norms in a family entails few reasons for the community to interrupt or impose sanctions. One would incur sufferings to his/her parents for a wrongdoing he/she committed while drunk. Yet the problem stays within the familial boundary and the community's right to intervene remains restricted. This rationale corresponds to the prediction from the analytic versus holistic cultural distinction. Possession of a group membership, hence a social role, turns an otherwise insignificant object into a meaningful social entity (e.g., Lim, Allen, Burrell, & Kim, 2007). Devoid of substantial roles, the 'generalized others' remain as insignificant beings who can exert little normative pressure on one another.

The final path model for Korea at Phase One (see Figure 11) captures this holistic tendency to separate *'our path'* from *'their path'* based on the presence or absence of role relationship; the path leading to the projected behavioral intention remains relatively independent of the path to the participants' personal intention to avoid excessive drinking. Specifically, Korean participants anticipate that other people's intention to drink less would enhance in a linear function of the message's argument quality and the strength of potential social sanction on heavy drinkers, while attributing their own intention to drink less to perceived severity of drinking problem and the subjective norm of drinking in the family.

H2 reasoned that role norm appeals should be perceived as more persuasive among holists than among analysts because holists tend to be more sensitive to role-bound obligations than analysts. To the extent that this postulate holds true, the role norm

appeal should induce a stronger induction of role perception than does the social norm appeal among Korean participants, *and* the difference in induction strength between the role norm and the social norm appeal should be significantly larger in the Korean sample than in the U.S. sample in that particular direction. A stronger role perception resulted in the role norm condition ($\beta = .48$) than in the social norm condition ($\beta = .22$) as expected. Their difference in magnitude was statistically significant at level $\alpha = .05$; $.14 \leq \rho_{child} - \rho_{community} \leq .46$. However, the same pattern reappeared in the U.S. data; the induction strength of role norm appeal ($\beta = .44$) exceeded that of the social norm appeal ($\beta = .27$) in a statistically significant fashion; $.05 \leq \rho_{child} - \rho_{community} \leq .33$. The two $CIs_{95\%}$ had an overlapping region, indicating a non-significant moderating effect for culture on the difference in induction strength. Therefore, the failure to find the predicted culture by treatment interaction may be attributable in part to the invalidity of the postulate that holists possess a more sensitive role perception than analysts.

The Third Person Effect

Findings demonstrate that participants from both cultures apply two separate mechanisms in determining BI and PBI. Participants reported that their own intention to drink less would increase as the drinking problem be perceived as more severe, while anticipating that others may try to avoid excessive drinking as the perceived social sanction grows stronger. This cognitive pattern is analogous to the third person effect hypothesis (Davison, 1983), which maintains that people tend to overestimate the influence of media for others while perceiving themselves as more immune to media impact. In particular, a meta analysis (Paul, Salwen, & Dupagne, 2000) indicates a

stronger third person effect for college-aged students, the major subject pool of this study.

The third person effect seems to hold in the domain of interpersonal communication too. Johansson (2005) found that people tend to anticipate that others' political attitudes be more influenced by interpersonal communication as well as mass media, while attributing their own political attitudes to personal experiences. The current finding is consistent with the third person effect hypothesis presuming that the perception of social sanction originates not only from mass media coverage but also from daily contacts with other members of society.

Koreans More Willing to Drink Less

The data from this research provide little explanation for the cultural difference in the willingness to drink less. The willingness to avoid excessive drinking was higher among Korean participants than in the U.S. participants even though the findings indicate the opposite as more plausible. That is, compared to the U.S. students, Korean students found (a) potential social sanctions as less threatening, (b) the message's argument as less persuasive, (c) the locus of consequence to be more distal, and (d) the problem of drinking as less severe (see Table 6 for culture difference at construct level). Both injunctive and descriptive anti-drinking norms *were* stronger among Koreans than among Americans. These normative influences, however, had only trivial impact on behavioral intention as evidenced in path analyses, and hence provide little rationale for the stronger readiness to drink less among Korean participants. Therefore, the found cultural difference may well be attributed to the factors left unmeasured for this study.

There are at least two lines of argument consistent with this finding. First, the two student samples may differ in the amount of exposure to anti-drinking campaigns targeted

at college students. Michigan State University, the subject pool of the U.S. participants for this study, has been making continued efforts to reduce student binge drinking around campus since 2006. The school has initiated a wide variety of campaigns applying descriptive (e.g., *"82% of MSU students drink moderately or not at all on football Saturdays"*) and injunctive norm approaches (e.g., *"Fewer than 1 in 10 MSU students allow alcohol to interfere with their academics"* or *"Most (94%) of MSU students disapprove of pressuring others to drink"*). And those campaign messages have been advertised repeatedly around campus and on local newspapers as well (Michigan State University, 2008). Fewer such attempts seem to have been made at colleges in South Korea. That colleges are investing less effort to intervene may translate to students in Korea drinking less, with incurring fewer drinking related problems than students in the U.S. However, results from a recent survey contradict this conjecture (Yonhap, April 15), in which nearly 22 percent of students at a premier Korean university were found to drink 2-4 times a week and 3 percent to drink more than 4 times a week, with more than 17 percent classified as at risks of alcoholism ($N = 431$).

The U.S. students may have turned into a more persuasion-resistant sample after the repeated exposure to a series of anti-drinking campaigns. Reactance theory posits that people tend to resist any attempts to threaten freedom and resistance arises in an attempt to re-establish, and to prevent further loss of, the freedom (Brehm, 1966; Brehm & Brehm, 1981). Resistance often takes behavioral or attitudinal opposition to the position endorsed by the source (i.e., the 'persuasive boomerang effect'). In particular, a repeated freedom threat may induce anger in the target audience, producing a further resistance. Heavy smokers often find anti-smoking campaigns irritating as they make constant

attempts to threaten freedom. Reportedly, angered smokers feel forced to ridicule anti-smoking campaign messages as absurd or experience impulses that they *must* light up especially right in front of the posters stating *"No Smoking"* (Wolburg, 2006). Similarly, the U.S. participants' lowered willingness to refrain from excessive drinking may have resulted due to their repeated exposure to freedom threats, *not* to the Korean students being more compliant.

The second conjecture stems from the potential group difference in perceived novelty of the argument. Morley (1987) maintains that subjective judgment of information novelty constitutes an important determinant of belief change in conjunction with perceived plausibility and significance of the claim. Information that is already familiar to the target suffers limited chance to receive a thoughtful attention from the target, whereas novel information can induce a more effortful processing in the target's cognition. Provided that the target has perceived the argument as both plausible and important, a greater change in belief becomes more likely in a target who also found the information as novel rather than banal. Previous exposure to similar norm campaigns may have rendered the treatment messages more familiar to the U.S. participants, while the same stimuli might have seemed less familiar to Korean students who had remained relatively unaffected by similar attempts at persuasion. The finding that Koreans were more compliant than Americans may thus be attributable to the treatments being perceived as less familiar among the former than among the latter.

Small Social Norm Effect

Results from path analyses indicate that, for both countries, social norm factors exert only minor influences on behavioral intention, which was largely determined by

participant's personal assessment of problem severity (see Figures 17 and 18). This finding is in fact consistent with past TRA literature: a meta analysis of 37 tests of TRA model reveals that attitude components significantly outweigh the normative factors in predicting behavioral intention (Farley, Lehmann, & Ryan, 1981). Specifically, the attitude-behavioral intention correlation surpassed the subjective norm-behavioral intention correlation and this tendency remained persistent after controlling for the potential moderating effect for subject types (i.e., student vs. non-student sample), method of inquiry (i.e., survey vs. experiment), or the discipline of study (i.e., social psychology vs. consumer marketing).

Eagly and Chaiken (1993) maintain that this pattern of data makes mathematical sense when assuming that subjective norm influences behavioral intention indirectly via the attitude components (see also Stitt, 2004). The Separate Process Model (see Figures 17 and 18) corroborates this Eagly and Chaiken's conjecture to the extent that perceived problem severity and perceived social sanction can be considered as indicative of participant's attitudes on drinking. As illustrated in the model, the subjective norm of one's parents had a relatively smaller impact on behavioral intention than perceived problem severity, and similarly, the subjective norm of a community produced a minor influence on projected behavioral intention than did the perceived social sanction. Also, both subjective norm factors exerted a greater impact on the quasi-attitude variables, while affecting behavioral intention substantially less.

The debate seems to still be continuing on whether to see subjective norms and attitudes as two separate factors making distinctive contribution to behavioral intention (Ajzen, 1985; Fishbein & Ajzen, 1975) or to view subjective norms as a determinant of

attitudes (Eagly & Chaiken, 1993; see for review Dillard & Pfau, 2002; O'Keefe, 2002). Meanwhile, this study documents another evidence favoring the latter view.

Holists and Perception of Roles

This study predicted that a role norm appeal would induce greater attention from holists than analysts for manifesting a higher context dependency (Hall, 1976; Nisbett, 2002) and a greater role dependency in self-perception (Cousins, 1989; Cross, Kanagawa, Markus, & Kitayama, 1995: Lim, 2002; Lim, Allen, Burrell, & Kim, 2007; Markus & Kitayama, 1991, 1998). The current data, however, were inconsistent with this conjecture. Participant's role perception enhanced when exposed to the role norm appeal than when exposed to the social norm appeal. But this tendency was common for both countries (see Figures 17 and 18). This single null finding *cannot* invalidate the cumulated past findings consistent with the theorized cultural difference. Rather, this inconsistency may well be attributed to either the characteristics particular to this study (i.e., content effect) or potential problems with measurement.

Perhaps the presumed cultural difference in sensitivity in role perception may remain very subtle in reality, which may become unobservable when examined with too crude a tool. That is, both holists and analysts may possess an equally strong role obligation as a child but equally minimal sense of duty as a community member. In accordance to this conjecture, Lim (2002) maintained that family constitutes the most cohesive group in both American and Korean culture. Unlike our conventional wisdom, family does *not* always function as the most fundamental group in other cultures. For instance, the strongest relational bonding may occur at corporate level as in Japan or at community level as in many African societies.

The U.S.-Korea difference in role dependency may reside in relational domains between the two extremes, for example, the relationship with siblings, friendship, romantic interests, casual classmates, or a neighbor living next door. Future experiments may be able to find the predicted cultural difference by exposing participants to more diverse relational contexts.

Appendix A *Message Stimuli (English)*

I. Role Norm Message Condition

Binge drinking among college students is a family problem. Every year, more than 696,000 students are physically assaulted by another who has been drinking and no less than 97,000 are victims of alcohol-related sexual assault or date rape (Wechsler et al., 2002; William, 2002). About 1,700 college students die each year from alcohol-related injuries (Hingson et al., 2005). Behind the students who suffer are their parents who must go through the same consequences together. In other words, parents of 696,000 college students experience the consequences of their children's injuries and 97,000 families fall victim of sexual assault. And every year, parents of 1,700 college students are losing their children to alcohol-related accidents. Your parents have been sacrificing themselves to raise you for almost twenty years. Now, they just want you to be safe and healthy. Drink responsibly. Responsible children do not make their parents suffer!

II. Social Norm Message Condition

Heavy-drinking college students not only risk their own health, but also jeopardize the well-being of other members of their community. One out of every four college students who drink report having forgotten where they were or what they did during the school year. The incidence of blackout was doubled (54%) among frequent binge drinkers (Wechsler et al., 2000). A study shows that being rude toward or picking a fight against innocent people, damaging public properties, or committing sexual assault were among the most common behaviors students do while blacked out (Kim, 2008; Wechsler et al., 2002). Most importantly, binge drinking can kill others. A total of 4,553 people were killed in 2001 in crashes involving 18-24-year-old drunk drivers, and as many as 46 percent of them were innocent victims (Hingson et al., 2005). Drink responsibly. Responsible community members do not make other fellow members suffer!

III. No-norm Control Condition

It is important that college students drink responsibly and avoid binge drinking. Evidence indicates that binge drinking causes many health related problems. A recent study (Hingson, et al., 2005) found out that, binge drinkers are eight times more likely than non-binge drinkers to get hurt or injured. In the longer term, research shows that binge drinking during one's college days substantially increases the chances of long term alcohol abuse and dependence, which in turn, is associated with numerous health problems such as liver disease (Hingson, et al., 2005). Moreover, binge drinking causes education problems too. In particular, excessive consumption of alcohol is associated with lower academic performance (Wechsler et al., 2002). Poor grades or, worse yet, a criminal record (even for a minor offense; Hingson, et al., 2005) make it more difficult to find a good job after graduation. Do not binge drink. Protect yourself!

Appendix B *Message Stimuli (Korean)*

I. Role Norm Message Condition

대학생들 사이에서의 과도한 음주는 이제 가정의 문제입니다. 매년 633,000 명 이상의 대학생들이 폭음한 다른 학생들에 의해 폭행을 당하고 있으며, 약 88,000 여명의 학생들이 음주관련 성폭력의 피해를 입고 있습니다. 또한, 약 1,500 명의 학생들이 매년 음주관련 사고로 사망합니다. 이렇게 음주관련 사고로 피해를 겪는 학생들 뒤에는, 같은 고통을 함께 겪어야 하는 부모님들이 있습니다. 다시 말해, 633,000 여 학생들의 부모님들이 자녀의 상처로 고생하며, 88,000 여 가정이 성폭력의 피해자가 되고 있습니다. 그리고 매년 1,500 여명의 부모님들이 음주관련 사고로 자녀를 잃고 있습니다. 여러분의 부모님은 지난 20 년 동안 여러분을 키우기 위해 당신을 희생하셨습니다. 당신의 부모님이 지금 바라는 것은 단지 당신의 건강과 안전입니다. 절주 하십시오. 책임감 있는 자녀는 부모님이 고통을 겪게 하지 않습니다.

II. Social Norm Message Condition

폭음은 대학생들 자신의 건강 뿐만 아니라 그 지역주민들의 안녕을 위협합니다. 음주를 즐기는 대학생 네 명 중 한 명은 취중에 자신이 어디에 있었는지, 또 무엇을 했는지 기억하지 못한다고 합니다. 이러한 필름 끊김 현상은 술을 자주 마시는 학생들 사이에서 약 두 배 더 자주 나타납니다. 한 연구 결과에 따르면, 무고한 시민들을 상대로 무례를 저지르거나 시비를 거는 것, 공공 시설물 파괴, 그리고 성폭력이 학생들이 하는 취중 행동 중 가장 흔한 것으로 조사되었습니다. 더 중요한 것은, 폭음으로 인해 다른 사람들이 죽을 수 도 있다는 것입니다. 지난 2001 년, 18-24 세 사이의 음주운전자가 연루된 교통사고로 301 명이 목숨을 잃었으며, 그 중 46%는 술을 마시지 않은 사람들이었습니다. 절주 하십시오. 책임감 있는 시민은 이웃주민들이 고통을 겪게 하지 않습니다.

III. No-norm Control Condition

대학생들에게 있어, 술을 절제하고 폭음을 피하는 것은 중요한 일입니다. 여러 조사 결과에 나타난 바와 같이 폭음은 건강에 해롭습니다. 한 연구에 따르면, 폭음을 즐기는 사람은 그렇지 않은 사람보다 다치거나 상해를 입을 확률이 8 배 가량 높다고 합니다. 또한, 대학생 시절부터 폭음을 시작하는 사람들은 장기간에 걸쳐 알코올 남용이나 중독에 걸릴 가능성이 매우 높으며, 그 결과로 간 질환과 같은 여러 질병에 걸리기 쉬운 것으로 나타났습니다. 더욱이 폭음은 교육적인 면에서도 해롭습니다. 특히, 폭음은 학교 성적을 저하시킵니다. 성적이 저조하거나 음주 후 폭행 등으로 인한 전과기록이 있는 경우, 대학 졸업 후 좋은 일자리를 구하기 어렵습니다. 절주 하십시오. 자신을 지키십시오.

Appendix C *Measures (English)*

Role salience (Manipulation Check)

1. This message points out that avoiding excessive drinking is a way of becoming a responsible community member.
2. This message appeals to my role obligation as a community member.
3. This message argues that I avoid excessive drinking as a responsible community member.
4. This message indicates that excessive drinking may prevent me from functioning as a responsible community member.
5. This message points out that avoiding excessive drinking is a way of becoming a responsible child of my parents.
6. This message appeals to my role obligation as the child of my parents.
7. This message argues that I avoid excessive drinking as a responsible child of my parents.
8. This message indicates that excessive drinking may prevent me from functioning as a responsible child of my parents.

Perceived social sanction

1. I feel like people would think less of me if I drank excessively.
2. People would disapprove of me if I drank excessively.
3. Our society views heavy drinkers negatively.
4. Society is intolerant of excessive drinking.

Locus of consequences

1. This message shows that excessive drinking will have consequences for people that are close to me.
2. This message demonstrates the negative effects of excessive drinking that people close to me are likely to face.
3. This message indicates that my excessive drinking may affect people close to me.
4. This message claims that people close to me can be the potential victims of my excessive drinking.

Behavioral intention (Self)

1. I would be willing to sign a petition supporting regulation on excessive drinking.
2. I will try to drink less in the future.
3. I will avoid excessive drinking.
4. If I drink, I will drink in moderation.
5. I would be willing to ask my friends to drink less.
6. I would be willing to talk to my friends about drinking issues.

Behavioral intention (Projection)

1. Many of those who read this message will avoid excessive drinking to the best that they can.
2. Most people who read this message will try not to drink excessively.
3. Most people who read this message will try dissuading their significant others from excessive drinking.
4. Most people will not quit excessive drinking because of this message.

Argument quality

1. The argument of this message is strong.
2. The argument of this message is valid.
3. The argument of this message is flawed.
4. The argument of this message is high in quality.
5. The argument of this message is weak.
6. The argument of this message is invalid.

Severity of drinking problem

1. Excessive drinking among students leads to severe and undesirable consequences.
2. Excessive drinking among students is a serious problem.
3. Excessive drinking among students is dangerous.
4. Excessive drinking among students is *not* a serious problem.

Perceived descriptive norm

1. It is commonplace that college students drink excessively.
2. Most college students drink excessively now and then.
3. Excessive drinking is prevalent among college students.
4. Few college students drink excessively.
5. In general, college students tend to drink too much on occasions.
6. It is usual that college students consume alcohols excessively.

Perceived injunctive norm

1. Most college students consider excessive drinking to be acceptable.
2. Most students object to excessive drinking among college students.
3. At my university, it is okay for college students to drink excessively.
4. Most students at my university would think that college students should *not* drink excessively.
5. Most students at my university disapprove of excessive drinking among college students.

Subjective norm (Parents)

1. Excessive drinking is acceptable in my family.
2. My parents object to excessive drinking.
3. My parents think it is okay that I drink excessively.
4. My parents think that I should *not* drink excessively.
5. My parents allow excessive drinking.
6. My parents disapprove of my excessive drinking.

Subjective norm (Community)

1. Excessive drinking is acceptable in my community.
2. My community objects to excessive drinking.
3. Other members of my community think it is okay to drink excessively.
4. Other members of my community think that one should *not* drink excessively.
5. My community allows excessive drinking.
6. My community disapproves of excessive drinking.

Motivation to comply (Parents)

1. It is important that I obey my parents.
2. It is okay for me to disobey my parents.
3. It is important that I do as my parents wish.
4. It is important that I meet the expectations of my parents.
5. I want to do what my parents would think is a good thing.

Motivation to comply (Community)

1. It is important that I conform to the norms of my community.
2. It is okay for me to violate the norms of my community.
3. It is important that I do as other community members would wish.
4. It is important that I meet the expectations of other community members.
5. I want to do what other community members would think is a good thing.

Demographics

1. I am Male / Female (please circle)

2. I am _____ years old

3. In which country were your born and raised? Please choose the continent that it belongs to. Please specify your country name in the blank after "other" if unsure.

    a. North America (i.e., the U.S. or Canada)
    b. Latin America (e.g., Mexico, Brazil, Argentina, etc.)
    c. Europe (e.g., England, Germany, Italy, etc.)
    d. Asia (e.g., China, Korea, Japan, Hong Kong, etc.)
    e. Middle East (e.g., Iran, Iraq, India, Saudi Arabia, etc.)
    f. Africa (e.g., Kenya, Tanzania, South Africa, etc.)
    g. Australia
    h. Other: _____

Appendix D *Measures (Korean)*

Role salience (Manipulation Check)

1. 이 글은 폭음을 하지 않는 것이 책임감 있는 지역 공동체의 일원이 되는 한 방법임을 지적한다.
2. 이 글은 내가 지역 공동체의 일원으로서 지켜야 할 의무에 호소하고 있다.
3. 이 글은, 내가 책임감 있는 지역 공동체의 일원이라면 폭음을 피해야 한다고 주장한다.
4. 이 글은, 지나친 음주로, 지역 공동체의 일원으로서 해야 할 역할을 다 하지 못 할 수도 있다고 지적한다.
5. 이 글은 폭음을 피함으로써 자신이 책임감 있는 자식임을 보여줄 수 있다고 지적한다.
6. 이 글은 내가 자식으로서 지켜야 할 의무에 호소하고 있다.
7. 이 글은, 내가 책임감 있는 자식이라면 폭음을 피해야 한다고 주장한다.
8. 이 글은, 지나친 음주로, 자식으로서 해야 할 역할을 다 하지 못 할 수 도 있다고 지적한다.

Perceived social sanction

1. 내가 폭음을 하면, 주위 사람들이 나에 대해 좋지 않은 인상을 갖게 될 것이다.
2. 사람들은 내가 폭음하는 것을 용인하지 않을 것이다.
3. 우리 사회는 폭음하는 사람들을 부정적으로 바라본다.
4. 이 사회는 폭음을 용납하지 않는다.

Locus of consequences

1. 이 글은, 폭음이 나와 가까운 사람들에게 끼칠 부정적인 영향들을 적시한다.
2. 이 글은, 나와 가까운 사람들이 겪게 될지 모르는 폭음의 악영향들을 보여준다.
3. 이 글은, 나의 폭음이 나와 가까운 사람들에게 악영향을 줄 수 있다고 지적한다.
4. 이 글은, 나와 가까운 사람들이 나의 폭음으로 인해 피해를 볼 수 있다고 주장한다.

Behavioral intention (Self)

1. 나는 폭음을 규제하자는 생각을 지지하는 진정서에 서명할 의향이 있다.
2. 나는 앞으로 술을 줄이려고 노력할 것이다.
3. 나는 폭음을 피할 것이다.
4. 술을 마셔야 한다면 적당히 마시겠다.
5. 나는 내 친구들에게 술을 줄이라고 말할 생각이 있다.
6. 나는 폭음과 관련된 이슈들에 관해 친구들과 이야기할 의향이 있다.

Behavioral intention (Projected)

1. 많은 사람들이 이 글을 읽고 할 수 있는 한 폭음하지 않으려고 노력할 것이다.
2. 이 글을 읽은 대부분의 사람들이 폭음을 피하려고 노력할 것이다.
3. 이 글을 읽은 사람들은 자신과 친분이 있는 사람들에게 폭음을 만류할 것이다.
4. 대부분의 사람들은 이 글을 읽는다고 폭음을 중단하지는 않을 것이다.

Argument quality

1. 이 글의 주장은 설득력이 강하다.
2. 이 글의 주장은 논리적으로 타당하다.
3. 이 글의 주장은 앞뒤가 맞지 않는다.
4. 이 글은 양질의 주장을 펴고 있다.
5. 이 글의 주장은 설득력이 약하다.
6. 이 글의 주장은 논리적으로 타당하지 않다.

Severity of drinking problem

1. 대학생들의 폭음은 심히 바람직하지 않은 결과를 초래한다.
2. 대학생들의 폭음은 심각한 문제다.
3. 대학생들의 폭음은 위험하다.
4. 대학생들의 폭음이 심각한 문제는 아니다.

Perceived descriptive norm

1. 대학생들이 폭음하는 것은 늘 있는 일이다.
2. 대부분의 대학생들은 종종 술을 과하게 마신다.
3. 폭음은 대학생들 사이에서 보편화되어 있다.
4. 폭음하는 대학생들은 거의 없다.
5. 대학생들은 종종 술을 너무 과하게 마시는 경향이 있다.
6. 대학생들이 술을 과하게 마시는 것은 일상적인 일이다.

Perceived injunctive norm

1. 대부분의 대학생들은 폭음을 있을 수 있는 일이라고 본다.
2. 대부분의 학생들은 대학생의 폭음에 반대한다.
3. 우리 학교에서는 학생들이 폭음을 해도 괜찮다.
4. 우리 학교에 다니는 대부분의 학생들은 대학생들이 폭음을 해서는 안 된다고 생각한다.
5. 우리 학교에 다니는 대부분의 학생들은 대학생들 사이에서의 폭음을 용인하지 않는다.

Subjective norm (Parents)

1. 우리 집에서는 폭음이 용인된다.
2. 우리 부모님은 폭음에 반대하신다.
3. 우리 부모님은 내가 술을 과하게 마셔도 괜찮다고 생각하신다.
4. 우리 부모님은 내가 술을 과하게 마셔서는 안 된다고 생각하신다.
5. 우리 부모님은 폭음을 용인하신다.
6. 우리 부모님은 폭음은 옳지 않은 행동이라고 보신다.

Subjective norm (Community)

1. 우리 지역 공동체에서는 폭음이 용인된다.
2. 우리 지역 공동체는 폭음에 반대한다.
3. 우리 지역 주민들은 술을 과하게 마셔도 괜찮다고 생각한다.
4. 우리 지역 주민들은 술을 과하게 마셔서는 안 된다고 생각한다.
5. 우리 지역 공동체에서는 폭음을 허용한다.
6. 우리 지역 공동체에서는 폭음은 옳지 않은 행동이라고 본다.

Motivation to comply (Parents)

1. 부모님께 순종하는 것은 중요한 일이라고 생각한다.
2. 부모님께 순종하지 않아도 괜찮다고 생각한다.
3. 부모님이 바라는 대로 행동하는 것은 중요한 일이라고 생각한다.
4. 부모님의 기대에 부응하는 것은 내게 중요하다.
5. 나는 부모님이 옳다고 생각하시는 것을 실천하려고 노력한다.

Motivation to comply (Community)

1. 지역 공동체의 규범을 따르는 것은 중요한 일이라고 생각한다.
2. 지역 공동체의 규범은 어겨도 괜찮다고 생각한다.
3. 다른 지역 주민들이 바랄만한 행동을 하는 것은 중요한 일이라고 생각한다.
4. 다른 지역 주민들의 기대에 부응하는 것은 내게 중요하다.
5. 나는 다른 지역 주민들이 옳다고 생각하는 것을 실천하려고 노력한다.

Demographics

1. 귀하의 성별: 남성 / 여성 (해당하는 곳에 ○ 표 하십시오)

2. 귀하의 나이: 만 _____ 세

3. 귀하는 어느 나라에서 태어나고 자랐습니까? 해당하는 곳에 ○ 표 하십시오. 아래 보기 중 해당하는 곳이 없는 경우, 기타란에 그 나라의 이름을 직접 적으시면 됩니다.

   가. 한국
   나. 중국
   다. 일본
   라. 기타: _____

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