

Prevalence Estimates and Adolescent Risk Behavior: Cross-Cultural Differences in Social Influence

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Prevalence estimates and prototype perceptions related to health risk behaviors were assessed in comparable samples of Danish and American adolescents (ages 13–15 years). Partly on the basis of observation and previous research, the assumption was made that the American sample would report more self-enhancement tendencies than would the Danish sample. Consistent with this assumption, which was supported by the data, 2 hypotheses were tested: (a) The Americans would overestimate the prevalence of the various risk behaviors (among their peers) more so than would the Danes and (b) those estimates would be more closely linked to their own risk behaviors for the American sample. Results supported both hypotheses; motivational explanations were proposed for both effects. In addition, perceptions of the prototypes associated with particular risk behaviors were assessed and were found to predict smoking behavior and willingness to engage in unprotected sexual intercourse for both samples. Implications for the study of adolescent risk behavior are discussed.

When asked directly, adolescents seldom report that they intend to engage in various risky behaviors, such as unprotected sexual intercourse or drunk driving (Brooks-Gunn & Furstenberg, 1989; Chilman, 1983; Governor's Task Force on Teenage Pregnancy Prevention, 1988). Having heard safe sex and various other prevention messages since grade school, by the time they reach their teens, they appear to have a fairly clear idea of which behaviors are safe or appropriate and of what they should and should not be doing. Nonetheless, statistics indicate that when the opportunity presents itself, these inhibitory messages give way to other interests (DiClemente, Forrest, & Mickler, 1990; Hingson, Strunin, Berlin, & Heeren, 1990; Mann, Tarantola, & Netter, 1992).

Consequently, the prevalence of many risk behaviors has not declined recently, in spite of enhanced education efforts (U.S. Public Health Service, 1993). Moreover, increases in the rates of unplanned pregnancies among teens (Centers for Disease Control, 1993) and, of course, the AIDS pandemic have combined to intensify efforts aimed at determining why so many teens end up engaging in risky behaviors, even when they had not intended to do so.

Prevalence Estimates

Most researchers interested in adolescent risk behaviors have focused their attention on social influence factors that are thought to contribute to the decision to engage or not engage in risky behaviors. In fact, Graham, Marks, and Hansen (1991) recently suggested that social factors are the most important determinants of adolescent substance use, specifically the use of alcohol and tobacco (cf. Brown, Classen, & Eicher, 1986; Dielman, Campanelli, Shope, & Butchart, 1987); the same is thought to be true for sexual behavior (Planned Parenthood Federation of America, Inc., 1989). One reason social influence is so important is that adolescents, more so than adults and younger children, are sensitive to the conformity pressures associated with real and perceived social norms (Bronfenbrenner, 1970; Suls & Mullen, 1982), especially when those norms pertain to risk be-

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havior (Krosnick & Judd, 1982). In general, the more common, or normative, adolescents think a particular behavior is, the more likely they are to engage in that behavior or, perhaps more accurately, the more willing they are to do the behavior should the opportunity present itself (Gibbons & Gerrard, in press-b; Gibbons, Gerrard, & Boney-McCoy, 1995). Consistent with this reasoning, direct evidence exists that adolescents' estimates of their peers' behavior (i.e., prevalence estimates) are positively associated with the frequency of their own actions, especially for behaviors such as smoking (Leventhal, Glynn, & Fleming, 1987; Sherman, Presson, Chassin, Corty, & Olshavsky, 1983; Sussman et al., 1988) and drug use (Kandel, 1980). Moreover, changes in prevalence estimates are also associated with changes in behavior; that is, estimates tend to increase as behavior increases (Gibbons & Gerrard, 1994) and tend to decline as behavior declines (Gibbons, Gerrard, Lando, & McGovern, 1991). In short, a link between prevalence estimates and risk behavior has been established. The mere existence of a correlation between prevalence estimates and risk behavior, however, does not help explain why the rate of risk behaviors among teens has remained so high.

Overestimation of Prevalence

Estimates of the prevalence of different risk behaviors, at least among American teens, are notoriously inaccurate; teens tend to overestimate even more so than adults. This tendency has been found among adolescents who are not currently engaging in the particular behavior—a form of the false-uniqueness effect (cf. Goethals, Messick, & Allison, 1991; Suls, Wan, & Sanders, 1988); it is especially pronounced, however, among those who are currently doing the behavior. This latter tendency for doers to overestimate relative to nondoers has been termed the *false-consensus effect* (Ross, Greene, & House, 1977), and it has been associated with several adolescent risk behaviors. Young persons who smoke or drink, for example, overestimate the percentages of their peers who do the same more so than do young persons who do not engage in these behaviors (Suls et al., 1988). Perhaps more important, the false-consensus effect has also been positively linked with increases in actual risk behaviors. This effect has been shown primarily with smoking and drinking (Gibbons & Gerrard, 1994; Graham et al., 1991; Leventhal et al., 1987; Marks, Graham, & Hansen, 1992), but it has also been suggested that the belief that one's peers are sexually active is a good predictor of eventual sexual activity (cf. Cvetkovich & Grote, 1980; Hardy & Zabin, 1991; National Research Council, 1987). In sum, estimates of the number of one's peers who are engaging in a particular (risky) behavior appear to be an important consideration in an adolescent's decision to engage in that behavior.

Motivation for Overestimation

Both cognitive and motivational explanations have been proposed for the false-consensus effect and, to some extent, for the false-uniqueness effect as well. The cognitive approach suggests, first of all, that actions are typically more salient than inactions (Fazio, Sherman, & Herr, 1982; Nisbett, Borgida, Crandall, & Reed, 1976). What this means, according to Kahneman and Tversky's (1973) availability heuristic, is that behaviors that are out of the ordinary and vivid, such as smoking, will, in general, be subject to prevalence overestimation. Second, individuals are more likely to pay attention to others who are similar and to others who are performing similar actions (see Ross et al., 1977; Sherman, Presson, & Chassin, 1984), which leads to overestimation among those who are engaging in the behavior.

Of course, explanations based on behavioral salience are less applicable to some risk behaviors, such as sexual intercourse, that, although certainly vivid, are usually much less public or visible. This type of overestimation seems more appropriately handled by a motivational explanation. This approach suggests that the false-consensus effect, especially when involving deviant behavior, is a reflection of a desire to self-enhance (Marks & Miller, 1987). By claiming that many others are engaging in a particular unwise behavior, both those who are and those who are not doing the behavior can feel better about their own actions. Just as illnesses or diseases that are thought to be more common are also considered to be less serious (Jemmott, Ditto, & Croyle, 1986), so it is that deviant behaviors that are thought to be relatively common are also considered to be less stigmatizing or threatening (cf. Sherman et al., 1984). That is one reason why Sherman et al. (1983) believe smokers overestimate smoking behavior. Similar logic applies to the false-uniqueness effect. As Suls et al. (1988) suggested, people who do not engage in an unhealthy behavior can "feel distinctive in a positive way" (p. 76) by overestimating the number of others who are doing it. Thus, self-enhancement may be a motive underlying both false consensus and false uniqueness.

Cross-Cultural Differences in Self-Enhancement

Most studies of the false-consensus effect and health risk behaviors have focused on factors that promote the effect, whereas relatively few studies have considered variables that might retard the effect. Moreover, virtually all studies conducted on prevalence estimates have provided some evidence of the effect, which suggests the phenomenon may be overdetermined, at least within American society. Assuming there is some validity to the motivational approach, it may very well be the case that the mo-

tive to self-enhance is so ingrained in American youth that the tendency to overestimate risky or other deviant behaviors is almost automatic. Unfortunately, it is not possible to determine this from the research that has been done so far, as almost all of it has involved only American samples. One way to test this hypothesis, however, is to look for evidence of overestimation and the false-consensus effect among adolescents from a different culture.

We chose Denmark as our comparison sample for several reasons. One reason is that there is some range in the prevalence of risk behaviors among Danish adolescents relative to American adolescents. Adolescent sexual activity is quite comparable, for example (Jones et al., 1986), whereas there is much more adolescent smoking and drinking in Denmark than in the United States (Nielsen & Sorensen, 1989). This allowed us to determine if overestimation and the false-consensus effect vary across cultures as a function of actual prevalence of the behavior (Mullen & Hu, 1988). A second reason is that Danish society places less emphasis on self-enhancement and competition than does American society (cf. Andersen, 1984; Borish, 1991; Nye, 1992). In fact, in one of Hofstede's (1983) surveys of cultural orientation, he reported that Denmark ranked 50th out of 53 countries on cultural emphasis placed on achievement relative to interpersonal harmony. The United States ranked 15th on this dimension.

To the extent that this cultural difference exists, it would suggest the following hypothesis: Because behaviors such as smoking and sexual intercourse are relatively unusual among adolescents in both societies and are also vivid or salient, cognitive-salience explanations would predict that the false-consensus effect and the false-uniqueness effect should be comparable in the two countries. However, if these two phenomena are motivated processes, then they should be more prominent in American society as compared with Danish society. This motivational hypothesis has two prerequisites: (a) that the American sample does report more self-enhancement tendencies than the Danish sample and (b) that the behaviors are relatively deviant in both societies. If the behaviors are not viewed negatively or are not seen as deviant, then there will be less self-enhancement value associated with overestimating them.

Prototype Perception

The effects of a different type of social cognition on risk behaviors have been recently examined in a series of studies. This approach (see Gibbons & Gerrard, *in press-b*, for a review) relies on the basic assumption that various risk behaviors have fairly clear or distinguishable prototypes associated with them (cf. Chassin, Presson, Sher-

man, Corty, & Olshavsky, 1981; Chassin, Tetzloff, & Hershey, 1985; Leventhal & Cleary, 1980; Skowronski & Carlston, 1989). In other words, adolescents who engage in a particular risk behavior, such as smoking, are thought to share certain characteristics. These risk-behavior images are typically not very favorable, at least in an absolute sense (Barton, Chassin, Presson, & Sherman, 1982), which is consistent with the fact that adolescents seldom report that they actually intend to do something that is risky or potentially dangerous. Nonetheless, the degree of positivity of the prototype is a good indication of the adolescent's willingness to do the behavior, should the opportunity present itself.

In one of these image studies (Gibbons et al., 1995), adolescents were first asked to describe on a variety of dimensions (e.g., friendly, smart, and considerate) a prototype associated with unprotected sexual intercourse, namely, the "typical," same-sex, unwed teenage parent. They were then asked how similar they thought they were to that prototype. Their willingness to engage in unprotected sex was subsequently assessed. This assessment was done by describing a hypothetical situation in which the participant's boyfriend or girlfriend wanted to have sex, but neither person had any method of contraception available. Intention to use contraception in the future was also directly assessed. Regression analyses indicated that prototype favorability and perceived similarity were significant predictors of sexual willingness, even after the variance associated with the more direct contraceptive intention question had been accounted for statistically. Subsequent research with college students (Gibbons & Gerrard, *in press-a*) indicated that prototype favorability and perceived similarity together (as a single product) predicted change in various risk behaviors (e.g., drinking and smoking) over time. Specifically, the more favorable the image, the more likely the student was to increase his or her risk behavior. Finally, additional research with adolescents has indicated that willingness to engage in unprotected sex not only predicts the behavior, but it does so better than direct measures of sexual behavior and contraceptive intention (Gibbons & Gerrard, 1994). Once again, this finding is consistent with the idea that adolescents frequently do not intend to engage in risky behaviors but that they will do so if the opportunity presents itself.

Although these studies did provide evidence for the predictive utility of the prototype construct vis-à-vis risk behavior, none of them included social influence variables as predictors. Thus, the logical question of whether the construct may actually be a proxy for social influence (i.e., perceived norms, conformity pressure, or both) remains unanswered. This question is addressed in the current study.

Current Study

The current research had several related but distinct purposes. First, an effort was made to verify two assumptions: (a) that American adolescents are more oriented toward self-enhancement (relative to their peers) and social influence than are Danish adolescents and (b) that the tendency toward risk-behavior overestimation that has been previously demonstrated among American adolescents also exists among Danish adolescents. If the first assumption is correct, it leads to the hypothesis that there will be larger false-consensus and false-uniqueness effects among the Americans than among the Danes. This hypothesis is consistent with our theoretical assumption that these effects are primarily motivated phenomena that reflect a greater tendency toward self-enhancement.

The second purpose of this research was to determine if, and to what extent, these overestimation effects are directly related to current risk behaviors in the two samples. Our second hypothesis is that prevalence estimates will be related to all of the behaviors for both samples but more so for the Americans than for the Danes. Furthermore, in general, we expect the social influence measures (i.e., prevalence estimates and peer and parental influence) to be more predictive of smoking and sexual willingness among the Americans than among the Danes. Our reasoning is based on an apparent (cultural) paradox: On the one hand, American society is more individualistic (it was ranked first on this dimension in Hofstede's, 1980, initial cross-cultural analysis); on the other hand, the competitiveness that is part of that individualism causes greater reliance on others—or actually on the self in comparison with others—for self-definition (cf. Hsu, 1983; Ross & Nisbett, 1991; Triandis, Bontempo, Villareal, Asai, & Lucca, 1988).

The final purpose of this study was to assess the generalizability of the prototype model of risk behavior (Gibbons & Gerrard, in press-b). Evidence that the model is applicable to samples from societies other than the United States would add to its usefulness and would increase confidence in its integrity. This is particularly true for sexual behavior in the United States versus Denmark, given that Danish society is perceived as much more liberal sexually than is American society (Nye, 1992). Thus, there is some reason to expect that the image itself, as well as its relation with sexual behavior, might be different in Denmark. Given the differences in prevalence of the behavior, the same is true for smoking. These potential differences notwithstanding, our assumption was that prototype perception would predict sexual willingness and smoking in the Danish as well as the American samples. In addition, as previously noted, we do not view the prototype as a proxy for social influence; thus, it should be a significant predictor of risk be-

havior independent of parental and peer influence and prevalence estimates.

We asked comparable samples of Danish and American adolescents about their own risk behaviors (i.e., smoking, drinking, drug use, and sex) and about their perceptions of the prevalence of these behaviors among their peers. Then, we assessed their willingness to engage in unprotected sex and their perceptions of the associated (i.e., teen parent) prototype and the typical smoker prototype (Gibbons et al., 1991) in an effort to replicate and extend previous research on cognitive factors related to risky behavior. In addition, peer and parental influence were assessed to determine how they related to prototype perception and risk behavior. Finally, the relation between these factors and one risk behavior, smoking, was assessed with the same assumptions, namely, that measures of social influence (i.e., prevalence estimates and peer and parental influence) would be better predictors for the American sample than for the Danish sample. Thus, the focus was on sexual willingness and, to a lesser extent, smoking behavior. Questions pertaining to alcohol and drug usage were included for comparison and generalization purposes on the prevalence-estimate measures.

Method

Participants

The American sample consisted of 245 male and 255 female adolescents, half of whom were in 8th grade and half of whom were in 10th grade at the time they were interviewed (mean age = 14.4 years). They were chosen from rural schools throughout the state of Iowa and were members of families that had been solicited by mail to participate in a study of health-relevant attitudes and behaviors (Gibbons & Gerrard, 1994). The Danish sample consisted of 117 male and 107 female adolescents of approximately the same age ($M = 14.2$ years) who were recruited from schools in rural areas of Denmark.

Procedure

United States. The questionnaire for the American adolescents was administered in their homes by a trained interviewer. After presenting instructions and obtaining informed consent, the interviewer asked the participants to complete the questionnaire in private. Three other members of their family (the parents and one sibling) also completed questionnaires. Anonymity was stressed, and all family members were reminded several times that they were not to discuss or look at each other's responses at any time. Each family was paid \$50 for participating in the study. Data collected from other family members were intended for another study. However, one of these measures was relevant to this study: Both parents were asked about the participant's risk behaviors. The correlations between parents' estimates and participants' self-reports of all four behaviors (all but one correlation was greater than .42; $M = .49$)

provided some evidence for the validity of these self-reports (previous research has suggested that these types of self-reports among adolescents have reasonable validity; see Brown et al., 1986).

Denmark. The Danish sample completed the questionnaires in their classrooms. They were given detailed instructions about how to complete the survey and how to use the various scales, and they were reminded that the questionnaire was private and completely anonymous. After the students completed the questionnaire, the experimenter told them about the purpose of the study and answered any questions they had. Each class was paid the equivalent of \$20 for participating in the study.

Measures

The American adolescents completed a questionnaire that included a large number of scales pertaining to health behavior. From that group of scales, a subset of interest was chosen for this study, and that subset was translated into Danish by a native Danish speaker (Marie Helweg-Larsen). The translation was then independently checked by two other (bilingual) native Danish speakers for accuracy of translation and equivalency of meaning. These questions, which pertained to the four risk behaviors, fell into three categories (see below). There was a complete set of questions for only the primary behavior of interest, which was willingness to engage in unprotected sex. In addition, most of the complete set of questions was asked regarding smoking behavior, and a much smaller subset was asked regarding alcohol and drug usage. Unless otherwise stated, all items were rated on 7-point scales ranging from 1 (*not at all*) to 7 (*very*).

Self-enhancement. The first category of questions consisted of items intended to assess the self-enhancement and competitiveness tendencies of the two samples. First, there were two items concerning social comparison preferences. One item pertained to amount of general social comparison ("How often do you compare how well things are going for you in general [socially, personally, etc.] with other people?") and the other item concerned social competitiveness ("When you receive exam scores back . . . would you be more likely to compare your current score with how well you had done on previous exams or how well others did on the same exam?"; cf. Marsh, 1986). Each item was accompanied by a 13-cm line on which the participants placed a slash at the point that most reflected their usual preference (e.g., with anchors of *your previous score* on the low end and *others' scores on this exam* on the high end; therefore, a high score reflects a more competitive orientation). Second, there was a self-description index that asked participants to evaluate themselves relative to others on 12 adjective descriptors (i.e., "Please indicate how much each of the following words describes you . . . for example, if you think you are a little more popular than most people your age, then you'd answer with a '5' on the scale"; a high score on this measure indicates more self-enhancement). These items were reversed when necessary and were then averaged to form a single score ($\alpha = .70$).

In addition, two pairs of true-false questions from the Kaplan Relations Scale (Kaplan, Martin, & Robbins, 1982)

were included as secondary measures. One pair pertained to peer relations (e.g., "More often than not I feel put down by the kids at school"; Kuder-Richardson consistency coefficient for dichotomous items = .35). The other pair pertained to parental relations (e.g., "My parents do not like me very much"; Kuder-Richardson consistency coefficient for dichotomous items = .53). The former pair was intended as an additional check on the competitive tendencies of the two samples, with the assumption that adolescents in a more competitive environment (the United States) would report being put down more often. The latter pair of questions was included for comparison purposes.

Social influence: Parental and peer influence and estimated prevalence. Next were questions intended to assess the impact of social influence on the adolescents' smoking and sexual behavior. First, participants were asked how their parents and friends would react if they thought they (the participants) were sexually active (scales ranged from -2, *tell you to stop*, to 1, *they would approve*). This was followed by a question assessing peer and parental influence on sexual behavior ("Describe the following in terms of how much they are likely to influence your sexual behavior . . . Your friends'/parents' attitudes and beliefs about sex, from not at all important to extremely important"). These two measures were then multiplied together to form parental and peer influence indexes. Items of this type, which were derived from Fishbein and Ajzen's (1975) theory of reasoned action (i.e., measures of perceived norms and motivations to comply with those norms; Ajzen, 1985; Ajzen & Fishbein, 1980), have been shown to be effective predictors of health-behavior intentions (e.g., Adler, Kegeles, Irwin, & Wibbelsman, 1990; Jaccard, Helbig, Wan, & Gutman, 1990). Next came a measure addressing perceived peer and parental reaction to smoking (same scale as was used for the comparable measures for sex). Finally, estimated prevalence was assessed with a pair of questions for sex and one for smoking: "What percentage of people your age do you think smoke cigarettes (. . . are sexually active)?" and "What percentage of your friends are sexually active?"

Prototype perceptions. Prototype perception was assessed for the two primary behaviors (i.e., the typical smoker and the typical teenage unwed parent; cf. Gibbons et al., 1995) in the following manner: First, participants were asked to evaluate the prototype on 12 adjective descriptors (the same 12 used for self-evaluation; e.g., smart and considerate). These ratings (both on 7-point scales) were averaged (α s: typical smoker = .75, typical teenage unwed parent = .71), and then the average was multiplied by a single item assessing perceived similarity to the prototype to form a prototype index (e.g., "How similar are you to the typical teenager who smokes?"; scales ranged from 1 = *not at all similar* to 7 = *extremely similar*). Thus, the prototype index had a range of 1 to 49 with a midpoint of 16 (i.e., 4×4). This index reflects our assumption that prototype similarity and favorability interact in influencing behavior, such that persons who have a favorable opinion and who believe they are similar to the prototype are most likely to be willing to engage in the behavior (Gibbons & Gerrard, in press-a; Gibbons et al., 1995). As in previous studies, we used the pregnant-teen prototype rather than, say, a casual-sex prototype, because we believe it presents the most direct image of the risk (and outcome) associated with unprotected sexual intercourse.

Additional cross-cultural measures. Participants in both samples completed other scales that pertained to self-esteem (Rosenberg, 1965) and two additional personality measures, optimism (Scheier & Carver, 1985) and life satisfaction (Diener, Emmons, Larsen, & Griffin, 1985). The purpose of these measures was to assess comparability of the two samples on additional individual-difference factors.

Dependent measures. Finally, there were three types of dependent measures: actual participation, intention, and willingness to engage in risk behaviors. Current participation in actual risk behaviors was assessed with a series of questions regarding how often participants engaged in three of the four risk behaviors (smoking, drinking, and drugs; e.g., *never, once or twice, or occasionally*) followed by a question on their virginity status. Behavioral intentions were assessed in both samples for all of the behaviors (e.g., "Do you think you will have sex in the next year?" rated on a scale ranging from *I definitely will not* to *I definitely will*). Also, intentions to use a variety of different methods of contraception were assessed (e.g., foam or birth control pills). However, because condoms were clearly the preferred method in each sample, that item was included as the measure of contraception intention in our analyses.

Willingness to engage in unprotected sexual intercourse was measured with two questions: "Suppose you were out on a date with your boy/girlfriend and he/she wanted to have sexual intercourse. Neither one of you have used or have available a contraceptive method. Under these circumstances, how likely is it that you would do each of the following? a) not have sex; b) go ahead and have sex anyway without birth control?" Responses were rated on a scale ranging from 1 (*not at all*) to 7 (*very likely*). The first item was reversed, and then the two were added together to form a sexual willingness index ($\alpha = .57$; cf. Gibbons et al., 1995). Although the alpha for the two sexual willingness items is not high, the pattern of results on each one, when analyzed separately, is very similar.

Results

Overview

First, we present comparisons of the Danish and the American adolescents relevant to our assumption that the latter group is more oriented toward self-enhancement than is the former. Then, we present results regarding our first hypothesis, that is, that American adolescents exhibit greater false consensus and false uniqueness than Danish adolescents. Next, we present analyses relevant to the prediction of sexual willingness and smoking behavior. More specifically, we discuss the hypothesis that social influence measures predict risk behavior more so for American adolescents than for Danish adolescents, whereas prototypes predict risk behavior for both samples. We also present data on the independence of social influence and prototypes in predicting risk behavior.

Cultural Differences in Self-Enhancement and Social Influence

All analyses reported in this section included sample and gender as independent variables in a 2 (sample:

American vs. Danish) \times 2 (gender: male vs. female) factorial design. Gender was included for exploratory purposes only, as we had no specific predictions on this variable. In fact, there were some gender differences, but they did not alter the pattern of results discussed here (see below).

Social comparison. Our assumption was that the American sample would be more invested in self-enhancement than would the Danish sample. Several variables directly or indirectly provided evidence of this orientation (means, collapsed across gender, are presented in Table 1). First, participants were asked how much they engaged in social comparison in general. As expected, the Americans reported much more social comparison behavior ($M_s = 8.09$ vs. 6.49 for Americans vs. Danes, respectively), $F(1, 714) = 42.16, p < .01, \eta^2 = .06$. Participants were then asked what type of academic comparison they engaged in after receiving a test score, with the accompanying scale ranging from temporal or intrapersonal comparison to social comparison (i.e., from compare with one's own previous score to compare with others' scores). Americans showed a slight preference for social comparison, whereas the Danes slightly favored temporal comparison ($M_s = 6.76$ vs. 6.10 for Americans vs. Danes, respectively; scale midpoint = 6.5); difference between the two samples, $F(1, 714) = 10.94, p < .01, \eta^2 = .01$.

Self-description. A second indicator of self-enhancement was the self-description index of 12 adjective descriptors (e.g., popular, smart). A comparison of the two samples revealed more favorable self-descriptions by

Table 1
Means and Standard Deviations of Self-Enhancement and Social Influence Items

Item	American	Danish
Social comparison		
General	8.09 (3.11)	6.49 (2.86)
Self vs. other	6.76 (2.58)	6.10 (2.30)
Self-description	5.10 (0.64)	4.76 (0.63)
Kaplan social relations		
Parent	3.84 (0.52)	3.90 ^a (0.33)
Friend ^b	3.55 (0.65)	3.75 (0.52)
Social influence: Sex		
Friend	3.62 (1.92)	3.00 (1.74)
Parent	3.65 (2.08)	4.89 (1.75)

Note. ns: American males = 238–245, American females = 254–255, Danish males = 92–117, Danish females = 102–107. Standard deviations are in parentheses. For social comparison, scales ranged from 0 to 13; for social relations, scales ranged from 2 to 4; for all others, scales ranged from 1 to 7. High scores indicate more of the dimension or a more favorable assessment. For self vs. other social comparison, a high score indicates a more social (i.e., interpersonal) rather than a temporal (i.e., intrapersonal) comparison.

^a Sample difference is nonsignificant; in all other cases, sample means differ at $p < .01$. ^b Low scores indicate that participants felt more put down by peers.

the American sample ($M_s = 5.10$ vs. 4.76 for Americans vs. Danes, respectively), $F(1, 695) = 40.88, p < .01, \eta^2 = .05$. Evidence that this finding was not simply a reflection of differential self-esteem between the two samples is provided by the fact that when the analysis of variance (ANOVA) was repeated using self-esteem as a covariate, results remained virtually unchanged. Also, the four individual-difference measures (optimism, self-esteem, life satisfaction, and self-description) were standardized (both samples together) and were then entered into a 2 (sample: American vs. Danish) \times 4 (scale: optimism, self-esteem, life satisfaction, and self-description) repeated measures ANOVA to determine if the samples differed on any other dispositional variables. This analysis revealed only a significant Sample \times Scale interaction, $F(3, 2013) = 23.53, p < .01, \eta^2 = .03$, primarily because of the fact that the two samples did not differ on any of the items except self-description (all other $p_s > .17$).

Parental and peer influence. Indirect evidence of (negative) effects of self-enhancement and competitiveness can be seen in responses to the four items from the Kaplan Relations Scale, two of which concerned relations with friends and two of which concerned relations with parents (see Table 1). Each pair was combined to form an index, and then the two indexes were entered into a 2 (sample: American vs. Danish) \times 2 (gender: male vs. female) \times 2 (target: peer vs. parent) ANOVA. This analysis revealed a significant Sample \times Target interaction, $F(1, 687) = 6.16, p < .05, \eta^2 = .01$. Simple effects analyses indicated that there were no differences in perceived parental relations ($M_s = 3.84$ vs. 3.90 for Americans vs. Danes, respectively, $p > .15$). However, the American adolescents reported being put down more by their peers ($M_s = 3.55$ vs. 3.75 for Americans vs. Danes, respectively), $t(687) = 4.96, p < .01$, even though there were not sample differences in self-esteem. Finally, the most direct evidence of social influence came from the question pertaining to how friends' attitudes and opinions would influence participants' sexual behavior. The American sample reported more social influence than did the Danish sample ($M_s = 3.62$ vs. 3.00 , respectively), $F(1, 686) = 16.43, p < .01, \eta^2 = .02$. Interestingly, this pattern was reversed for the parental influence question ($M_s = 3.65$ vs. 4.89 for Americans vs. Danes, respectively), $F(1, 683) = 53.45, p < .01, \eta^2 = .07$. In sum, evidence across all four sets of items was consistent with the prediction that the American sample would report more self-enhancement, competition, and peer influence.

Cultural Differences in False Consensus and False Uniqueness

The Danish adolescents were engaging in significantly more of all of the behaviors except sex (see Table

2). Estimates of the prevalence of these behaviors did not differ by nearly as great an amount as the actual prevalence, however, which suggests, as expected, that the American adolescents were overestimating to a much greater extent. ANOVAs of the absolute overestimations (i.e., estimated-actual, which is a more conservative approach than percentage overestimation when actual prevalence is low) revealed significant differences between the samples across all four behaviors (all $F_s > 18.5, p_s < .01$).

False-consensus effect. As a test of the false-consensus effect, the two samples were divided into four pairs of groups according to whether they were currently engaging in each of the behaviors (e.g., smokers vs. non-smokers or drinkers vs. nondrinkers). The prevalence analyses were then repeated including behavior status as an independent variable. Of course, cell sizes were imbalanced. Standard deviations across cells for each of the four behaviors were quite stable, however, so these analyses are meaningful. There were significant Sample \times Behavior interactions on three of the four behaviors: smoking, sex, and drugs ($F_s = 9.59, 10.00$, and 5.11 , respectively, $p_s < .05, \eta^2_s = .01$). The Sample \times Behavior interaction was nearly significant on drinking, $F(1, 707) = 3.08, p < .08, \eta^2 = .00$. However, the Sample \times Behavior \times Gender interaction was significant on drinking, $F(1, 703) = 5.05, p < .05, \eta^2 = .01$, as the same pattern evidenced on the other three behaviors held for the male adolescents but not as clearly for the female adolescents. The pattern of these interactions was such that the false-consensus effect was much more pronounced (i.e., greater overestimation by those doing vs. those not doing the behavior) among the American sample than among the Danish sample. In fact, simple effects analyses indicated the false-consensus effect was not significant among the Danes for two behaviors: Danish smokers and drug users did not overestimate their respective behaviors relative to nonsmokers and nonusers (both $t_s < 1.50$).

False-uniqueness effect. Evidence of a false-uniqueness effect was provided by the fact that participants who indicated they were not engaging in the risk behaviors also overestimated prevalence. This was true for all four behaviors among the Americans (minimum overestimation = 17%; see Table 2). The Danes overestimated smoking and, to a lesser extent, sexual behavior. However, they were reasonably accurate on drug usage, and they underestimated drinking.

Predicting Current and Intended Risk Behavior

Predictor variables. The means, standard deviations, and correlations for all variables related to sexual willingness and smoking behavior are presented in Tables 3 and 4, respectively. The patterns on the sexual behavior intention and the willingness index measures were sim-

Table 2
*Actual Prevalence of Risk Behaviors and Estimated Prevalence as a
 Function of Behavior Status*

Risk behavior	American		Danish	
	Doers	Nondoers	Doers	Nondoers
Smoking				
Actual prevalence		5.8 _a		16.1 _b
Estimated prevalence	61.0 _a (20.2)	37.2 _b (22.6)	45.3 _c (18.5)	39.5 _{b,c} (20.1)
<i>n</i>	29	468	34	177
Drinking				
Actual prevalence		27.9 _a		79.4 _b
Estimated prevalence	65.7 _a (23.6)	45.3 _b (26.1)	68.3 _a (20.0)	56.3 _b (27.0)
<i>n</i>	140	358	170	43
Sex				
Actual prevalence ^a		12.4 _a		12.5 _a
Estimated prevalence	66.5 _a (24.2)	35.2 (24.1)	39.5 _b (20.6)	26.0 _c (20.4)
<i>n</i>	62	432	28	180
Drugs				
Actual prevalence		1.4 _a		9.9 _b
Estimated prevalence	40.7 _a (19.9)	21.8 _b (20.7)	14.4 _c (13.7)	14.6 _c (14.3)
<i>n</i>	7	490	21	190

Note. All percentages are collapsed across gender. Standard deviations are in parentheses. Across rows, means without common subscripts differ at $p < .05$.

^a Percentage of nonvirgins. Estimate is of sexually active peers.

ilar for the two samples, although there were significant differences between them. Both groups reported very high intentions to use condoms and thought that their friends would have a more or less neutral reaction to their sexual behavior. Both samples thought their parents would react negatively to their smoking and sexual behavior, although that was the case more so for the American sample than for the Danish sample. There were also some gender differences on these measures. Danish male adolescents reported more intention to have sex in the next year than did American male adolescents, whereas

the Danish female adolescents reported much greater sexual willingness and intention than did their American counterparts.

The Danish adolescents had a more positive pregnancy prototype index (i.e., favorable and similar to the self) and a much more positive smoking prototype index than did the American adolescents ($M_s = 9.61$ vs. 7.22 for Danes vs. Americans, respectively, on the pregnancy prototype index, and 11.39 vs. 6.38 for Danes vs. Americans, respectively, on the smoking prototype index; $p_s < .01$, $\eta^2_s = .04$ and $.13$, respectively). Finally, the means of

Table 3
*Means, Standard Deviations, and Correlations Among Predictor and
 Criterion Variables for Sexual Willingness*

Variable	1	2	3	4	5	6
1. Willingness	—	.00	.13	.13	.08	.33**
2. Condom intention	-.14**	—	.03	.05	-.11	-.02
3. Parent index	-.15**	.06	—	.29**	.28**	.20**
4. Friend index	.25**	.05	-.18**	—	.19**	.07
5. Prevalence estimate	.24**	-.03	.01	.29**	—	.13
6. Prototype	.34**	-.00	-.03	.23**	.24**	—
Danish						
<i>M</i>	5.39 _a	6.51	-2.38 _a	0.28 _a	16.87 _a	9.64 _a
<i>SD</i>	2.75	1.32	3.70	2.81	20.41	5.57
American						
<i>M</i>	6.18 _b	6.46	-5.79 _b	-0.74 _b	-17.61 _b	17.19 _b
<i>SD</i>	2.92	1.26	3.89	4.81	25.14	5.74

Note. Correlations for the Danish sample are above the diagonal, and correlations for the American sample are below the diagonal. Means with different subscripts within a column differ significantly at $p < .05$.

** $p < .01$, two-tailed.

Table 4
Means, Standard Deviations, and Correlations Among Predictor and
Criterion Variables for Smoking

Variable	1	2	3	4	5
1. Smoking frequency	—	.24**	.30**	.13	.45**
2. Parent influence	.24**	—	.20**	-.02	.08
3. Friend influence	.39**	.15**	—	.14*	.13
4. Prevalence estimate	.31**	.08	.34**	—	.10
5. Prototype	.55**	.07	.30**	.25**	—
Danish					
<i>M</i>	2.52	-1.35	-0.97	40.62	11.39
<i>SD</i>	1.64	0.67	0.90	19.93	6.88
American					
<i>M</i>	1.56	-1.88	-1.13	38.59	6.38
<i>SD</i>	1.07	0.36	0.91	23.15	5.65

Note. Correlations for the Danish sample are above the diagonal, and correlations for the American sample are below the diagonal. Sample means within a column differ at $p < .05$.

* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

the 12 adjective descriptors for both prototype indexes in both samples were slightly below the midpoint of the scale (all were between 3.3 and 4.0) and were significantly below the mean self-descriptions on the same adjective index ($ps < .01$ for all of the self vs. prototype comparisons). Thus, as in previous research, prototype perception was generally not very favorable in either an absolute or a relative sense (Gibbons et al., 1995).

Relations between prevalence estimates and behavior. The correlations between prevalence estimates and intended and actual behavior are presented in Table 5 (drug usage was not included because both its prevalence and its intention were too low to be meaningful). These

correlations were significant among the American sample for all three intentions and for the three associated behaviors (all $ps < .01$, with smoking being the weakest; cf. Sherman et al., 1983). The same correlations were much smaller among the Danish adolescents, with six of the seven correlations being significantly smaller than the corresponding American correlations. Thus, as expected, and consistent with the sample differences in self-reported peer influence, prevalence estimates were more highly correlated with risk behaviors for the American sample than for the Danish sample.

Social influence and prototypes. To test the hypothesis that social influence would be more predictive of sexual willingness and smoking behavior among the Americans, we performed two hierarchical regression analyses. First, social influence indexes were created for each behavior. The indexes consisted of the sum of the (standardized) peer and parental influence measures, plus the prevalence estimates (α s ranged from .27 to .50). Results of these regressions (i.e., betas at the final step of the analysis) are presented in Table 6.

For sexual willingness, sample (Danish vs. American) was entered into the equation first, followed by the social influence index, the prototype index, the Sample \times Social Influence interaction, and the Sample \times Prototype interaction. As can be seen in Table 6, the betas for the social influence index, the prototype index, and the Sample \times Social Influence interaction were all significant. The latter reflected the fact that social influence was more predictive of sexual willingness among the Americans, as was expected. For smoking behavior, the pattern was similar; however, the Sample \times Social Influence interaction was not significant. In contrast, the Sample \times Prototype interaction was significant, indicating that the prototype was more predictive among the Americans than among the Danes.

Table 5
Correlations of Estimated Prevalence With Current
and Intended Behavior

Behavior	American	Danish
Sexual estimate ^a with:		
Sexual behavior ^b	.57††	.31††
Sexual intention	.56††	.43††
Sexual willingness	.23††	.08
Smoking estimate with:		
Smoking behavior	.31††	.13†
Smoking intention	.15††	.16††
Drinking estimate with:		
Drinking behavior	.37††	.25†
Drinking intention	.36††	.11

Note. For the American sample, $N = 488$ –498; for the Danish sample, $N = 202$ –213.

^a Estimate of friends' sexual behavior; other estimates are of peers' ("people your age") sexual behavior. Correlations using estimates of peers' sexual behavior are comparable but somewhat weaker. ^b Correlation with virginity status. ^c The difference between these two correlations is nonsignificant; all other differences between sample correlations are significant at $p < .05$, one-tailed.

† $p < .05$, one-tailed. †† $p < .01$, one-tailed.

Table 6
*Hierarchical Regression Analysis for Variables Predicting
 Smoking Behavior and Sexual Willingness*

Variable	B	SE B	β
Sexual willingness			
Sample ^a	0.56	0.45	.09
Social influence index ^b	0.71	0.21	.46**
Prototype index	0.11	0.06	.22*
Sample \times Social Influence Index	-0.36	0.18	-.27*
Sample \times Prototype Index	0.03	0.04	.09
Final R^2			.18**
Smoking behavior			
Sample ^a	0.11	0.06	.08
Social influence index ^b	0.20	0.05	.30**
Prototype index	0.11	0.01	.77**
Sample \times Social Influence Index	-0.03	0.05	-.04
Sample \times Prototype Index	-0.03	0.01	-.19**
Final R^2			.54**

^a Sample was coded as United States = 0, Denmark = 1. ^b Social influence index is the sum of the (standardized) parental and peer influence and estimated prevalence.

* $p \leq .05$, two-tailed. ** $p < .01$, two-tailed.

Finally, to compare the prototype results, especially those from the Danes, with comparable results from previous studies, we ran separate regression analyses on the two samples, in which all of the predictors (i.e., intention, gender, peer and parental influence, motivation to comply [for sex], and prevalence estimates) were entered prior to the prototype measure. Results indicated that the prototype significantly predicted both behaviors for both samples, even after all of the other predictors (main effects) had been entered ($ps < .01$ for all four prototypes).

Discussion

Cultural Differences

Social comparison. Our assumptions regarding the general perspective of Danish and American adolescents were supported by the data. Responses to virtually all of the self-enhancement items were consistent with previous observations that American society is more achievement oriented than is Danish society and that American adolescents, in particular, are more invested in self-enhancement (Hsu, 1983), apparently sometimes at the expense of their peers. Perhaps the fundamental difference between the two samples involves social comparison, however. The Americans indicated that they were more likely to compare themselves and their performances with their peers than were the Danes. Although the argument certainly could be made that there are a number of benefits associated with this competitive orientation, one downside indicated by our data is that

American adolescents were more likely to feel put down by their peers. Along the same lines, and more germane to the current analysis, the American adolescents also reported being more influenced by their peers than did the Danish adolescents.

Behavior. Consistent with previous surveys, actual prevalence of the risk behaviors was higher among the Danes than among the Americans for all behaviors except sex. Nonetheless, with the exception of drinking, all of the behaviors were relatively uncommon, with the highest prevalence rate being 16% for Danish smoking. Moreover, additional evidence that the behaviors would be considered relatively deviant, besides the prevalence rates, is provided by the fact that both samples did maintain relatively unfavorable prototypes for smoking and unprotected sex. In fact, even those who were doing the behaviors had mildly negative perceptions of the prototypes. Thus, the two assumptions that led to our prediction of greater prevalence estimates among the Americans were supported: greater tendency toward self-enhancement among the Americans and relative deviance of the behavior in both samples, although there was more evidence of deviance in the American sample.

Prevalence Estimates

The first, primary hypothesis was also supported. Both groups overestimated prevalence of the risk behaviors (except Danish drinking), but the amount of overestimation was much greater among the Americans. This overestimation occurred whether or not the adolescents were currently doing the behavior, which means there was greater evidence of both false consensus and false uniqueness among the Americans. Our interpretation of this pattern is that it is not consistent with a cognitive-salience explanation. There are two predictions that could be derived from the cognitive approach, and neither of them received much support from the data. The first prediction is that the Danes should have overestimated prevalence to an extent comparable with the Americans because even in Denmark the behaviors are relatively rare and deviant (and presumably quite vivid and cognitively available).

Alternatively, the cognitive-salience explanation might suggest that there would be more overestimation by the Americans, but only for those behaviors with a lower actual base rate. The argument is that the smaller the actual prevalence, the more attention is directed to the minority behavior and, therefore, the greater the percentage overestimation (Mullen & Hu, 1988). Surprisingly, that pattern did not really hold across the two samples. There was some tendency for percentage overestimation to be linked to actual prevalence, as might be expected; however, that was almost entirely due to the

two outlier behaviors: Danish drinking, which did not produce either a false-uniqueness effect or overestimation, and American drug usage, for which the actual prevalence was so low that percentage overestimation would be misleading. Excluding these two behaviors, there was no relation between actual prevalence and percentage overestimation across the samples.

More important, the cognitive-salience explanation would not predict greater overestimation or false-consensus effect in absolute terms, even though actual prevalence was significantly smaller, which was in fact the case for the Americans relative to the Danes for two of the four behaviors. This sample difference is most evident on drug usage, which the Americans estimated at 50% higher than the Danes, even though the actual rate (albeit small in both samples) was eight times higher in Denmark. In a similar manner, estimates of smoking prevalence were almost identical for the two samples, although the actual rate was almost three times higher in Denmark.

By the same token, the fact that sexual behavior, which is not visible, was overestimated by a substantial amount by the Americans, suggests they were making some inferences about the popularity of the behavior that were more or less independent of their actual base rates. One certainly could make the argument that adolescents are more likely to talk about behaviors they are doing than about those they are not. Even this "auditory salience" argument would not suggest greater overestimation by the Americans, however. Why would the Americans talk to their peers more than did the Danes about a behavior they are engaging in, when that behavior is less sanctioned by those peers (cf. Christensen, 1973)? This would presumably discourage, rather than encourage, such talk.

Why overestimate? Our conclusion on the issue of motivation versus cognition is similar to that of Suls and Wan (1987). We believe that both the false-consensus effect and the false-uniqueness effect—when involving behavior that is somehow stigmatized or deviant—are primarily motivated phenomena. Moreover, cultural differences in these effects do appear to be a reflection of the greater emphasis that American society places on competition and self-enhancement. We see two related reasons why these motivations exist. First, given that these students have been told and apparently have learned that the behaviors are unwise, claiming that others do it will have a clear self-enhancing effect. This effect may occur either by reducing its perceived dangerousness for those who do engage in the behavior (cf. Jemmott et al., 1986) or simply by "healthy contrast" for those who do not. A second reason has to do with the correlation between estimates and intentions. Claiming consensus or normalizing the behavior, in essence, increases the adolescent's freedom to engage in the activity should the op-

portunity arise (cf. Snyder & Wicklund, 1981). In fact, subsequent regression analyses with longitudinal data from the American sample indicated that their prevalence estimates (i.e., those reported here) did predict change in the associated behaviors, even after intention to engage in those behaviors had been accounted for statistically. In sum, at least in the United States, an increase in perceived prevalence is an early indicator that the adolescent is seriously considering starting the behavior.

Prevalence and behavior: A paradox. Among the Danes, and especially among the Americans, the prototypes generally tended to be unfavorable, and they were much more negative than the corresponding self-ratings (cf. Gibbons & Gerrard, in press-a; Gibbons et al., 1995). This finding suggests an interesting type of prevalence paradox for the majority of adolescents who have not yet started smoking, drinking, or having sex. On the one hand, the belief that many people are doing these unwise behaviors does make those who are not doing them feel better about their own actions (Suls & Wan, 1987; Suls et al., 1988). On the other hand, this belief of false uniqueness also apparently increases the likelihood that they will eventually decide to do the behaviors themselves. This suggests some possible intervention strategies that we discuss later.

Prototypes

Cultural differences. Prototype perception was more favorable among the Danes than among the Americans for both smoking and unprotected sex. We had anticipated some difference on smoking (though not as much as was found), given the greater prevalence of the behavior in the Danish sample. The difference on the pregnancy prototype (also stronger than expected) does suggest a more liberal attitude among the Danes (cf. Christensen, 1973). To further investigate these differences, we conducted individual analyses on each of the 12 adjective items. These analyses indicated that the largest differences between the samples for both prototypes were on the items *smart* and *cool*, with the Americans being much less positive (both $F_s > 53.0$, $p < .01$). This was followed (in magnitude of difference) by the items *considerate* for smoking and *immature* for unprotected sex. Although it would be unwise to place too much importance on the individual items, this does still say something of interest about how the two societies perceive these behaviors and perhaps also about where the images originate or how they are learned. For example, it would appear as if efforts to reduce the sophistication component of the smoker prototype among American adolescents (e.g., through health-education advertisements; cf. Davis, 1987) may have had some success.

Predicting behavior. The prototypes did predict

both sexual willingness and smoking behavior quite well for these adolescents. This was true in the Danish sample, in spite of the fact that the prototypes were more favorable and had somewhat less variance associated with them and that the (peer) social influence factor was reported to be less important for the Danish adolescents. Moreover, regression analyses indicated that the prototypes remained significant predictors even when all of the other social influence variables had been entered into the equation, which means the prototypes are apparently not proxies for other social influence constructs. Thus, these risk images do appear to be an important predictor of Danish adolescents' willingness to engage in health risk behaviors, just as they have been shown to be important for American adolescents. This suggests that the prototype construct does have good generalizability, both overall and with regard to risk behaviors in particular. In short, whether the image is favorable, and in spite of its cultural context, it remains an important independent variable in an adolescent's decision to engage in risky behavior.

Gender Differences

We had no prior predictions regarding gender differences. However, Gender \times Sample interactions did appear consistently on the peer and the parental influence items, as well as on the prototype and the sexual willingness indexes. The pattern was such that the American female adolescents were the most conservative in their perceptions, whereas the Danish female adolescents tended to be as liberal, if not more so, than the Danish male adolescents. Other than a main effect reflecting greater male sexual willingness among the Americans, however, the predictive pattern vis-à-vis risk behavior was similar for male and female adolescents in both samples. Discussion of gender differences is beyond the scope of this article, so we do not speculate on this issue.

Limitations

Several potential limitations of this research should be mentioned. First, we examined only one culture outside the United States, and, of course, the constructs and behaviors we measured could vary noticeably in other countries. Second, cross-cultural researchers have previously suggested that response styles may vary across cultures, thereby contributing to artifactual group differences (e.g., Hui & Triandis, 1989). It is possible, although we cannot tell for sure, that the two samples in the current study interpreted the questions somewhat differently. We do know, however, that the variances across the two samples for all items were quite comparable (there were only two variables on which the standard

deviation of one sample exceeded that of the other sample by more than 40%; for both of these variables, the ratio was less than 2:1). Moreover, when the regression analyses were repeated after standardizing the predictor variables separately in each sample, the results were unchanged.

Two additional problems are also worthy of mention. Although most of the hypothesized effects were significant, the low reliabilities of some of our indexes raise questions about our ability to use them to adequately test interaction terms. More specifically, the reliability of the two social influence indexes (sums of the peer and the parental influence indexes and prevalence estimates) may have been sufficiently low so as to compromise our test of the Sample \times Social Influence interaction in the regression we used to predict smoking behavior. In general, such measurement error would suggest that our statistical analyses underestimated actual effects. The low reliability was at least partly due to our efforts to create items that would be meaningful to adolescents in both cultures. At any rate, given the importance of social influence for this age group and these behaviors, future research should be directed toward the development of better measures of these constructs. In addition, as with most studies of health risk behaviors, this study used self-reports of behavior as well as attitudes and influence. Although correlations with parental reports were relatively high, it is possible that both groups, but especially the American adolescents, were underreporting their risk behaviors. However, what we called actual prevalence rates were similar to national norms for this age group for both samples (e.g., for the Americans, they were slightly less than the norm on sex and smoking but were slightly above average for drinking; cf. U.S. Department of Health & Human Services, 1990). In addition, the test-retest reliabilities of the self-reports from the American sample have proven to be adequate (Gibbons & Gerrard, 1994). Nonetheless, there is reason for some caution when interpreting self-reports of behaviors of this nature. Finally, the actual prevalence rates were low, which suggests the study should be replicated with an older, more experienced sample, preferably with a longitudinal design.

Implications and Conclusions

There is another interesting paradox evident in our cross-cultural comparisons. On the one hand, our data are consistent with other researchers' observations that American society is more individualistic than Danish society and many other societies as well (Hofstede, 1980, 1983; Triandis et al., 1988). On the other hand, part of that individualism clearly includes an element of what we would call social, or perhaps other, orientation. Indeed, as we suggested earlier, it appears to be the case that

American individualism involves an increased reliance on the self relative to (or in comparison with) others. That effect was evidenced in our sample by the fact that the American adolescents were more influenced than were the Danish adolescents by normative factors, including perceptions of friends' behaviors as well as their reactions. Moreover, these social influence factors were also significantly more predictive of sexual willingness among the Americans.

There are some definite disadvantages inherent in this social susceptibility, and some of these disadvantages are also evident, or at least implied, in our data. Included among these are vulnerability to social pressure and, perhaps, conformity (Triandis et al., 1988). There is also some reason for optimism as far as risk behavior is concerned. For one, the misperceptions the Americans reported regarding prevalence estimates—which were closely linked to their risk behaviors—are potentially correctable (cf. Graham et al., 1991, Adolescent Alcohol Prevention Trial program). The same is true for their perceptions of their friends' reactions to the behaviors. In this regard, some researchers have suggested that lack of communication among adolescents about sensitive topics, such as drinking, may contribute to a type of "pluralistic ignorance" (Prentice & Miller, 1993) that is reflected in a misperception of how favorable peers' opinions are regarding the behavior and, more basically, of how many are actually doing the behaviors (U.S. Department of Health & Human Services, 1990). Both of these misperceptions could be corrected through education programs that emphasize or promote communication.

By the same token, efforts to alter the nature of the prototypes should prove effective at altering the behavior. For example, when Great Britain banned "tough images" from cigarette advertising, the percentage of British children who reported that looking tough was a reason why they smoked declined noticeably (Charlton, 1986). It is also consistent with our own research that indicates that a decline in perceived favorability of and similarity to the prototype is a predictor of a decline in behavior, independent of intention to stop (Gibbons & Gerrard, in press-a). That may very well be the case more so for the Americans than for the Danes, however, given that there is reason to believe that the former group is more susceptible to social influence attempts, in general, and to social images, in particular. In short, it may be possible to use the strong link between prototype perception, social influence, and behavior to an educational advantage (Gibbons & Gerrard, in press-b).

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