

Chapter 2

Misperception Is Reality: The “Reign of Error” About Peer Risk Behaviour Norms Among Youth and Young Adults

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Introduction

Social norms were viewed as the cultural and structural underpinnings of human behaviour and organization and were a key focus in the founding of the discipline of sociology as exemplified in the classic theory and research of Emile Durkheim. In addition to the study of how widely held beliefs and widely practised behaviours ground individual actions and provide people with a sense of meaning and purpose, over half a century of voluminous empirical studies in social psychology point to the power of group norms in influencing individual action. These experiments date all the way back to the classic experiments of Solomon Asch (1951, 1952, 1956) and Musafer Sherif (1936, 1972). Numerous topics remain for contemporary study, however, regarding the complexity of how social norms are constructed (or emerge and evolve) and how they exert control over individuals’ behaviour.

In this chapter I focus on a particular theoretical and empirical issue that has emerged in recent decades, that being the extent to which group norms might be misperceived by group members and the implications of this perceptual “error” for personal actions that are presumed to be influenced by norms. On the one hand, actual group standards may exist that control or influence individual behaviour as a contextual effect, regardless of one’s consciousness of a particular norm. On the other hand, people may behave in accordance with what they perceive to be peer group standards and also attempt to influence the behaviour of others to act in line with their normative perceptions, irrespective of the accuracy of these perceptions.

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Furthermore, I specifically focus this theoretical discussion and literature review of misperceived norms on one broad topic area of applied research, that being norms regarding risk behaviours among youth and young adults. The rationale for concentrating on this area of research in my examination is straightforward. Although a few studies regarding other topics have appeared on occasion examining misperceived norms, one of the earliest empirical investigations was focused on youth risk behaviour (student alcohol abuse) and it simultaneously suggested an approach for applying the model to address this widely acknowledged social problem (Perkins & Berkowitz, 1986). From that initial study to the present, by far the largest body of empirical studies on misperceived norms has been devoted to research on youth and young adult risk behaviours. This area of research now provides enough collective studies to be able to generalize about misperceived norms in this area and the conclusions drawn have direct implications for promoting health and well-being.

I initially review the social science research empirically demonstrating substantial discrepancies in actual and perceived norms concerning risk behaviour. I then consider research on the empirical correlation of perceived norms with personal behaviour as well as research on that association independent of and in comparison to the association between actual norms and personal behaviour across populations. Finally, I review theory and research literature examining what produces these misperceptions, whether misperceptions can be altered or corrected by revealing accurate peer norms within the social group, and whether any change achieved in perceived norms produces subsequent change in individual behaviour.

This chapter focuses on this set of questions as one way in which norms may be “dynamic.” That is, actual youth and young adult norms regarding healthy and risky behaviours may be more or less influential upon individuals depending on how these norms are filtered through the individuals’ perceptual assessments and interpretations of peer norms. If perceived norms are a salient aspect of normative influence, to the extent that perceptions of norms can be changed, the outcome of such change in perceptions may be a concomitant shift in personal attitudes and behaviours.

At the outset of any discussion on social norms one must acknowledge that the search for a specific definition of social norms has not produced consensus (Horne, 2001). Various definitions concentrate on sanctions, values (“oughtness”), or behavioural regularities (Hechter & Opp, 2001). Some social scientists restrict the definition to social expectations that are clearly backed by rewards and consequences to assure widespread compliance while others focus on particular attitudes or beliefs that implicitly, if not explicitly, convey beliefs about morally acceptable behaviour. Other theorists and researchers focus on the instrumentality of social norms and point to shared practices and beliefs that function to bind people together in solidarity and provide a unified identity for the group. Still others adopt a broad empirical approach by examining the most common or majority attitudes in a group (injunctive norms) and the most common or majority behaviours in a group (descriptive norms) (Cialdini, Reno, & Kallgren, 1990) and how they impact individual attitudes and behaviours as well as group functioning. Recognizing that definitional matters can be important but also that resolution of the differences in definition is not likely

or essential for the discussion that follows, the latter broad definitional approach—simply identifying norms as the dominant attitudes (injunctive norms) and practices (descriptive norms) of a group—is adopted here.

Actual Norms and Perceived Norms

Few social scientists would disagree with the claim that conformity to peer group norms is a widespread phenomenon and that peer influence, in addition to personal attitudes, is a powerful determinant of personal actions in many group contexts as individuals look to others in their midst to help define the situation and give guidance on expected behaviours. Indeed, although many people frequently think of themselves as individuals in their actions, a considerable degree of peer influence is consistently documented in laboratory experiments, social surveys, and observations of crowd behaviour. In studies on antecedents of personal health-related behaviours, for example, extensive evidence has supported the theory of reasoned action (Ajzen & Fishbein, 1980) and its extension, the theory of planned behaviour, which posits norms as a determinant of personal behaviour along with personal attitudes and perceived behavioural control (Ajzen, 2001, 2002; Ajzen & Madden, 1986).

Most research exploring the potential influence of social norms on personal behaviour has failed to distinguish, however, between the potential influence of actual group norms and the perception of norms. The research literature on normative influence prior to the mid-1980s provides many studies that (1) examine the effects of variation in aggregate group characteristics on individual attitudes and behaviours but do not consider perceived norms, or (2) use subjective assessments of peer norms as a proxy for actual norms when predicting the effect of norms on personal behaviour without directly considering the accuracy of these subjective reports of peer norms. Systematic examination about the question of accuracy of perceived peer norms and the subsequent empirical question about the simultaneous relative influence of both actual and perceived norms has emerged only in the last few decades (Perkins, 2003a). Here, one finds the most detailed theoretical explications and reviews of the most extensive empirical research (Berkowitz, 2005; Borsari & Carey, 2001; Carey, Borsari, Carey, & Maisto, 2006; Perkins, 1997, 2002, 2003b) concentrating primarily on alcohol and substance abuse among adolescents and young adults.

The Pervasiveness of Misperceived Peer Norms

The first study to bring concentrated attention to misperceived norms by examining the possible systematic discrepancy between actual peer norms (as reflected in the aggregate of reported personal attitudes and behaviours) and perceived norms was

focused on high-risk drinking among university students at one small institution of higher education in the USA (Perkins & Berkowitz, 1986). Large discrepancies were uncovered in that study between what was most typical of students' attitudes and behaviours and what was perceived to be most typical. Most students misperceived the norm by substantially overestimating the permissiveness of peer drinking attitudes and the extent of alcohol consumption. Students did so even though actual drinking norms were relatively heavier than what is found in many collegiate settings, due to the school's socio-demographic characteristics and regional setting. As part of the survey, students were given a range of five possible responses to indicate their attitudes toward alcohol use from the most conservative (drinking is never good) to the most permissive (frequent intoxication is acceptable and even if it interferes with other responsibilities). About 14 % held a relatively conservative personal attitude, about 66 % took a moderate position, and about 19 % were relatively permissive believing that frequent intoxication or intoxication that occasionally interfered with academics and other responsibilities was acceptable (only 1 % did not respond to the question). Thus, the vast majority of responses—and hence the norm for personal attitudes—was shown to be moderate. But when asked to give their impression of the general campus norm in the same survey, students painted a very different picture. Using identical response categories, virtually no one perceived the general norm to be conservative, only about one-third perceived it as moderate (the actual norm), and almost two thirds (63 %) saw their peers on campus as having a very permissive attitude toward drinking. Thus, while four-fifths of students believed that one should never drink to intoxication or that intoxication was acceptable only in limited circumstances, almost two-thirds thought their peers most typically believed frequent intoxication or intoxication that did interfere with academics and other responsibilities was acceptable.

This gross misperception of drinking norms was not simply the result of a particular historical situation momentarily distorting students' perceptions. Research conducted at multiple time points several years later at the same institution demonstrated the same pattern of drinking norm misperceptions (Perkins, 1994). Moreover, following the initial study, a similar pattern of dramatic misperceptions about peer drinking norms was subsequently found to exist in studies of a variety of other individual colleges and universities in the USA. For example, students at a New England state university (Burrell, 1990) perceived their friends as heavier drinkers than themselves, and among students attending a large university in the Northwest (Baer & Carney, 1993; Baer, Stacy, & Larimer, 1991), misperceptions of peer drinking norms were found to persist across gender and housing types. Page, Scanlan, and Gilbert (1999) also found that both males and females overestimated the extent of heavy drinking among peers of the same and opposite gender at a school in the Northwest. In survey investigations using multiple strategies, Prentice and Miller (1993) found misperceptions of peers' attitudinal norms about drinking among students at a prestigious east coast private university. Misperceptions of frequent or heavy episodic drinking were uncovered in a midsized Midwestern state university (Haines & Spear, 1996), a large state university in the Southwestern USA (Johannessen & Glider, 2003) and a midsized public university in the Mid-Atlantic

East coast region (Jeffrey, Negro, Miller, & Frisone, 2003). Research on specific behaviours such as preparty drinking and drinking game participation has also revealed substantial overestimates of the peer norm (Pedersen & LaBrie, 2008).

Although most research on misperceived norms has focused on student drinking, the phenomenon is not uniquely characteristic to the consumption of alcohol, but extends to other risk behaviours. For example, Hancock and Henry (2003) found that while the past month prevalence of smoking tobacco was between 30 and 40 % for two large public universities in the southeastern USA, students on average estimated the prevalence among peers to be 54 and 57 % at these schools. Although abstinence from marijuana use was the norm for three northwestern colleges, Kilmer et al. (2006) found that students grossly misperceived the norm with 98 % believing that the students in general used marijuana at least once per year if not more frequently. LaBrie, Hummer, Lac, and Lee (2010) have similarly reported that students misperceive injunctive (attitudinal) peer norms about marijuana. Another study conducted at one large university found 70 % of students overestimating peer use of non-medical prescription stimulants and prescription opioids (McCabe, 2008).

In a nationwide study of over 45,000 students attending 100 colleges and universities in the USA, Perkins, Meilman, Leichliter, Cashin, and Presley (1999) found a consistent difference between the self-reported frequency of drinking and students' perceptions of the frequency of peer alcohol consumption in campus contexts where abstinence or infrequent use were the median of self-reports and also where the median of self-reports revealed more frequent actual use. Furthermore, students in this study substantially overestimated the frequency of peer use of tobacco, marijuana, cocaine, amphetamines, sedatives, hallucinogens, opiates, inhalants, designer drugs, and steroids. A subsequent nationwide study of over 72,000 students attending 130 schools across the USA (Perkins, Haines, & Rice, 2005), likewise, found a consistent pattern of misperceptions among students across all types of institutions when examining the quantity of alcohol consumed, regardless of variation in the actual norm across schools. Although actual norms for the number of alcoholic drinks consumed at parties and social occasions ranged from abstinence for a few schools to a high of seven drinks in one institutional setting (with norms ranging from two to five drinks in most school settings), the majority of students attending schools with each level of actual consumption substantially overestimated the consumption of local peers.

When this consistent evidence of dramatic misperception is presented, a question often arises concerning the possibility that individuals may be simply underreporting their own behaviour rather than misperceiving the norms of peers. Several arguments counter this possibility, however. First, the survey evidence reported here is almost all gathered in anonymous surveys, thus reducing presumed pressure to hide personal behaviour. Second, large gaps between actual norms based on self-report and perceived norms are found in circumstances where the behaviour is legal (e.g. tobacco use and alcohol use in young adult populations) in addition to research on illegal behaviour. Third, these large misperception gaps with actual norms are also found based on questions about personal attitudes and perceived attitudes of others which dismisses the notion that the gap could simply result from a bias in

recall error in self-reported behaviour. Fourth, theoretical logic and research about normative influence would suggest that any bias in self report would operate in the direction of minimizing the gap between self-reported attitudes/behaviours and perceptions of the norm. Fifth, research based on breath analyzer studies to determine actual drinking norms rather than relying solely on aggregated self-reports (e.g. Foss, Marchetti, & Holladay, 2001; Thombs, Olds, & Snyder, 2003) also supports the finding that students typically perceive the norms for the amount of drinking among peers to be substantially greater than is actually the case, and that they do not, on average, under report their own consumption.

In recent years findings of pervasive misperceptions of alcohol and drug use norms among university students have also been documented in several studies outside the USA (McAlaney, Bewick, & Hughes, 2010). For example, in a study of students attending a large university in New Zealand, Kypri and Langley (2003) found that while 0 % and 3 % (women and men respectively) expressed underestimates and 20 % and 23 % were accurate in their perceptions of the norm, 80 % and 73 % overestimated the prevalence of heavy weekend drinking among peers. Also in this study, women were three times as likely, and men were more than twice as likely, to overestimate the 3 month prevalence of alcohol-induced vomiting among peers compared to underestimating its prevalence. In reports of the number of days drinking per month, students attending a university in Scotland estimated that their peers drank more than twice as often as indicated by self reports (McAlaney & McMahon, 2007). Likewise, students' average perception of the frequency of other students being drunk each month was double that reported by students at this university. Similarly, a study of 11 institutions across seven provinces of Canada revealed that regardless of the actual drinking norm at each school, students tended to misperceive the norm in each context with 84 % overestimating the frequency of consumption and 76 % overestimating the amount consumed at parties and bars (Perkins, 2007). Arbour-Nicitopoulos, Kwan, Lowe, Taman, and Faulkner (2010) reported a perception vs. actual norm gap for tobacco and marijuana as well as alcohol in research among Canadian university students at one university. Data collected on university students in five Latin American countries (Brazil, Chile, Colombia, Honduras, and Peru) revealed overestimations of the prevalence of using tobacco, marijuana, and cocaine, and although the prevalence of alcohol use was not typically overestimated, drinking was perceived to be much more frequent than the actual frequency norm (Bustamante et al., 2009).

Although the research on misperceived substance use norms is most prevalent for college student samples, the phenomenon is not characteristic of higher education populations alone. A state-wide study of 21–34-year-olds (only a small portion of them were current students) in Montana found massive overestimates of peer drinking and driving behaviours (Perkins, Linkenbach, Lewis, & Neighbors, 2010). Extensive misperception of exaggerated peer norms for alcohol, tobacco, and other drug use has also been documented in secondary schools with students ranging in age from 10 to 18 based on diverse samples collected in the USA (Beck & Treiman, 1996; Haines, Barker, & Rice, 2003; Linkenbach & Perkins, 2003; Perkins & Craig, 2003a), in four countries (Hungary, Slovakia, Czech Republic, and Romania) of

Eastern Europe (Page, Ihasz, Hantiu, Simonek, & Klarova, 2008; Page, Ihasz, Simonek, Klarova, & Hantiu, 2006), and in Tasmania (Hughes, Julian, Richman, Mason, & Long, 2008).

Following upon the documentation of overestimation of peer support for and use of alcohol, tobacco, and illicit drugs, other research on adolescents and young adults has directed the study of misperceived norms to other areas of health-related problem behaviours. For example, a study in eight secondary schools in the western USA revealed that students overestimated the norm for the amount of sugar-sweetened beverages consumed by other students in their class year for each class year cohort in each school (J. Perkins, Perkins, & Craig, 2010a). A study of secondary students in a large London, England borough revealed substantial misperception of peer body weight norms where 34 % of males and 32 % of females substantially overestimated the same gender and class year weight norm and 37 % of males and 43 % of females underestimated the peer norm (J. Perkins, Perkins, & Craig, 2010b). Multiple studies of students attending universities located in diverse regions of the USA have documented misperception of norms regarding sexual activity (Lewis, Lee, Patrick, & Fossos, 2007; Lynch, Mowrey, Nesbitt, & O’Neill, 2004; Martens et al., 2006; Scholly, Katz, Gascoigne, & Holck, 2005; Seal & Agostinelli, 1996). These studies document students substantially overestimating the frequency of various peer sexual behaviours such as vaginal and anal intercourse and oral sex, overestimating peers’ number of sexual partners within the last year, and underestimating the prevalence of peer protective behaviours such as condom use. Other studies have uncovered misperceptions of peer norms (overestimates) concerning male perpetration of intimate partner violence among male perpetrators of such violence (Neighbors, Walker, et al., 2010), and among male college students, misperceptions of peer norms (underestimates) of both males’ and females’ beliefs about the importance of consent in sexual activity and willingness to intervene against sexual violence (Fabiano, Perkins, Berkowitz, Linkenbach, & Stark, 2003). Similarly, overestimates of peer attitudes tolerating bullying, overestimates of peer perpetration of bullying, and underestimates of the willingness of peers to report bullying to teachers or authorities were found in each of five middle schools studied in the state of New Jersey in the USA (Perkins, Craig, & Perkins, 2011).

Perceived Norms and Personal Behaviour

Even though misperceptions of norms were pervasive, some individuals perceived peer norms with a good deal of accuracy in the research described above, and among those who did not, there was considerable variation in the degree of misperception in many instances. Thus, we must also consider the implications of this variation in perceived peer norms. What is the potential effect of differing perceptions of the norm among individuals who all share the same peer group? If norms do exert a force on individual behaviour, and if the classic sociological dictum holds true that situations or circumstances perceived as real are real in their consequences

(Thomas & Thomas, 1928), then it is reasonable to expect that this variation in perceived norms (or the degree of accuracy in estimating the norm) will be significantly associated with variation in personal behaviour within the group. That is, at least part of the impact of social norms is likely to occur through one's impression of the norm regardless of one's accuracy in estimating its objective existence. Perceptions of the norm, be they accurate or inaccurate, must be taken as important in their own right since people act on their perceptions in addition to acting within an objective normative world. Thus, if misperceptions are pervasive and if perceived norms are influential, the result may be a classic "reign of error" (Merton, 1957) where a false definition of the situation evokes new behaviour as misperceptions control personal action in various populations and contexts.

An association between the perceived norm and personal behaviour is, indeed, commonly demonstrated in empirical research on adolescent/young adult health and problem or risk-related behaviours. For example, several studies using data collected in a variety of secondary schools and colleges in different countries demonstrate a significant positive association between the variation in what students believe to be the norm among other students at their school regarding alcohol use and variation in personal drinking behaviour (cf. Clapp & McDonnell, 2000; Hansen, 1993; Hughes et al., 2008; McAlaney & McMahon, 2007; Neighbors, Lee, Lewis, Fossos, & Larimer, 2007; Page et al., 2008). One nationwide study of 140 colleges and universities throughout the USA with a sample of 17,562 students (Perkins & Wechsler, 1996) found that the perception of more permissive peer attitudes (injunctive norm) was significantly associated with greater personal negative consequences of alcohol use after controlling for the student's personal attitude regarding alcohol consumption and variation in alcohol abuse among schools in the study. Research in diverse settings has also demonstrated a significant positive correlation between perceived peer norms and other personal behaviours including: (a) tobacco use among students attending a French university (Franca, Dautzenberg, Falissard, & Reynaud, 2009) and high school students in Eastern European countries (Page et al., 2006), (b) marijuana use among university students at three schools in the northwestern region of the USA (Kilmer et al., 2006), (c) sugar-sweetened beverage consumption in eight secondary schools in the western USA (J. Perkins et al., 2010a), (d) sexual activity and risk-related behaviour in two studies of university students attending schools in different regions of the USA (Lewis et al., 2007; Martens et al., 2006), (e) extent of intimate partner violence among male perpetrators studied in one region of the USA (Neighbors, Walker, et al., 2010), and bullying attitudes and behaviours among middle school students (class years 6–9) in one school in Portugal (Almeida, Correia, & Marinho, 2010) and five schools in an east coast state of the USA (Perkins et al., 2011).

Five additional studies demonstrating an association between perceived peer norms and personal risk or problem behaviour among youth and young adults are especially important to single out here as they examined the degree of association between the actual local peer norm and personal behaviour simultaneously with the degree of association between the perceived peer norm and personal behaviour. This type of multivariate analysis requires a large data base with data collected

from several sites providing variation in actual norms along with the variation in perceived norms that commonly occurs. Perkins et al. (2005) provide such an assessment with data collected from more than 72,000 students attending 130 colleges and universities in the USA. Based on the aggregate personal behaviours of students at each school, the actual norm for amount that students drink in social situations at each school was used to predict personal quantities consumed while the student's perceptions of the peer norm at his or her school simultaneously was introduced as a predictor of personal consumption in a multivariate analysis. Student perception of the local campus drinking norm was the strongest predictor of the amount of alcohol personally consumed in comparison with the effects of the actual campus drinking norm and all other demographic variables included in the study. A subsequent study of more than 5,000 university students attending 11 institutions across Canada (Perkins, 2007) produced a parallel result with perception of the peer drinking norm at the local institution providing the strongest predictor of personal consumption among all variables and a much larger association than that of the actual norm with personal consumption. Another study focused on alcohol consumption specifically among 4,258 college student-athletes in 15 colleges and universities located across the USA and analyzed the predicted effects of both male and female actual and perceived norms (Perkins & Craig, 2012). Perception of the male student-athlete drinking norm was the strongest predictor of personal drinking levels for both genders in comparison with the effects of the actual male and female norm and demographic variables. The perceived female student-athlete drinking norm was also a strong predictor of female but not male consumption. A fourth study examined sugar-sweetened beverage consumption (SSBC) in a sample of 3,831 secondary school students representing 29 grade level cohorts from grades 6 to 12 in eight schools in the western USA (J. Perkins et al., 2010a). Here, again the perceived norm for SSBC was by far the strongest predictor of personal SSBC compared to all socio-demographic variables included in the study, and the estimated actual SSBC norm for the students' local grade cohort had no significant effect. The perceived norm independently accounted for 34 % of the explained variation in personal SSBC while all other variables accounted for only 5 % of the personal SSBC variation. The fifth study examined the association of secondary school students' personal body mass index (BMI) with the estimated actual and perceived average weights of the same-sex students in one's class year in one's local school (J. Perkins et al., 2010b). The data from 2,104 students represent 37 same gender and class year cohorts drawn from 14 secondary schools in a large and ethnically diverse borough of London, England. For males, personal BMI was significantly predicted simultaneously by both their perceptions of the peer (same gender and class year) norm and by actual cohort norms with about equal predictive power. For females, personal BMI was significantly and strongly predicted by perceived same gender and class year norms while actual norms were insignificant in predicting BMI.

The strong empirical association between perceived peer norms and personal behaviour, as found in the many cross-sectional studies described above, does not confirm causality of course. It is quite reasonable to assume, based on theory, that there may be causal effects in each direction. Just as perceived norms may be partial

determinants of individual behaviour, it is plausible that the individual's personal behaviour may have some determining effect on his or her perceptions of what is the typical behaviour of others. Thus, more complex studies are needed to test the directionality and degree of effect in each direction. One type of analysis investigating this question involves longitudinal data using a cross lagged method of multivariate statistical analysis. In these studies data collected on both the perceived norm and personal behaviour at time 1 are used to simultaneously predict the perceived norm and also personal behaviour at time 2. Using this method the effect of the prior perceived norm, independent of the effect of the prior personal behaviour, can be isolated when predicting later personal behaviour and perceptions of the norm. Thus, the simultaneous potential influences of the perceived norm and personal behaviour on subsequent personal behaviour and the perceived norm can be separated.

Only four studies were found using some type of cross lagged analysis to address this question of the causal direction in the relationship of perceived norms and personal behaviour in the research literature. The results provide varied evidence on how strongly perceived norms determine personal behaviour when controlling for effects in the opposite direction. In a study of college student drinking in one university in the USA, Neighbors, Dillard, Lewis, Bergstrom, and Neil (2006) found support for a mutual influence model but also found stronger support for personal conformity to perceived peer norms in contrast with the process of personal behaviour shaping perceptions. In another longitudinal study of university student drinking (Cullum, Armeli, & Tennen, 2010) that collected data over three time points, the structural equation analysis also found results supporting each directional pathway. In this study the effect of perceived norms on personal consumption was consistent across multiple time points, but more limited in the size of the effect at each time in comparison with the effects of personal behaviour on perceptions. Another longitudinal study of college student drinking (Pedersen, LaBrie, & Hummer, 2009) examined pre-abroad factors that predicted drinking behaviour while studying abroad. Both pre-abroad intentions of drinking (personal attitude) and pre-abroad perceptions of study-abroad drinking (perceived norms of future peer environment) were associated with subsequent drinking abroad. However, pre-abroad perceptions predicted actual study-abroad drinking over and above one's intentions. Furthermore, only study participants with higher pre-abroad perceived norms of abroad drinking significantly increased their drinking while abroad, thus providing additional support for perception's impact on personal behaviour. Juvonen, Martino, Ellickson, and Longshore (2007) used 7th grade perceived norms and personal behaviour to predict personal alcohol and marijuana use among students in the 8th grade in 21 schools in the state of South Dakota in the USA. In this study, students' previously perceived peer norms significantly predicted personal alcohol use but not marijuana use. When students' 7th grade recall of the number of times peers had offered them alcohol in their lifetime and how often they were around peers who drank alcohol (what might be interpreted as related to perceptions of more proximal peer norms), the effect size of the perceived 7th grade norm on personal 8th grade drinking was diminished and statistical significance was lost.

Other tests for the causal impact of perceived norms on personal behaviour that provide substantial supporting evidence are found in the studies using some form of experimental longitudinal design. The intervention or experimental condition is some type of experimenter action to change perceptions of the norm followed by the examination of subsequent changes in personal behaviour. Results of these studies are reviewed in the subsequent section of this chapter when considering how misperceived norms may be changed.

The Dynamic View of Perceived Norms

Although the pervasiveness of misperceived norms and its potential detrimental effects on the well-being of youth and young adults has been established, the review of these findings, as introduced thus far, is not intended to convey a static image of norms or perceptions of norms and their associations with personal behaviour. Misperceptions of norms do emerge for individuals and may change, which, in turn, may bring changes in individual action. Thus, it is important to consider the dynamics that produce the misperceptions, the potential for altering misperceptions, and the effects that may result from such changes.

Causes of Misperceived Norms

A multiplicity of causes has been cited for the explanation of misperceived norms. Psychologists often rely on the concepts of “pluralistic ignorance” and “false consensus” to explain the discrepancy between actual and perceived norms for youth risk behaviour (cf. Berkowitz, 2005; Prentice & Miller, 1993; Schroeder & Prentice, 1998). Simply put, pluralistic ignorance posits a psychological tendency among many people to think of themselves as somewhat different from most others, and thus the potential for an overall discrepancy between the aggregate of personal attitudes and behaviours and what is perceived as average or most typical of others. Furthermore, if the majority believe themselves to be in the minority, they will then tend to keep their opinions private and restrict their actual behaviour preferences when acting publicly—a process that makes actual norms less visible, further exacerbating misperceptions and further restricting the revelation of real personal preferences for behaviour in a pernicious manor. They may not only participate in the misperceived norm occasionally to publicly disguise their opposition, but also participate in the encouragement and enforcement of others’ participation as a means of further (and more convincingly) communicating to peers their apparent, albeit insincere, allegiance (Willer, Kuwabara, & Macy, 2009). False consensus posits a process whereby individuals exhibiting minority attitudes and behaviours tend to think that most others are like themselves. This process is predicted from a

psychological viewpoint as a “self-serving bias”, a way to reinforce their own views and actions, and also from a social psychological viewpoint as the result of “selective exposure” to a greater prevalence of deviant behaviour in one’s immediate environment or personal relationships.

Relying solely on the combination of pluralistic ignorance and false consensus to explain the phenomenon of misperceived norms for youth risk behaviour is problematic, however, for several reasons. First, there is no prior predictive explanation of who is likely to be a victim of pluralistic ignorance, or a victim of false consensus if motivated by a “self-serving bias.” Rather, these are theorized conditions for misperceiving the norm often attached to individuals as a label once we know whether their own personal attitudes or behaviours reflect the actual norm or reflect a non-normative position. Second, these theoretical constructs do not account for patterns of misperception such as that reported about frequency and quantity of alcohol use among university students where individuals with personal consumption levels substantially below the normative behaviour still tend to overestimate (rather than underestimate) the norm (even though they do not typically overestimate it as much as those who are above the norm in personal consumption). Third, the concepts of pluralistic ignorance and false consensus do not directly address from a sociological vantage point how institutional and cultural products also contribute to these misperceived norms.

I have argued in detail elsewhere for another set of concepts providing a theoretical model (Perkins, 1997, 2002, 2003a) of misperceived norms in the research on health and well-being among youth and young adults. The model incorporates both psychological and sociological phenomena that in combination theoretically explain the emergence and persistence of misperceived norms. The model, very briefly described here, posits three levels of processes that create and mutually reinforce misperceptions. The first level based on cognition processes looks to the psychological tendency to mistakenly assume that extreme behaviour, when occasionally or even rarely observed in others we do not know well, reflects their dispositions and common ways of behaving. These psychological “attribution errors” are made when only incomplete or superficial information about peers is available. They become more substantial as the distance between the perceiver and those being observed is greater because the perceiver does not have the opportunity to observe others who are not intimate contacts in a variety of contexts, where such observations might otherwise moderate their impressions of what is typical of others. This phenomenon is secondly coupled with the tendency of people to remember vivid and extreme behaviour (such as the risk and problem behaviours discussed in this chapter) more often than normative behaviour and then to talk about it disproportionately in social conversation. (Consider the hundreds of words and expressions used in various youth and adult cultures to describe inebriation in comparison to the very few words available to describe the condition of sobriety even though sobriety is normative in virtually all youth and adult populations including university students in the vast majority of social circumstances). Thus, the social psychology of conversation patterns brings disproportionate attention to these non-normative attitudes and behaviours amplifying the sense that they are

pervasive, while talk about what is actually most common gets little attention. Finally, a third level of distortion is introduced through cultural communications. Many forms of television, film, and website entertainment accentuate risk behaviours as attractive and commonplace. Likewise, news media concentrates on drawing public attention to (and sensationalizing) the high-risk and problem behaviours within a population (as the media slogan goes, "if it bleeds, it leads"). Thus, exposure to disproportionate media content of youth risk behaviours can create the impression that these behaviours are much more commonplace than is the reality as popular culture focuses almost entirely on images and stories of the unusual and extreme behaviours, both locally and in the larger society. Taken together, distortion in perceptions of the norm produced by psychological tendencies and social conversation patterns are reinforced by the socio-cultural level of human experience and vice versa.

The theoretical causes of misperceived norms discussed above suggest that the creation and reinforcement of misperceptions is a perpetual process in most instances. If, among youth for example, (1) there is the tendency to erroneously attribute risk behaviours, when occasionally observed, to typical dispositions or inclinations of peers, (2) social conversation amplifies one's sense of the prevalence of the behaviour, and (3) the cultural media simultaneously hype its prevalence, then the predicted result would be increasing misperception of the norm in the direction of the problem behaviour. Simultaneously, if misperceptions of the norm do contribute to the encouragement and growth of attitudes and behaviours that are misperceived to be normative, then one should logically predict a steady increase in the problem behaviour until it becomes the actual norm or perhaps until it becomes virtually universal. And yet as one might rightly point out, problem rates among youth overall do not inevitably increase over time, possibly leading one to the impression that the suggested process of an at least partially self-fulfilling prophecy is not taking place. In fact, however, the dynamic growth (or perverse increase) in the problem behaviour in the wake of widespread and growing misperceptions is indeed taking place during the adolescent years, but youth do not stay in the same constant and isolated group through time. That is, we rarely watch one age group of peers monitoring both their perceptions of the norm and their personal behaviours over a lengthy period of time. But we do see steady increases in perceived norms and personal behaviours regarding the prevalence of alcohol and drug use across school years as adolescents move into older grades. So at any one moment, if we examine an entire school or a particular year level (grade), the norms and exaggerated perceptions of norms may appear to be fairly constant when compared to a previous assessment of the school or same year level (grade). But beneath the surface (or from a longitudinal point of view) the picture is different. Overtime, more individuals in a year level (grade) cohort may initiate a behaviour in response to their perceptions of what is normative as they prepare to move (anticipatory socialization), and then do move, into the next levels. Thus, more of them will begin to adopt the perceived normative behaviour thinking they need to do so to "fit in" at the next level. The process does not continue indefinitely to a point where everyone is really doing it because students move beyond the peer intensive school environments to

new normative groups in the proverbial “real” world of occupations, military service or newly emerging families with more diverse reference groups and where their perceptions of what is normative (be they correct or incorrect) are altered.

Interventions

Just as there is a dynamic nature to the creation, growth and impact of misperceived norms as they evolve through time in the adolescent’s and the young adult’s life experience, there also exists the possibility of change in perception and behaviour due to interventions designed to alter perceptions of the norm. The “social norms approach” (Perkins, 2003b) to health promotion has been introduced in a variety of contexts as a positive implementation of social norms theory to reduce problem behaviour based on the principle that much of the problem behaviour is encouraged and perpetuated by pervasive misperception that the problem behaviour is the norm. Thus, a successful intervention to reduce or correct misperceptions of the norms should have the reverse effect (reducing problems) as some people begin to shift their attitudes and behaviours in accordance with their new (more accurate) perceptions of the norm. More individuals may be willing to behave in accordance with their underlying attitudes if they come to believe that the majority of peers support them and they may be more willing to voice their opinions or intervene as well, providing a further counter to the remaining misperceptions of the norms and problem behaviour among peers. Those who previously may have flagrantly exhibited extreme problem behaviour believing their actions were widely valued may be less likely to do so or do so publicly, thereby assisting in the further reduction of the problematic misperceived norm.

Interventions employing this strategy use a variety of techniques in attempts to correct misperceptions, typically based on previously gathered credible information about actual norms or based on techniques that expose the actual norms of a group in the course of the intervention. These techniques commonly include the use of print and electronic media to advertise actual norms, the implementation of group workshops, orientation programs, or online interactive programs providing presentations of findings on actual norms or interactive exercises to reveal the actual dominant attitudes and behaviours of the peer group.

Experimental evidence supporting this theory and practical approach to achieve change has grown substantially in the last two decades as applied to a variety of issues involving the promotion of health and well-being in schools and communities. The most extensive supporting evidence comes from interventions designed to reduce misperceptions of high-risk drinking as the norm among university students in the USA. Several studies have used a pre/post quasi-experimental design to assess perceived norms, the frequency and quantity of personal alcohol consumption, or the experience of alcohol-related negative consequences at one or more time points prior to and again after an intervention. The first of these studies was conducted at a mid-sized university in the Midwestern region (Haines & Spear, 1996).

Initially, data collected at two time points (from one academic year to the next) while not conducting a social norms intervention showed no significant change in alcohol measures (perceptions of heavy drinking as the norm and personal heavy drinking rates). In the next year an intervention to reduce misperceptions of the norm was introduced with a widespread print media campaign about accurate norms and student staged theatrics to further publicize the correct data about local norms. The prevalence of misperception that heavy drinking was the norm immediately dropped significantly from 69 to 57 % as did the prevalence of personal heavy drinking from 45 to 38 % (a statistically significant rate of change decrease of 16 %). The study reported continued declines over the following 2 years of intervention resulting in a 24 % decline in the heavy drinking measure (rate of change) after 3 years of intervention while the national prevalence of heavy drinking among college students remained unchanged. The intervention at this school to reduce misperceptions and the assessments were subsequently continued for a total of 9 years following the baseline assessment (Haines & Barker, 2003) ending with an overall drop in the misperceived heavy drinking norm from 69 to 33 % cutting misperceptions by more than half (–52 % rate of change) and a reduction in personal heavy drinking from 45 to 25 % (–44 % rate of change).

Other colleges and universities conducted experimental interventions and assessments using similarly intense print media campaigns and supplementing them with electronic media and other communication strategies to communicate actual norms over the next several years with similar results. For example, assessments after 3 and 5 years of intervention at a small private liberal arts college in the Northeast saw continuing declines resulting in a 32 % overall reduction (rate of change) in heavy drinking (Perkins & Craig, 2002, 2003b). A large public university in the Southwest experienced a 29 % decrease (rate of change) in heavy drinking in a 3-year pre/post assessment (Johannessen & Glider, 2003). A mid-sized university in the Northwest observed a statistically significant 21 % reduction (rate of change) in heavy drinking in the year following its social norms intervention and after an assessment showing no change in heavy drinking rates over the previous pre-intervention 5-year time period (Fabiano, 2003). A mid-sized university in the mid-Atlantic eastern region experienced yearly declines in the prevalence of heavy drinking resulting in a 25 % reduction (rate of change) 3 years after the pre-intervention baseline measure (Jeffrey et al., 2003). These schools also reported significant reductions on several measures of perceived norms and other measures of problem drinking and negative consequences in these studies.

More recently a study of the impact of a social norms intervention at a mid-sized Southeastern university has demonstrated that as the project expanded its communication strategy about accurate norms throughout the university's student body over a 6-year period, yearly declines in negative consequences of drinking followed (Turner, Perkins, & Bauerle, 2008). In 2001, 44 % of students experienced multiple negative consequences, but by 2006 the rate had dropped to 25 %. One large study of 18 schools throughout the USA was able to construct an experiment with random assignment of half of the schools as control sites for comparison. After 3 years the social norm intervention sites revealed relatively lower

perceptions of drinking norms and lower rates of personal problem drinking compared to the control schools, a finding that did not exist at the start of the experiment (DeJong et al., 2006).

In addition, several social norms intervention programs have successfully targeted specific sub-populations of students by communicating actual norms of the group (e.g. first-year students, residence hall residents, fraternity and sorority members, and student-athletes) within the university environment through media campaigns (Berkley-Patton, Prosser, McCluskey-Fawcett, & Towns, 2003; Mattern & Neighbors, 2004), peer-based programming efforts (Cimini, Page, & Trujillo, 2002), group feedback using wireless keypads (LaBrie, Hummer, Grant, & Lac, 2010), computer-delivered normative feedback (Lewis & Neighbors, 2007; Neighbors, Larimer, & Lewis, 2004), workshop or counseling formats to reduce misperceptions and problem drinking (Barnett, Far, & Mauss, 1996; Borsari & Carey, 2000; Steffian, 1999) or a combination of these strategies (Perkins & Craig, 2006). Successful intervention experiments are also reported with students identified as heavy drinkers and students mandated for programs due to alcohol policy violations (Agostinelli, Brown, & Miller, 1995; Collins, Carey, & Sliwinsky, 2002; Cunningham, Wild, Bondy, & Lin, 2001; Dumas, McKinley, & Book, 2009; Neighbors et al., 2004) as well as with students living in small residential groupings (Schroeder & Prentice, 1998).

Certainly many of the intervention studies described above have some methodological limitations such as the lack of a randomized control group for comparison over time as used in classical experimental designs. Also, many studies are based on research conducted in single institutional contexts, thereby limiting the strength and generalizability of findings. The similar pattern of positive results found, however, in so many studies conducted at diverse sites over time gives much credence to the argument that interventions to change perceived norms can, in turn, change behaviour. Still it must be noted that, although accumulated intervention studies present a very large body of supporting evidence for the malleability and influence of perceived norms, not all social norms interventions to reduce high-risk drinking among college students have been successful in demonstrating support for the approach. Most of the unsuccessful interventions, however, used weak or problematic communications strategies or short time frames that did not produce a reduction in the level of misperceptions of the norm (Granfield, 2002; Thombs, Dotterer, Olds, Sharp, & Raub, 2004; Werch et al., 2000), a result that social norms theory posits should yield no change in the personal drinking levels (Perkins, 1997). Thus, reports of failed experiments do not typically present results countering the fundamental theoretical assumptions of the social norms model (Thombs et al., 2004) (i.e. that a correction or change in normative perception affects personal behaviour). Rather, they most often reflect problems of (1) very low intervention dosage (i.e. limited exposure to social norm messages due to insufficient intervention intensity or duration), (2) lack of credible data for messages, (3) an overly narrow focus on a target group without reducing misperceptions of the broad student population (Perkins, 2003c), or (4) confusing presentations regarding actual norms (Russell, Clapp, & DeJong, 2005). One report described as a “failed” study (Clapp, Lange, Russell, Shillington, & Voas, 2003)

actually found results of significantly lowered misperception in a student residence hall when results were compared to another residence hall with no intervention that was used as the control group, but the study did not find a significant reduction in actual drinking levels. However, the intervention was done only inside the residence hall and with only one simple print message, and then impact was assessed after only 6 weeks. Thus, obtaining substantial behavioural change might not be realistic, and yet the critical personal behaviour measures all moved in the expected direction compared to the control group, suggesting that some impact may have taken place but not enough to be significant and avoid a possible Type II error (Perkins, 2006).

One study of 14 institutions randomly assigned to a social norms intervention or control school condition (DeJong et al., 2009) reported no difference at the end of the experiment that was attempting to replicate a previous study of 18 randomly assigned schools where an intervention effect had been found (DeJong et al., 2006). One possible explanation reported for the failure to replicate the impact of an intervention communicating accurate norms in the second wave study as compared to the first wave of schools studied was that the second wave of schools were disproportionately institutions where a high density of alcohol outlets existed close to the campus and alcohol consumption was relatively high compared to the first wave of schools studied. Thus, the second study concluded that social norms interventions may not be as effective in environments with a high density of alcohol outlets and the pervasive promotion of alcohol consumption. This result may simply mean, however, that the intensity of exposure to correct normative information may need to be increased in these circumstances beyond what was a minimal intervention dosage. Intervention schools in this study were given just \$2,000 for the creation and purchase of media advertisements while some of the institutions had populations of 20,000–40,000 students so the message dosage per student from media was inevitably very limited. Successful school interventions in other studies using mass media marketing would not uncommonly spend at least ten times that amount to gain enough exposure in schools of that size and in much smaller schools.

Finally, we can note other evidence that interventions to change perceptions of norms can bring about corresponding changes in problem drinking and other problem behaviours in school and community settings beyond the university context. An experiment conducted throughout the State of Montana in the USA (Perkins, Linkenbach, et al., 2010) assigned a portion of the counties as intervention counties and others as control counties. The study subsequently conducted an intensive mass media campaign communicating the accurate norm in the experimental counties that most (four out of five) young adult (21–34 years old) Montanans do not drink and drive (based on data from statewide surveys) when the misperception was pervasive that most would drink and drive in a typical month. After 18 months misperceptions about the norm were reduced, the willingness to use designated non-drinking drivers increased, and drinking and driving decreased in the intervention counties compared to the control counties. In another experiment middle school students in 12 schools in southern California were assigned to one of four experimental conditions (resistance skill training, normative education to reduce

misperceived peer norms about the prevalence of drug use, a combination of both skill training and normative education, and a control condition with neither type of education) during the school year. As a result, alcohol, cigarette, and marijuana use were reduced due to the effect of normative education with no significant effect of resistance skills training (Hansen, 1993; Hansen & Graham, 1991). A pre/post assessment of tenth grade students exposed to a social norms campaign in two Illinois high schools demonstrated significant reductions in alcohol use and tobacco use over a 2-year time period (Haines et al., 2003). In an 8 month media campaign throughout selected counties in the state of Montana teenagers were targeted with the message that “7 out of 10 are tobacco free” and related normative messages that most teenagers do not use tobacco. Experimental counties at the end of the trial showed an initiation rate for tobacco use of only 10 % among teens not previously using tobacco compared with a 17 % rate in control counties that did not receive the normative messages (Linkenbach & Perkins, 2003). In a social norms intervention at five middle schools in New Jersey addressing misperceptions about the prevalence of peer bullying attitudes and behaviour and willingness to report bullying to teachers, the campaigns were effective in reducing erroneous perceptions and changing attitudes and behaviours in a more positive direction (Perkins et al., 2011). Among the five sites, the schools where greater campaign exposure was reported were also the schools where, over time, greater increases in accurate perceptions of norms and greater decreases in personal perpetration and support for bullying occurred.

Finally, it should be noted that some evidence, albeit much more limited, also exists beyond the field of youth risk behaviour prevention supporting social norms theory’s prediction that interventions communicating actual norms will bring change. For example, experiments in adult populations have demonstrated that conveying information about descriptive and injunctive norms can impact environmental concerns such as littering, recycling, energy consumption, and protection of environmental resources (Cialdini et al., 1990; Nolan, 2011; Schultz, 1999; Schultz, Khazian, & Zaleski, 2008).

Current and Future Issues for the Study of Perceived Norm Dynamics

Although there is much accumulated evidence supporting the claims that misperceptions of norms regarding risk behaviours are pervasive and can be altered, in turn, producing change in individual behaviour, several important theoretical issues remain where empirical investigation is quite limited. Space constraints for this chapter will only permit a brief description of these areas in need of further investigation.

One important question involves the comparison of proximal and distal reference group norms. It is not uncommon for theory and empirical research to point out that proximal norms (e.g. norms of one’s more immediate friendship network) are more

influential than distal norms (e.g. norms of one’s entire school population) (cf. Cho, 2006; Thombs, Ray-Tomasek, Osborn, & Olds, 2005). Presumably, people pay greater attention to and are more directly influenced by the norms of a close group of peers that they care about more strongly and interact with more intensely. Multivariate analyses sometimes show that when friend norms (actual or perceived) are entered along with norms of peers in general (actual or perceived) to simultaneously predict personal behaviour, the norms of close friends account for most or almost all of the explained variation in personal behaviour (Maddock & Glanz, 2005). Some studies have shown that young people can also misperceive the norms of their close friends leading to some speculation that addressing those misperceptions may be more effective in producing change. But such a decision is not that straightforward. First, it must be acknowledged that identifying friend norms and then communicating these back to the individual is a much more complex endeavour when large populations are involved and this usually requires the loss of anonymity in survey research which may be problematic regarding sensitive issues. Second, the extent of misperception of close friend norms will not be as large as the gap observed between actual and perceived norms of peers in general in the local population. This is because the psychological process of making attribution errors leads to greater error and exaggeration about people who are in more distal groupings (Perkins, 1997). Therefore, while the influence of close peer norms may be greater, the extent of misperception, and thus the possible extent of change (correction) in the perceived norm will likely be less. Even though the distal peer norm may be less influential, there is likely to be massive misperception allowing more potential change to occur in the perceived norm. So addressing both proximal and distal misperceptions hold some promise for change in individuals’ behaviour (LaBrie, Hummer, Neighbors, & Larimer, 2010; Larimer et al., 2009; Neighbors et al., 2008). Future research also needs to consider how the misperception of each type of norm may contribute to or reinforce the misperception of the other norm. Furthermore, future research needs to examine the potential interactive effects of misperceived norms at both levels, and thus the possible additional effect of addressing both misperceptions simultaneously in interventions.

A second related line of needed inquiry involves questions about the effect of social network density and group identification and how these factors might mediate the effect of misperceived norms. It is theoretically plausible that even among groups representing the same social sphere—for example, all other students in one’s classroom in a secondary school—a more tight knit or interconnected network among students in the class may produce greater conformity to the perceived norm, and thus possibly greater change, if misperceptions are reduced.

A third possibility involves the study of variation in individual attitudes and dispositions concerning the importance of peers. Various psychological and socio-cultural characteristics may lead individuals to be more or less group oriented in terms of relying on the group for personal guidance. Thus, correcting misperceptions by providing feedback about accurate group norms may be more or less influential on the individuals depending on their personal propensity or desire to conform to the group (Neighbors, LaBrie, et al., 2010).

Finally, research has begun to explore gender dynamics in understanding misperceived norms and their influence on the individual. For example, some theoretical speculation and limited research among adolescents and young adults has suggested that same gender norms might be a more powerful influence depending on the topic (Korcuska & Thombs, 2003; Lewis et al., 2007; Lewis & Neighbors, 2004, 2007). Still other work suggests that in cultural circumstances where male attitudes and behaviours are valued more highly in general, that perhaps perceptions of the male norm may be more highly associated with what is perceived as the non-gender specific norm and more influential on personal behaviour for both genders (Lewis & Neighbors, 2006; Pedersen & LaBrie, 2008; Perkins & Craig, 2012).

To conclude, these emerging areas of research provide many directions for future inquiry as to how misperceptions of norms develop, become solidified as the perceived reality, affect subsequent behaviour, and can be changed through interventions to alter perceptions producing subsequent change in behaviours. Conducting such research in diverse cultural contexts and on risk behaviours beyond alcohol and substance abuse also provide a wide terrain for new exploration of the “reign of error” and how to confront it in promoting human well-being.

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