

condition for lowering prejudice. Instead, the contact situation must meet four conditions in order to have an optimal impact on racial attitudes. First of all, equal status between the groups must be present in the situation. For children, this means that children need to interact with others who share an equal status. When children from different ethnic groups also differ by socioeconomic status, this can diminish the chances for positive results from intergroup contact. Second, the contact needs to be supported by authority. This means that teachers and parents need to support intergroup contact for the goals of reducing prejudice. The third condition is that the situation involve an attainment of common goals. Related to this condition, the fourth condition requires that there be diminished competition between groups in the situation. This means that schools and parents should encourage children from different backgrounds to work together and cooperate, rather than to compete against one another.

Contact situations that entail these four conditions have been shown to reduce negative attitudes toward members of the out-group across a variety of societies, situations, and groups. Cross-race friendships fulfill the above conditions and have been shown to help reduce racism. Cross-race friendships increase awareness of the unfairness and hurtfulness of prejudice and discrimination. Research using the social-cognitive domain model suggests that focusing on fairness and equality may change attitudes. Attitudes can furthermore be changed through behavior; for example, cross-gender roles in families and societies help to reduce sexism.

Although racial prejudice and prejudice based on gender have received the vast majority of attention from researchers, prejudice can be held against any defined group of individuals. Religious group membership, age, sexual orientation, obesity, and being handicapped are additional categories that may foster prejudice.

## CONCLUSIONS

Thus, as with many aspects of human development, the development of prejudice is a complicated and multifaceted phenomenon. Myriad factors underlie the formation and change of attitudes about members of out-groups. These factors range from the child's cognitive capacity to categorize individuals as members of a particular group to the child's amount of contact with members from a particular group. As children become adolescents and adults, they increasingly encounter individuals from a wide range of

diverse backgrounds. Understanding children's prejudice and negative biases helps to develop intervention programs designed to promote positive intergroup attitudes and to reduce prejudice. This is important for an increasingly global and multicultural world.

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## PROBLEM BEHAVIOR THEORY

An important theoretical framework in the field of applied developmental science is that of *problem behavior theory*. The following paragraphs present a brief overview of the structure and content of the framework. This is followed by a description of some of the research by its developers and others that supports the utility and generality of the framework.

### DESCRIPTION OF PROBLEM BEHAVIOR THEORY (PBT)

The earliest formulation of what later came to be known as problem behavior theory (PBT) was

developed in the early 1960s to guide a large-scale multidisciplinary project, involving psychologists, sociologists, and anthropologists, that focused on the explanation of individual differences in alcohol use and abuse as well as differences among Anglos, Hispanics, and American Indians in a single, small community in southwestern Colorado (Jessor, Graves, Hanson, & Jessor, 1968). The theory was field theoretical in nature, encompassing systems of explanatory variables reflecting both the person and the larger social situation. Variables composing the theoretical framework reflected four systems or domains: the sociocultural system, the socialization system, and the personality system, each of which comprised parallel structures of variables, and the behavior system. Variation in involvement in alcohol use at both the individual and ethnic group levels was seen to be a function of all three explanatory domains, separately and together.

Since its initial appearance in the Tri-Ethnic Research Project, PBT has developed through a series of studies by Richard Jessor and his colleagues, initially Lee (Shirley) Jessor, and later John Donovan and Frances Costa. The framework above was heavily recast in the late 1960s for a longitudinal study of the socialization of problem behavior among adolescents (described in the Jessor & Jessor, 1977, book and in numerous papers), and it is this version of the theory that is most widely known and cited.

## EXPLANATORY SYSTEMS OF PBT

PBT rests on the social-psychological relationships that obtain within and between each of three systems of psychosocial influence: the personality system, the perceived-environment system, and the behavior system. Within each of the three systems, the explanatory variables reflect either instigations to problem behavior or controls against it, and together, they generate a resultant, a dynamic state called *proneness*, which specifies the likelihood of occurrence of normative transgression or problem behavior. *Problem behavior* is defined as behavior that departs from the norms, both social and legal, of the larger society; it is behavior that is socially disapproved by the institutions of authority and that tends to elicit some form of social control response, whether mild reproof, social rejection, or even incarceration.

The conceptual structure of PBT is presented schematically in Figure 1. As may be seen, the framework

is both complex and comprehensive, with more than 30 variables in the three major systems and nearly 50 variables overall. Each of the three major systems of PBT, the personality system, the perceived-environment system, and the behavior system, is organized around structures of variables representing instigations toward and controls against engaging in problem behavior. As is also apparent from the figure, the framework is concerned with a variety of problem behaviors and conventional behaviors. The major theoretical relations are represented in the figure by the solid arrows, and the key interest in the joint role of the personality and the environment systems is conveyed by the heavy, unidirectional arrow.

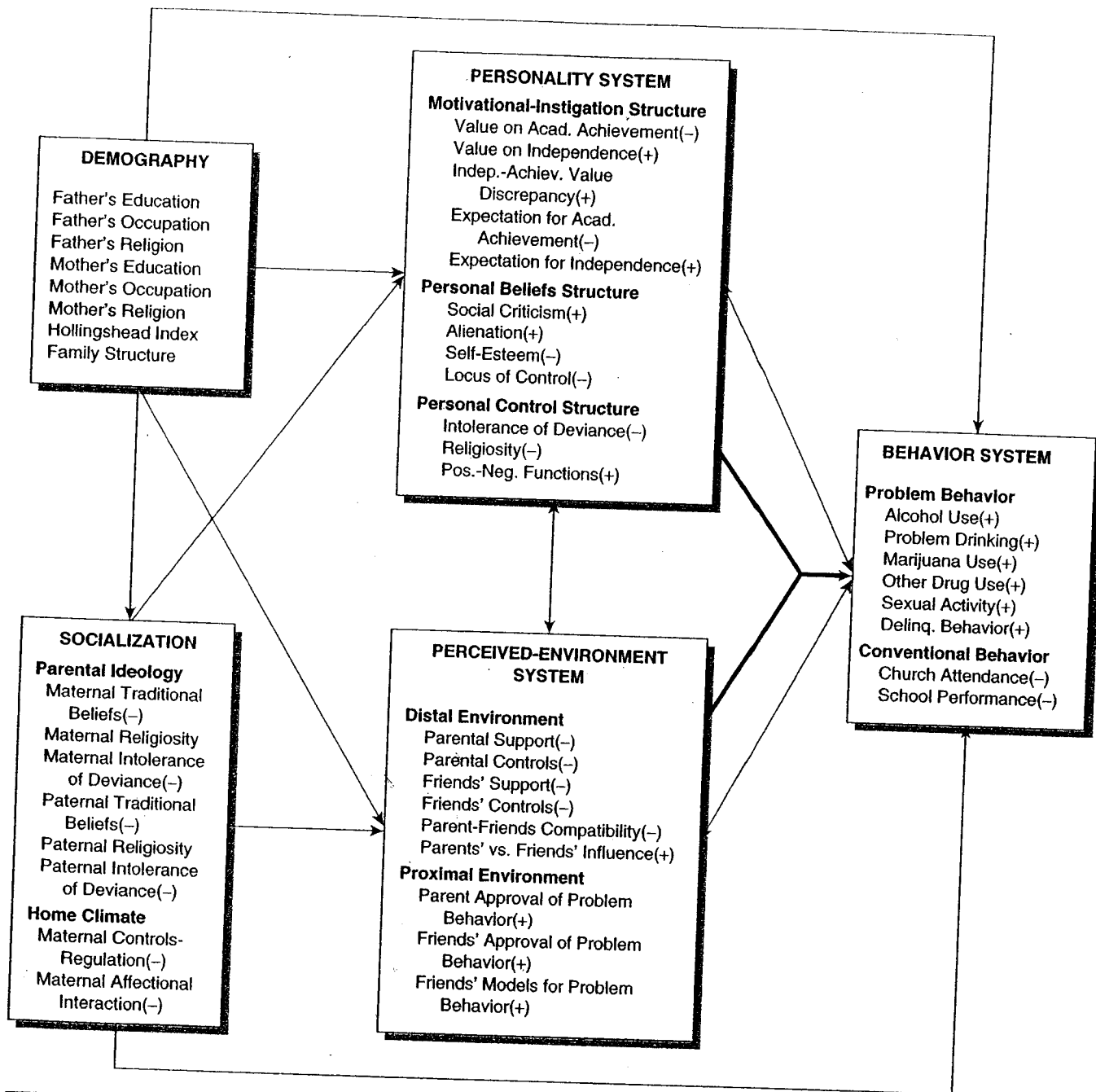
## THE PERSONALITY SYSTEM

### The Motivational-Instigation Structure

In the personality system, there is a motivational-instigation structure and two control structures: the personal beliefs structure and the personal control structure (see Figure 1). The motivational-instigation structure includes value and expectation instigations for behavior oriented toward three goals, academic achievement, independence, and peer affection, which have differing implications for problem behavior. High value on academic achievement "implies a higher likelihood of action in that direction than does low value, other things being equal" (Jessor & Jessor, 1977, pp. 19-20) and implies a positive commitment to the conventional institution of the schools. High value on independence, on the other hand, implies a higher likelihood of behavior oriented toward "the less conventional goal of autonomy" from parents, which is often shown by engaging in precisely those behaviors they consider inappropriate. A higher value on independence than on academic achievement instigates behavior toward independence rather than toward the more conventional goal of achievement. In the area of expectations for attaining these goals, low expectation for academic achievement implies that behavior will be oriented toward attaining goals less conventional than academic recognition.

### The Personal Beliefs Structure

The personal beliefs structure is concerned "with the cognitive controls that are exerted against the occurrence of problem behavior" (Jessor & Jessor, 1977,



**Figure 1** The Conceptual Structure of Problem Behavior Theory. (Plus and minus signs in parentheses reflect the direction of relation of these variables to problem behavior involvement.)

p. 20). Variables in this structure, such as alienation, social criticism, and self-esteem, involve beliefs about the self, society, and self in relation to society. *Alienation* refers to a sense of uncertainty about self, doubts about the meaning of one's daily roles and activities, and a belief that one is socially isolated.

Such beliefs reduce the regulatory influence that usually comes from feeling one's life has purpose and from feeling connected to others. *Social criticism* refers to the degree of acceptance or rejection of the values, norms, and practices of the larger society. Belief in the legitimacy and appropriateness of social

norms and practices can serve as a powerful control against violating these norms. *Self-esteem*, on the other hand, has less univocal implications for involvement in problem behavior.

### The Personal Control Structure

The personal control structure encompasses variables that serve as conceptually more direct or obvious controls against nonnormative behavior and that actually refer to the problem behaviors involved. *Intolerance of deviance*, for example, reflects the adolescent's general attitude toward transgressions that conventional adult society disapproves of, such as lying, stealing, vandalism, and aggression against peers. *Religiosity* refers to the personal importance of religious beliefs, ideology, and activities; its control against problem behavior follows from the moral beliefs and the conventional perspectives inherent in religious involvement. Last, to the extent that positive functions or reasons for engaging in a problem behavior outweigh the reasons not to engage in that behavior, controls against engaging in that behavior are attenuated.

### THE PERCEIVED-ENVIRONMENT SYSTEM

In the perceived-environment system, there are two structures of variables composed of environmental instigations toward involvement in problem behavior as well as controls against involvement in problem behavior. They are distinguished on the basis of the directness of their relations to problem behavior. The *distal environment structure* includes less direct social controls—perceived strictness and the likelihood of sanctions against disapproved behavior—from both parents and peers, as well as a social environment that is more or less parent and family oriented or friend and peer oriented. Greater perceived support and control, especially from parents, should reduce the likelihood of problem behavior. To the extent that adolescents are more susceptible to peer than parental influence, they are also more involved in a peer context that is likely to expose them to greater approval and models for problem behavior.

The *proximal environmental structure* includes variables summarizing the perceived models and social support for problem behavior available in the adolescent's social environment. Greater exposure to peer problem behavior and to parent and peer approval

for problem behavior are expected to increase the likelihood of involvement in such behavior.

### THE BEHAVIOR SYSTEM

In the behavior system, finally, there are also two structures, the problem behavior structure and the conventional behavior structure. The *problem behavior structure* includes alcohol use, problem drinking, cigarette smoking, marijuana use, other illicit drug use, general deviant behavior (delinquent behaviors and other norm-violative acts), and precocious sexual intercourse. Involvement in any one problem behavior increases the likelihood of involvement in other problem behaviors due to their linkages in the social ecology of youth. Research confirms that multiple forms of problem behavior are correlated and reflect a single underlying factor (Donovan & Jessor, 1985; Jessor & Jessor, 1977).

The *conventional behavior structure* includes behaviors that are socially approved, normatively expected, and codified and institutionalized as appropriate for adolescents. Two variables are included: involvement in formalized religious activities, as assessed by church attendance frequency, and involvement with academic course work and achievement, as measured by grade point average. Both church and school can be seen as institutions of conventional socialization, fostering a conventional orientation and enlisting youth into the traditional and established networks of the larger society.

In summary, within each explanatory system, it is the balance of instigations toward involvement in problem behavior and controls against involvement in problem behavior that determines problem behavior proneness; and it is the balance of instigations and controls across the three systems that determines the adolescent's overall level of psychosocial proneness for involvement in problem behavior.

### PBT AND THE EXPLANATION OF PROBLEM BEHAVIOR

The utility of PBT in accounting for variation in problem behavior has been examined in a number of studies. The book by Richard Jessor and Shirley Jessor (1977) summarized the results of two parallel longitudinal studies of junior high school students and college students, each assessed at four annual waves (1969–1972 and 1970–1973, respectively). Multiple

correlation analyses showed that PBT accounted for significant and substantial percentages of the variance in marijuana use, problem drinking, general deviant behavior, and sexual experience for both high school and college males and females.

Later studies of PBT include four independent studies of adolescents, two of which were national surveys, as well as two studies of college students and young adults. The two multistage stratified national surveys were directed by J. Valley Rachal and carried out by Research Triangle Institute in 1974 and 1978 (see Donovan, 1996; Donovan, Jessor, & Costa, 1999). In 1979 and 1981, the junior high and college student samples from the earlier study were followed up twice more as young adults in their middle or late 20s (Jessor, Donovan, & Costa, 1991). A cross-sectional survey of 1,300 students in northeastern Colorado was performed in 1985 (Donovan, Jessor, & Costa, 1991). Between 1989 and 1992, three annual mailed questionnaires were collected from a statewide sample of Colorado licensed drivers aged 18 to 25 (Donovan, 1993). Last, a four-wave longitudinal study of a largely minority urban sample was undertaken between 1989 and 1992 (Costa, Jessor, Donovan, & Fortenberry, 1995; Costa, Jessor, Fortenberry, & Donovan, 1996).

In these investigations, PBT accounted for substantial percentages of the variance in multiple forms of problem behavior. Analyses of six data sets that included 10th- to 12th-grade students (two from the last project mentioned above) have shown that the PBT personality, perceived-environment, and behavior predictors account for between 47% and 62% of the variance in frequency of marijuana use (multiple  $r$ s from .68 to .79; Donovan, 1996) and between 40% and 51% of the variance in problem drinking (multiple  $r$ s from .63 to .71; Donovan et al., 1999). Both bivariate and multiple correlations were similar across a 20-year period (1972–1992) despite variation in the levels of these problem behaviors over the same period.

Consistent percentages of the variance in general deviant behavior have also been accounted for. In the community sample data from 1972 (Jessor & Jessor, 1977), multiple correlations of .74 and .70 were obtained for the males and females, respectively. In the 1974 and 1978 national survey data, respectively, multiple  $r$ s predicting general deviant behavior were .65 and .68 for male adolescents and .68 and .71 for the female adolescents.

## PBT AND TRANSITIONS INTO PROBLEM BEHAVIOR

PBT has been successful not only in accounting for variation in involvement in different problem behaviors but also in accounting for transitions in involvement in these behaviors, for example, from abstainer to drinker, from drinker to problem drinker, from nonuser to marijuana user, and from virgin to nonvirgin (Jessor & Jessor, 1977). Proneness for problem behavior predicts which adolescents change behavioral status from one year to the next, as well as the prospective timing of their transitions (earlier versus later) into these problem behavior areas (Costa et al., 1995; Costa, Jessor, & Turbin 1999; Donovan, 1996; Jessor & Jessor, 1977). The relevance of PBT to these developmental transitions follows from the fact that many of these behaviors are subject to age-graded norms, and thus greater problem behavior proneness predicts earlier movement into behavior statuses considered appropriate for older adolescents or young adults.

## EXTENSIONS OF PBT INTO OTHER BEHAVIOR DOMAINS

In addition to the traditional areas of problem behavior, such as drinking, drug use, sexual activity, and delinquency, PBT has been applied to the explanation of variation in several other behavioral areas, including health-related behavior (Donovan et al., 1991; Jessor, 1984), risky driving behavior (Jessor, 1987), and drinking and driving behavior (Donovan, 1993). Both risky driving and drinking and driving violate social and legal norms and thus qualify as problem behaviors. The rationale for the extension of PBT into the domain of health-related behavior is that not only are health-enhancing and health-compromising behaviors subject to normative prescription and proscription, just as conventional and problem behaviors are, but many problem behaviors may also be considered to be health-compromising behaviors. Problem behavior proneness has been shown to account for substantial percentages of the variance in all of these behaviors.

## REPLICATIONS BY OTHER INVESTIGATORS

PBT has been examined in studies by a number of other researchers as well. In a study of 600 Canadian

adolescents by Vulcano, Barnes, and Langstaff (1990), nine personality and perceived-environment measures from PBT accounted for 58% of the variance in marijuana involvement. Using a more abbreviated set of PBT measures, Hays, Stacy, and DiMatteo (1987) accounted for 38% of the variance in alcohol intake and 31% of the variance in problem drinking in a sample of Catholic high school students. In a study of 7th- to 8th-grade experimental smokers, Gerber and Newman (1989) used seven selected PBT variables to correctly predict 68% of cigarette smoking transitions over 1 year. Schlegel, d'Avernas, Zanna, DiTecco, and Manske (1987) found that selected PBT variables accounted for 40% of the variance in regular drinking in a study of Canadian late adolescents, and Beirness and Simpson (1988) found that PBT predicted 36% of the variance in risky driving in a study of Ottawa high school students. Other studies have also found individual PBT measures, most often intolerance of deviance and perceived friends' approval and models for problem behavior, to be useful predictors of adolescent problem behaviors (see Donovan, 1996, for some of these references). This research by other researchers provides independent validation of the utility of the PBT framework.

## CONCLUSIONS

The social-psychological framework of PBT has been shown over the years to account for substantial percentages of the variation in a number of different problem behaviors and health-related behaviors in both adolescent and young adult samples from several countries. It has, in addition, demonstrated its utility for the explanation of transitions in problem behavior in longitudinal research. The framework of PBT has thus contributed significantly to advances in applied developmental science over the past 30 years.

—John E. Donovan

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