Chapter 4
Problem Behavior Theory and Adolescent Development

Richard Jessor and Shirley L. Jessor

In this chapter (Jessor, R. & Jessor, S.L., 1977, Chap. 12) we conclude a rather long odyssey, a quest for understanding of problem behavior and development in a segment of American youth. The chapter provides an opportunity to take stock—to note the limitations as well as the advantages of the approach we followed, to review what has been learned, and to consider some issues that have important implications for a final perspective on the research as a whole.

The basic aim of the study was to evaluate the adequacy of Problem Behavior Theory and to examine the extent to which such a social-psychological framework could yield a sensible account of the variation in problem behavior—both cross-sectional and longitudinal—that is evident among youth. The approach, in brief, was to derive measures from the theory, to enlist the participation of young people in high school and college, and to follow the lives of those participants over a significant number of years. In addition to allowing for an appraisal of the usefulness of the theory, the approach made it possible to witness, at the same time, the shape and direction of psychosocial growth and development.

That Problem Behavior Theory has received a good measure of empirical support in this application is apparent. For both males and females, in both high school and college, with regard to both cross-sectional and longitudinal data, and for both problem and conventional behavior, the findings tend to be consistent and coherent,

Reprinted with permission from:
Jessor, R., & Jessor, S. L. (1977). Chapter 12: "A final perspective." In R. Jessor & S. L. Jessor, *Problem behavior and psychosocial development: A longitudinal study of youth* (pp. 231–248). New York: Academic Press.

R. Jessor (✉)
Institute of Behavioral Science, University of Colorado at Boulder, Boulder, CO 80309, USA
e-mail: jessor@Colorado.edu

S.L. Jessor
(deceased)

R. Jessor, *The Origins and Development of Problem Behavior Theory*,
Advancing Responsible Adolescent Development,
DOI 10.1007/978-3-319-40886-6_4

often substantial in magnitude, and instructive in their patterning. Some review of this outcome, as well as the areas in which support was meager or lacking, will be useful, but a more reasonable judgment of its significance can be made if the liabilities and assets of the study are catalogued first.

An Appraisal of the Approach

Although most of the limitations of this investigation have been noted earlier, several are important enough to warrant further mention. First, the samples of high school and college youth who participated in the research cannot be considered representative of the populations from which they were drawn. The initial loss from the designated random sampling was large, and the nature of the bias that may have been generated by that loss was impossible to measure. In all likelihood, the result was a somewhat more conventional sample of participants. Subsequent attrition over the 4 years of testing was modest in both studies; while examination of the dropouts did not reveal them to differ in a major way from those who remained, their loss could have been an additional source of bias. Finally, the community itself was a highly selected one—a small university city with a largely middle-class, white population. Clearly, the generality of inference from this study is constrained by these sampling limitations. Fortunately, there was wide variation on nearly all the measures among those who participated and the number of participants was large enough to permit a variety of partitionings—both facts essential to our primary concern with theory testing *within* the samples. Further, the generality of the findings receives support from other studies of other samples, including a study of a national sample (these will be commented on later).

A second limitation derives from the design itself, namely, the absence of a control group for the assessment of testing effects or the degree to which longitudinal change on the various measures can be considered an outcome of the procedure of making repeated measurements. Such a control is important in longitudinal research and should be implemented wherever feasible. Its absence in our study required that a set of arguments be adduced to protect the changes reported from vulnerability to a testing-effects interpretation. One of the main ones points to the consistency between the direction of change over time and the direction of the *initial* differences among the three age cohorts in the High School Study. Unfortunately, the absence of a cohort-sequential design in the College Study precluded that argument from being made for those data.

The nearly exclusive reliance upon self-report measures—with the exception of the Family Interview Study and the acquisition of academic records—could be considered a third major limitation of the research. The validity of self-report is always open to challenge, and the topic has even engaged controversy of an epistemological nature. Our own position is straightforward: For certain kinds of information there is simply no alternative to reliance on self-report. Procedures exist for maximizing veridicality. In the earlier Tri-Ethnic Study, a very large and costly effort was

made to obtain independent measures (e.g., court records, teacher ratings, and peer nominations) to validate self-reports; we found, in the end, that they did not alter the basic self-report findings. A similar conclusion was arrived at by Elliott and Voss (1974) in their longitudinal study of delinquency and dropout among high school youth. That independent measures are a salutary complement to a questionnaire study is beyond argument—not so much, in our view, as a validity check on self-reports but as a source of additional, and perhaps different, kinds of information. Had it been feasible, we would have included intensive interviewing of the participants, and their friends as well, solicited autobiographies, and obtained regular information from their parents. Given the necessity to limit data collection to questionnaires in this study, our effort was directed to ensuring the quality and enhancing the validity of self-reporting.

From the perspective of testing the developmental implications of Problem Behavior Theory, the omission of a key measure constitutes a fourth limitation: our failure to map and to measure directly the age-graded norms that had been assumed in the formulation of the concept of transition proneness. Theoretically, the age grading of norms about transition behaviors is an important facet of the social environment of youth, and measurement of such norms should be high on any agenda for developmental research. In a follow-up study of a national sample of youth that is currently under way, we have included measures of the age grading of norms, and the data from those items will be of considerable interest. Nevertheless, their omission from the present investigation has prevented a key theoretical linkage from being empirically established.

In the area of data analysis, two limitations deserve acknowledgement. The first is our failure to carry the analysis of longitudinal change on the theoretical measures beyond the univariate level. The ultimate need is for a multivariate approach to individual *patterns* of change, for example, through profile analysis or the establishment of change types (see Block, 1971). Although an initial effort was made to explore a system for typing multivariate change patterns, the work was not carried forward and remains a task for the future. The other limitation stems from our reliance upon multiple regression analysis for assessing the multivariate account yielded by the variables in Problem Behavior Theory. Because the model that underlies multiple regression is linear and additive, it does not reflect the interactive or nonadditive relations that may exist. In that regard, it may not constitute the best procedure for testing the field theoretical perspective that informs Problem Behavior Theory.

Mention of other limitations—for example, lack of study of the school context, the 12-month interval between testings that made it difficult to deal more precisely with the time of onset of problem behaviors, and the fact that several of our variables simply didn't "work"—would not exhaust the list. Our aim in describing them has been to indicate our awareness that in some degree they constrain the inferences that can be drawn from the research.

It is important to emphasize, however, that none of the limitations is considered serious enough to undermine the study or to jeopardize its major aims. Such a statement can be made because the shortcomings of the approach were balanced by its advantages. Foremost among the assets of the approach is its reliance upon and

involvement with theory. As a theory-oriented study, this research differs from much social-psychological research on youth. Theory helps to minimize inferential ambiguity by permitting the logical derivation of measures and by organizing the observations in a logically consistent fashion. Beyond that, theory provides a framework for explanation. In addition to these logical advantages, the substantive nature of Problem Behavior Theory had an important influence on the research approach. It fostered a comprehensiveness and a differentiation of measurement. The large number of attributes assessed and their organization into structures and systems yielded a multivariate measurement map with considerably greater explanatory impact than would otherwise have been achieved.

At the design level, several assets of the approach merit comment. The parallel studies at the high school level and the college level provided an opportunity for theory testing at two quite different developmental levels and permitted the observation of important differences as well as similarities. The multiple cohorts in the High School Study extended the generality of the findings by revealing consistencies, especially in longitudinal change, among these independent samples of younger adolescents. And the inclusion of males and females enabled a further examination of generality, this time across the sexes at both developmental levels. Finally, the employment of as many as four annual testing occasions ensured that a period of time long enough to be of developmental significance at this stage of the life trajectory had been covered. Together, these facets of the research design contributed unusual possibilities for the replication or cross-validation of specific findings—across age, school level, sex, and four waves of time—and it is such replication that ultimately provides conviction about scientific inference.

The approach to measurement would seem to be another advantage of the study worth noting. Reliance throughout was on theory-derived, structured measures that had been psychometrically developed and, for the most part, construct validated in prior research. Such an approach maximizes the reliability of findings as well as their interpretability, and it is especially crucial in studies where time extension and repeated measurement are involved.

Another advantage of the research approach was the inclusion of multiple criterion measures of problem and conventional behaviors. The bulk of contemporary research in this area tends to be behavior specific, focusing on drinking, or drug use, or sex, or delinquency. This pattern reflects not only the vagaries of societal concern but the topical interests and career commitments of researchers, and even the mission orientation of the separate funding agencies. Nevertheless, a behavior-specific focus can be misleading. It fails to reveal that other behaviors may function as alternatives and that the empirical findings may be general rather than specific. Our measurement of a behavior *system* permitted direct examination of generality, allowed for the replication of Problem Behavior Theory across phenotypically diverse behaviors, and enabled a demonstration of discriminant validity in relation to such conventional behavior as church attendance.

The assets are reminders of points that have already been made. Their importance derives from the implications they have for the scope and depth of the empirical assessment of Problem Behavior Theory. All of these implications converge on

the concern with "minimizing inferential ambiguity," a methodological objective elaborated in the earlier Tri-Ethnic Study (see Jessor et al., 1968, Chap. 6). In light of the advantages discussed, and despite the limitations noted, the research approach employed in this study would seem able to sustain a good deal of confidence in the findings that emerged.

A Review of the Major Findings

Since the research results have been presented in detail earlier, our aim in this section is to highlight the more general aspects of the empirical outcome. First, with respect to Problem Behavior Theory, its usefulness has been significantly reinforced. The magnitude of the account it provided for variation in problem behavior was in many cases substantial—about 50% of the variance in the multiple problem behavior index, for example—and the generality of the account was evident in relation to a number of specific behaviors, including involvement with marijuana and general deviance (among others). Discriminant validity for the theory was established by the demonstration that its variables related to conventional behavior in a direction opposite to their relation to problem behavior. And finally, the effectiveness of the theory in accounting for development and change in behavior served to buttress its cross-sectional utility. Taken together as an organized set of concepts, Problem Behavior Theory has emerged as a relevant framework for social-psychological research. In addition to its overall contribution, however, its component systems and structures have furthered an understanding of the factors in the person and in the environment that mediate variation in action.

In relation to those component systems and their structures, the results were of interest. To begin with the behavior system, several key findings warrant emphasis. First, the prevalence of what we have called problem behaviors was substantial at the college level and, while much lower, sizable at the high school level. In the High School Study, for example, more than a third of the youth had had some experience with marijuana, and a third had experienced sexual intercourse by the Year IV testing. Second, the findings provided strong support for the general concept of problem behavior by revealing an interrelatedness—a syndrome character—among the diverse behaviors subsumed by the concept, and their covariation was placed in sharper relief by their inverse relation to conventional behavior. Not all the behaviors co-varied, activism being one exception, and the syndrome character was much stronger at the high school than at the college level, but relatedness among problem behaviors was quite clear in general. A third point about the behavior system is that problem and conventional behavior are not mutually exclusive and may co-occur in the same individual; this finding reinforces our concern to reserve those adjectives, "problem" and "conventional," for behavior and not for persons.

With regard to the personality system, the most important empirical outcome was the demonstration of its significant role in the occurrence of problem behavior in youth. Regression analyses of personality system measures in the High School System

yielded multiple correlations beyond .50 for the multiple problem behavior index and for measures of marijuana use and general deviance, for example. (The theoretical role of personality is one of the issues to return to shortly.) The finding about the personality system that seems to be next in importance is the differential effectiveness of its component structures. As a general statement, personal controls appear to be most influential in relation to the set of problem behaviors, motivational-instigations are next, and personal beliefs are least (and for the most part weak). This importance of personality factors of a cognitive, moral ideological nature is noteworthy. Third, the variable that most consistently and generally represented the contribution of each structure to the explanatory account was the independence-achievement value discrepancy in the motivational-instigation structure, social criticism in the personal belief structure, and attitudinal tolerance of deviance in the personal control structure (disregarding, for the moment, the highly proximal disjunction measures in the latter). As a cluster, the triad suggests that proneness to problem behavior rests upon a personality pattern that implicates unconventionality.

In relation to the personality system as a whole, the adolescent who is less likely to engage in problem behavior is one who values academic achievement and expects to do well academically, who is not concerned much with independence, who treats society as unproblematic rather than as deserving of criticism and reshaping, who maintains a religious involvement and is more uncompromising about transgression, and who finds little that is positive in problem behavior relative to the negative consequences of engaging in it. The adolescent who is more likely to engage in problem behavior shows an opposite personality pattern—a concern with personal autonomy, a relative lack of interest in the goals of conventional institutions (such as school and church), a jaundiced view of the larger society, and a more tolerant attitude about transgression.

The most salient finding about the perceived environment system is the powerful contribution it made to the explanation of variation in problem behavior. In the High School Study, it yielded multiple correlations close to .70 with the problem behavior index, for both males and females. In most cases the contribution of the perceived environment system was greater than that of the personality system. Insight into the likely reason for this prepotency derives from the findings about the two structures of the perceived environment; it is apparent that the proximal structure carries most of the explanatory weight, and it is the inclusion of proximal variables in the perceived environment system that enables it to outweigh the more distal variables of the personality system. More will be said about this issue shortly.

Within the distal structure of the perceived environment, the variables that indicate whether a youth is parent oriented or peer oriented are the most significant. In the proximal structure, the variables referring to peer models and support for problem behavior are most important. Together they suggest the character of a problem-prone environment; adolescents who are likely to engage in problem behavior perceive less compatibility between the expectations that their parents and their friends hold for them, they acknowledge greater influence of friends relative to parents, they perceive greater support for problem behavior among their friends, and they have more friends who provide models for engaging in problem behavior.

With respect to the field-theoretical (or interactionist) stance that has been built into the social-psychological framework of Problem Behavior Theory, the findings have strengthened our conviction that a more exhaustive account of behavior requires joint reliance on person and environment variables. Two aspects of the results bear on this conclusion. First, in most of the field pattern runs of the uniform multivariate analysis procedure there was an increment in the multiple correlation over the correlation for the separate personality or perceived environment run. Although the increment was usually small, this is not surprising since the two component systems have a good deal of shared variance. That they nevertheless contribute unique variance to the field pattern run is the second aspect of the results that needs mention. The final step-wise multiple regression equation for the six different problem behaviors and for the two conventional behaviors always included at least one personality measure and one perceived environment measure. This was true for males and females in Year IV of the High School Study. It constitutes important support for the field theory perspective since it reveals the joint role of the personality and perceived environment systems in the explanation of problem behavior.

Since the developmental results are relevant to an issue to be discussed shortly—the causal structure of the findings—only the descriptive trends will be noted here, and again the summary focuses on the High School Study. The trajectories that were plotted from the four annual measurements suggest a variety of growth trends in each system of Problem Behavior Theory and for both sexes. These developmental changes include growth of independence, decline in traditional ideology related to achievement value and to society as a whole, assumption of a more relativistic and more tolerant morality, attenuation of the hold of conventional norms and controls such as those embodied in religion and the family, increase in orientation toward peers and in reliance on them as a reference group, ecological increase in the prevalence of models and supports for transgression, and increase in problem behavior itself. These findings are of major interest for several reasons. They are based on longitudinal data rather than inferred from cross-sectional samples varying in age; they describe aspects of the course of normal development, the aggregate direction of change in our normal samples of high school youth; and, of theoretical relevance, they suggest that the normal course of developmental change in adolescence is in the direction of greater problem proneness. This latter point implies that problem behavior may be viewed, at least in part, as an aspect of growing up. This is a notion we will return to later.

In this review of the major findings the generalizations have been large and the exceptions have been ignored. That imbalance can be righted by reminding ourselves of the more important qualifications that need to be made in regard to the reach of the theory and the effectiveness of the measures. Our reliance on the High School Study in the foregoing summary was not an accident; rather, it was because the results were strongest at that level, and while the College Study data tend to be supportive, they were considerably weaker. More specifically, the motivational-instigation variables of the personality system have little relevance to problem behavior at the college level, and the distal structure of the perceived environment is also unimportant. Personal controls remain effective, however, and the proximal

environment continues to be influential. This difference is illuminating in that the social psychology of problem behavior takes a somewhat different shape at the later developmental level than at the earlier one, a fact that would have remained hidden without the two studies. It may be that the higher prevalence levels of problem behavior at the college level and the more accepting age norms about engaging in such behavior at that level make it less of a normative departure. Under such circumstances, instigation would seem to be less necessary, and the main source of variation would likely derive from controls.

Between the two sexes, Problem Behavior Theory was somewhat more effective for the females. The reasons for this may be similar to those applied to the difference between the two developmental levels. One of the legacies of sex-role differentiation is to view problem behavior in females as more of a normative departure than in males. To the extent to which this is true, it may make for greater relevance of the theory to females. Overall, however, the results for both sexes, especially at the high school level, were convergent.

Although the theory showed generality across behaviors, note should be taken of its limited success in regard to activism in the problem behavior structure and academic achievement or grade-point average in the conventional behavior structure. Activism was not well predicted and tended not to co-vary with the other problem behaviors. While there were measurement problems with activism and while it fluctuated over time in a nonsystematic fashion, we are uncertain of the reasons for its refractory role. Grade-point average was also poorly predicted (except by the very proximal measure of expectations for academic achievement), nor did it co-vary with the other conventional behavior, church attendance. Given the indirectness of its interpretation as a conventional behavior, given the role played by ability in academic achievement, and given grading practices that shift with grade in school, this outcome was not surprising.

One other behavior area should be mentioned, namely, problem drinking. The results presented earlier showed that there was only limited support for the personality system measures in relation to problem drinker status, an exception being the personal control variable of tolerance of deviance. This should not be taken as a general failure of the theory to account for problem drinking, however. The overall multivariate analysis yields multiple correlations close to .60 in the High School Study, and a test of the personality system in an earlier year yielded better results, even in that domain, than those reported for Year IV. Part of the difficulty with the measure of problem drinker status may have been that the criterion definition was too modest.

Finally, in this set of qualifications about the findings, note should be taken of several variables in the conceptual framework that were consistently weak or showed only meager relations to problem behavior. Value on affection and expectation for affection are two motivational-instigation variables in this group. The item content of these measures stressed what might be called peer popularity rather than intimacy and affectional closeness, and social popularity was not a widely endorsed value at the turn of the decade. Perhaps this is part of the reason for its poor showing. Three other variables also should be included: self-esteem, alienation, and internal-external locus of control—all belonging to the personal belief structure.

Psychometric difficulties with the latter two were apparent in their lack of unidimensionality, but the main problem with all three was their failure to show consistent linkages with variation in behavior. A theoretical issue is raised by this failure and its resolution is another task for the future.

One other fact should be recorded. Our findings are consonant with those reported by a variety of other investigators, some working independently and others relying on concepts or measures from our work. Kandel's (1978) review of research on youthful drug use emphasizes such convergence; the findings of Elliott and Voss (1974) on delinquency, of Sadava on drug use (1973), of Braucht (1974) on a variety of problem behaviors, and of Nesselroade and Baltes (1974) on developmental change are other examples of areas of commonality of results.

Most important, however, is a recent national sample survey of 13,000 high school youth (Rachal, Williams, Brehm, Cavanaugh, Moore, & Eckerman, 1975) that employed a number of the measures from our study; the findings turn out to be very consistent with those in our research. For example, an overall multiple correlation between a similar set of predictors and marijuana involvement was .74 and .75 for males and females, respectively (see Chase & Jessor, 1977). In our Year IV data in the High School Study, the comparable correlations were .76 and .77. For problem drinker status, the national sample multiple correlations were .59 and .60 for males and females respectively (see Donovan & Jessor, 1976); in our High School Study, the comparable Year IV correlations were .59 and .45. Further support is apparent in recent analyses of general deviant behavior in the national sample (see Donovan, 1977). These findings are especially important to us because, unlike ours, they are based on a large national sample that contains wide variation on socioeconomic, ethnic, regional, and rural-urban characteristics. It suggests that our findings may not be confined to the highly selected community in which they were gathered and, at least at the level of theoretical relations, that they may have considerable generality.

A Consideration of Some General Issues

A number of issues remain to be considered in light of what has been learned from this study. In this section we raise them briefly and try to draw out some of their implications for research and theory and for youth and society.

The Causal Structure of the Findings

The most elusive and recalcitrant of all objectives in behavioral science, especially in field research, is the establishment of causal relationships. Causal inference is ultimately a matter of logic and theory rather than an automatic product of a particular research design, even one that is longitudinal. While causality lies beyond demonstration, conviction about it can be strengthened by the organization of multiple

converging research strategies. Listing the 10 strategies employed in the present research can serve as a way of summarizing where we have arrived in relation to the causal relevance of Problem Behavior Theory.

The first research strategy was the reliance on theory; the second was the employment of theory-derived and construct-validated measures; the third was the provision in the design for numerous replications and cross-validations of findings. The fourth was the demonstration of theoretical relationships among the variables at a cross-section in time, and the fifth was the exploration of socialization antecedents of the attributes in the framework. These five strategies did not require longitudinal design, whereas the five that follow did.

The sixth strategy was the description of change over time, in both the "predictor" and "criterion" measures, and the establishment of theoretical consonance in the two sets of changes. The seventh was forecasting the onset of behavior over an interval of time; the eighth was the demonstration of interindividual differences in development that were systematically linked to the time of onset of various behaviors; the ninth (reported in earlier papers) was the demonstration, by residualized gain scores, of a greater amount of change on the theoretical variables when a change in behavior occurred than when it did not; and the tenth strategy was the use of cross-lagged panel correlations to indicate directionality of influence in the predictor-criterion associations.

Some of these strategies are discussed elsewhere (Jessor & Jessor, 1978) and, with the exception of the last one, have been commented upon earlier. The contribution of the cross-lagged panel correlation strategy can be illustrated briefly in Fig. 4.1 (taken from some ongoing work with our data by John Finney). Since Kenny (1975) suggests that a cross-lagged difference ideally should replicate across different time lags and different groups of participants, we have presented 3-wave data in Fig. 4.1, and for males and females separately. The directionality suggested by the high school data in Fig. 4.1 is clearly from personality (attitudinal tolerance of deviance) to behavior (marijuana behavior involvement). This inference is drawn from the pattern of lagged correlations, those that belong to the diagonal lines in the figure. In all three cases for each sex, the magnitude of the correlation is greater in the personality-behavior direction than in the behavior-personality direction during the same interval. Interpretation of cross-lagged analyses is, of course, more complex than this (see Kenny's discussion, cited above), but our concern here is simply to present the kind of contribution this strategy can make.

Taken together, the 10 strategies have generated a high degree of convergence, and the logical structure they comprise is coherent. Consonance of results from the separate strategies—for example, the commonality between the variables that are associated cross-sectionally with problem behavior and those that predict its onset over time—makes for strong conviction about the *explanatory relevance* of the variables. But it needs to be emphasized that none of the strategies, separately or together, does more than document an association, even where temporal order is known, and therefore *causal influence* has not been demonstrated. What the multiple, converging strategies have yielded is a strong sense that the theoretical variables are closely involved in the processes that surround the occurrence of problem

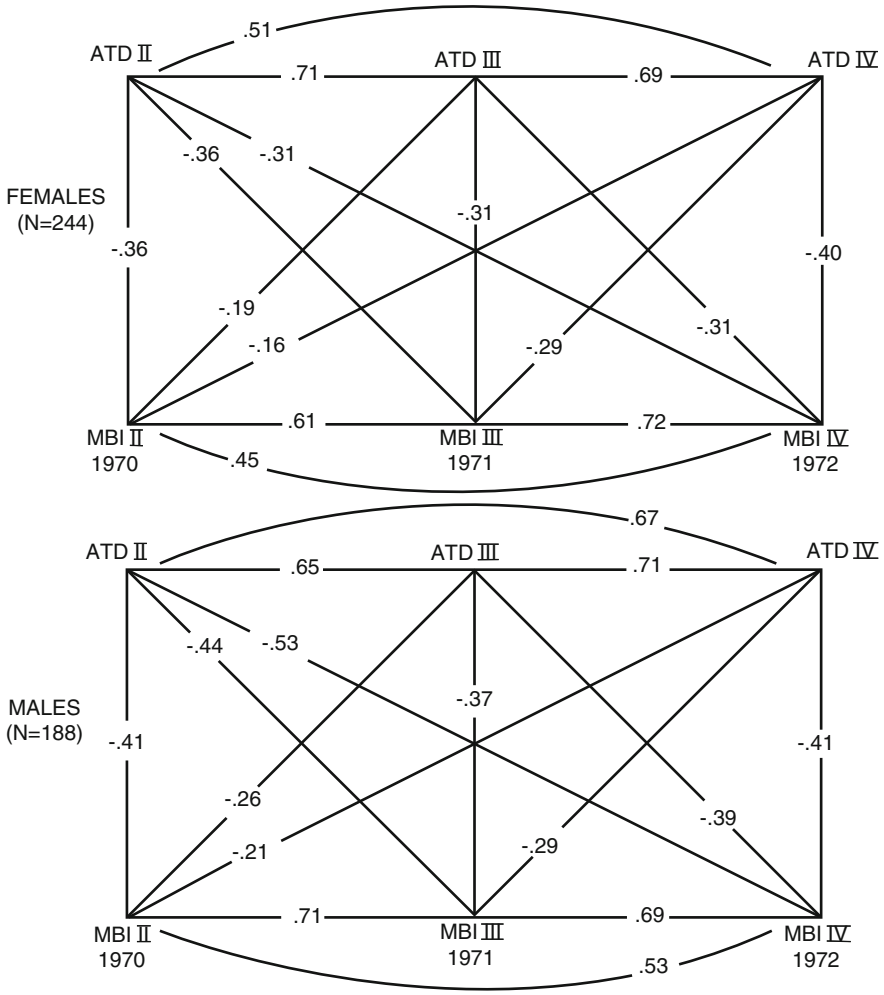

Fig. 4.1 Cross-lagged panel correlations for attitudinal tolerance of deviance (ATD) and marijuana behavior involvement (MBI) for Years II, III, and IV, High School Study

behavior in youth and are relevant to its development over time. Were it not for these convergent strategies, that conviction and that sense of relevance would have remained tenuous and delicate.

The Role of Personality. In recent years, in psychology at least, interest in personality has languished; its conceptual status had been widely challenged and its empirical utility had been severely depreciated. One of our aims in this research was to contribute to a revitalization of interest in personality as an explanatory system. By conceptualizing personality at a cognitive-social level, by formulating personality variables that have logical linkages to the environment and to behavior,

by employing personality measures that were theory derived, structured, and construct validated, and by assessing a comprehensive but organized network of personality variables it was possible to demonstrate the significant role it plays in social behavior. At the high school level, multiple correlations of the personality system reached close to .60 in relation to the problem behavior index, providing a substantial account of variance. This account is actually an underestimate of the potential contribution that could be made by the personality system since measures such as religiosity were not included in the personality run and the proximal measures of drug and sex disjunctions were held aside for a separate run. But beyond the magnitude of explanation that personality factors can provide, there are two additional points to emphasize on the basis of our research.

First, the inclusion of personality measures in social-psychological research permits a more satisfactory *explanatory* account of behavioral variation. In circumstances where the environment is controlled or standard, personality constitutes a source of variance in behavior that enables an account to be made of whatever individual differences are observed. And when behavior seems not to be in accord with the demand characteristics of an environment (e.g., when an adolescent in a deviance-prone peer group continues to behave in a conforming way), personality variation provides the logical basis for explanation.

The second point has to do with the competition for explanatory dominance that has been a chronic aspect of the personality-situation controversy in psychology. From an interactionist or field theory perspective, such a competition can have no meaning. But another consideration emerges clearly from our work that has not, to our knowledge, been given attention. The importance of a variable or a system—the amount of variance it explains in a behavioral criterion—depends in large part on how proximal it is to the behavior, rather than whether it is a personality or a situational variable. In the disputes over whether the environment is a more important determinant than personality, no attention has been given to the proximal-distal issue, and critiques of the weakness of personality measures have usually addressed measures that are very distal from action.

We can illustrate the point we are making with our data on the multiple problem behavior index. In the High School Study the multivariate personality run yielded multiple correlations of .57 and .58 for males and females, respectively. If we want to ask whether the correlations for the perceived environment are better or worse than this, the answer is that *it depends on which part of the perceived environment is considered.* The multiple correlations for the *proximal* structure are better, .69 and .69 for the two sexes, but the multiple correlations for the *distal* structure are worse, .36 and .39. Exactly the same pattern holds at the college level. The personality run correlations are .29 and .41 for males and females; the correlations for the proximal structure of the perceived environment are again better, .61 and .64, while those for the distal structure are again worse, .25 and .23. No discussion of the relative explanatory contribution of personality and environmental factors can be meaningful without recognition of the necessity to consider the proximal-distal dimension.

We touched on this issue in relation to the proximal character of the measures in the personal control structure, and in Jessor and Jessor (1973) in regard to the differentiation of the perceived environment. The findings in the present study have been especially illuminating because we have maintained an analytic separation between the personality system and the perceived environment system, and because of the differentiated structures within each system. On both logical and empirical grounds, the importance of personality as an explanatory system in social-psychological research has been strengthened by the outcome of this study.

The Role of the Environment

Since the environment issue received consideration in the preceding section, only one point will be raised here. It has to do with our choice to focus upon the perceived environment rather than, say, the sociocultural environment or the demographic environment, which are more independent of the actor. In analyses of the demographic data that were collected, relations with problem behavior variation were generally meager and inconsequential. Unfortunately, the limited range of socioeconomic and ethnic differences in the research community made for an unsatisfactory test. Where better tests were possible, however, the outcome was not very different. For example, Elliott and Voss (1974) indicate that in their data delinquent behavior does not appear to be related to social class or ethnic origins; and in her review of research on drug use among youth, Kandel (1978) concludes that sociodemographic variables have little predictive power for initiation into marijuana use. The national sample study mentioned earlier yielded similar findings: Demographic variables have minimal linkage to variation in problem drinking or marijuana involvement.

The point we draw from these observations is that the demographic environment is probably too conceptually distal from behavioral variation to be empirically useful. For environmental variables to be effective in social-psychological research, they need to be more proximal. If they are not variables that are perceived by the actor—the choice we made—they should probably represent the perceptions of others about aspects of the environment likely to be relevant to action.

Issues Related to Psychosocial Development

Several aspects of the developmental findings have implications that warrant discussion. First, the concept of transition proneness would appear to be useful in developmental research. Referring to a "readiness" to change status along a developmental continuum, its conceptual components are clear and their measurement is feasible. That it refers to a readiness to change *status* rather than to engage in a particular behavior needs emphasis; this was borne out by two aspects of the

findings: that transition proneness was not behavior specific but implicated a set of transition-marking actions and that transition itself was associated with a constellation of personality changes, the kind of organized change that suggests a concomitant shift in self-identity. Although we have focused on transition initiated by engaging in transition-marking behaviors, it is also possible that transition proneness can be implemented by a cognitive reorganization of personality—a decision, for example, to be more independent or to become a more responsible person. Research on this latter aspect would indeed be illuminating.

Second, although the direction of developmental change in the High School Study was consistent whether the data were partitioned by sex, or grade, or even by time of onset of transition behavior, there was clear evidence in the trajectories of what has been called "cohort effects." This refers to the fact that the developmental curves for cohorts born in different years may differ in both level and shape. Because of our theoretical focus on the direction of change, we did not pursue an analysis of cohort effects, and in any case it is difficult to know how they might be interpreted. The argument that they reflect historical differences in life experience is not compelling when the interval between cohorts is only a year, rather than, say, a decade. An alternative possibility is that they simply reflect sampling variation, a possibility that might be ruled out in developmental studies by employing multiple samples in each birth cohort. Although they argue for the importance of dealing with cohort effects in their recent extensive review, Baltes, Cornelius, and Nesselroade (1978) concede finally that ". . . the available evidence on the role of cohort effects in behavioral development is largely descriptive; efforts at theoretical-explanatory analysis are rare and at best prototheoretical [p. 48]." Until work in this area is further advanced, not much more can be done with cohort effects than to acknowledge their existence and hope that that in itself will be heuristic.

One other aspect of the developmental findings was noteworthy; beginning to drink, more than marking a transition in status, seems to imply crossing a watershed. The pivotal character of becoming a drinker was evident in the fact that abstainers had remarkably low rates of engaging in any of the variety of problem behaviors assessed. Not using alcohol appears to be associated with an insulation against problem behavior that is also reflected in a distinctive pattern of conformity proneness in personality and the perceived environment. The interesting implication is that transition behaviors may be ontogenetically ordered, and the key developmental change may be the one involved in crossing the initial threshold—in this case, beginning to drink.

The Historical Specificity of the Findings

How much our findings are bounded by the period in which they were obtained and are specific to that point in history is interesting to contemplate. The interpretation we have made of particular behaviors, and the very notion of problem behavior,

depend upon the social and personal meanings that are attached to them. Important changes have taken place in recent history, and their effects on those meanings may well be far reaching. The "hang-loose ethic" of the 1960s (see Simmons & Winograd, 1966, and Suchman, 1968) is no longer apposite as a summary of the orientation of youth, and Winick (1975) has catalogued a number of changes between the two decades, the 1960s and the 1970s. With regard to marijuana use and sexual activity, the shift in societal attitudes is unmistakable, and prevalence rates have increased markedly. Even legal policy toward marijuana use has undergone transformation, with decriminalization statutes in a number of places and a relaxation of enforcement elsewhere. Such changes are likely to change the meanings that have been associated with these behaviors.

In our own data, for example, there is evidence that traditional sex differences have begun to erode and that males and females are converging in their rates of involvement in problem behavior. The trend toward disappearance of greater conventionality among females is clearly apparent when the criterion is modest—any experience at all. When the criterion is more stringent—heavier involvement with marijuana or frequent drunkenness, for example—males still outdistance females. Whether the trend will continue as women's roles are redefined and sex-role distinctions diminish is difficult to anticipate, but if it does it will carry with it a secular change in the significance of female problem behavior. Similar secular change is likely in relation to age also, with a trend toward earlier onset and the dissipation of traditional age distinctions.

The implications of such changes seem to us more impactful on particular behaviors than on Problem Behavior Theory as a whole. Although specific behaviors may shift in their meaning and decay as appropriate criteria, the general processes and structures of the theory should retain a degree of invariance in relation to adolescent growth and development.

A Closing Remark

Beyond its aims to test a social-psychological theory and to advance knowledge about youth, the work we have reported has tried to place problem behavior in a perspective of normal development. Much of the behavior is problematic only in relation to age, and problem proneness can often mean no more than developmental precocity. This is not to minimize the seriousness of some of the behaviors, for example, the excessive use of alcohol. Our view is that a benign and regulated outcome is more likely if there is a societal effort to understand the processes that underlie the occurrence of such behavior. Repressive policies have been counterproductive, and interpretations of maladjustment appear to be efforts to divest society of its share of responsibility. It would be an important step forward for prevention and control if problem behavior in youth came to be seen as part of the dialectic of growth, a visible strand in the web of time.

References

Baltes, P. B., Cornelius, S. W., & Nesselroade, J. R. (1978). Cohort effects in behavioral development: Theoretical and methodological perspectives. In W. A. Collins (Ed.), *Minnesota symposia on child psychology* (Vol. 2, pp. 1–63). Hillsdale NJ: Lawrence Erlbaum Associates.

Block, J. (1971). *Lives through time*. Berkeley: Bancroft Books.

Braucht, G. N. (1974). A psychosocial typology of adolescent alcohol and drug users. In M. E. Chafetz (Ed.), *Alcoholism: A multilevel problem. Proceedings of the Third Annual Alcoholism Conference*. National Institute on Alcohol Abuse and Alcoholism (pp. 129–144). Washington, DC: U.S. Government Printing Office.

Chase, J. A., & Jessor, R. (1977). *A social-psychological analysis of marijuana involvement among a national sample of adolescents.* Unpublished report to National Institute on Alcohol Abuse and Alcoholism, Contract No. ADM 281-75-0028, January, pp. 1–99.

Donovan, J. E. (1977). A typological study of self-reported deviance in a national sample of adolescents. Unpublished doctoral dissertation, University of Colorado.

Donovan, J. E., & Jessor, R. (1976). *Problem drinking among adolescents: A social-psychological study of a national sample.* Unpublished report to National Institute on Alcohol Abuse and Alcoholism, Contract No. ADM 281-75-0028, July, pp. 1–116.

Elliott, D. S., & Voss, H. L. (1974). *Delinquency and dropout*. Lexington, MA: D. C. Heath.

Jessor, R., Graves, T. D., Hanson, R. C., & Jessor, S. L. (1968). *Society, personality, and deviant behavior: A study of a tri-ethnic community.* New York: Holt, Rinehart and Winston. (Reprinted by Krieger Publishing Co., 645 New York Ave., Huntington, NY, 1975.)

Jessor, R., & Jessor, S. L. (1973). The perceived environment in behavioral science: Some conceptual issues and some illustrative data. *American Behavioral Scientist, 16*, 801–828.

Jessor, R., & Jessor, S. L. (1978). Theory testing in longitudinal research on marijuana use. In D. B. Kandel (Ed.), *Longitudinal research on drug use: Empirical findings and methodological issues* (pp. 41–71). Washington, DC: Hemisphere (Wiley).

Kandel, D. B. (1978). Convergences in prospective longitudinal surveys of drug use in normal populations. In D. B. Kandel (Ed.), *Longitudinal research on drug use: Empirical findings and methodological issues* (pp. 3–38). Washington, DC: Hemisphere (Wiley).

Kenny, D. A. (1975). Cross-lagged panel correlation: A test for spuriousness. *Psychological Bulletin, 82*, 887–903.

Nesselroade, J. R., & Baltes, P. B. (1974). Adolescent personality development and historical change: 1970–1972. *Monographs of the Society for Research in Child Development* (Serial No. 154, Vol. 39, pp. 1–80).

Rachal, J. V., Williams, J. R., Brehm, M. L., Cavanaugh, B., Moore, R. P., & Eckerman, W. C. (1975). *A national study of adolescent drinking behavior, attitudes, and correlates.* (Prepared for National Institute on Alcohol Abuse and Alcoholism. Rep. No. PB-246-002; NIAAA/NCALI-75/27). Springfield, VA.: U.S. National Technical Information Service.

Sadava, S. W. (1973). Initiation to cannabis use: A longitudinal social psychological study of college freshmen. *Canadian Journal of Behavioral Science, 5*, 371–384.

Simmons, J. L., & Winograd, B. (1966). *It's happening: A portrait of the youth scene today*. Santa Barbara, CA: Marc-Laird Publications.

Suchman, E. A. (1968). The "hang-loose" ethic and the spirit of drug use. *Journal of Health and Social Behavior, 9*, 146–155.

Winick, C. (1975). Speculations on possible changes in youthful life-styles between the 1960's and 1970's. In D. J. Lettieri (Ed.), *Predicting adolescent drug abuse: A review of issues, methods and correlates* (National Institute on Drug Abuse Research Issue Series No. 11, pp. 55–60). Washington, DC: U.S. Government Printing Office.