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Ary, D.V., & Biglan, A. (1988). Longitudinal changes in adolescent cigarette smoking behavior: Onset and cessation. *Journal of Behavioral Medicine, 11*, 361-382.

Abstract: Employed a 1-yr longitudinal design to examine factors related to change in adolescent smoking in 801 7th, 9th, and 10th graders. Ss provided questionnaire and physiological data regarding rates of smoking and related factors. Predictors of smoking onset differed from predictors of continued smoking. Peer smoking predicted continuation of smoking after initiation. Smokers received over 26 times more offers to smoke than did nonsmokers. Habitual smoking was found to develop slowly, providing a substantial time window for refusal skill training and other prevention efforts. Predictors of smoking onset differed by developmental level. Peer smoking and marijuana use were stronger predictors of smoking onset for high-school students; number of cigarette offers predicted better among middle-school students.

Ary, D.V., Biglan, A., Glasgow, R.E., Zoref, L., Black, C., Ochs, L.M. et al. (1990). The efficacy of social-influence prevention programs versus "standard care:" Are new initiatives needed? *Journal of Behavioral Medicine, 13*, 281-296.

Abstract: Evaluated the effects of a school-based smoking prevention program after 1 yr, using school (22 middle/elementary schools, 15 high schools) as both the unit of randomization and the unit of analysis. The study evaluated the incremental effects of the social influence intervention compared with "standard-care" curricula. Among those who reported smoking one or more cigarettes in the month prior to the intervention, there was a significant treatment effect on rate of smoking at 1 year, but no grade level, gender, or interaction effects. The 1-year covariate-adjusted smoking rate among pretest smokers in the treatment schools was 76.6 cigarettes per month compared with 111.6 cigarettes per month in control schools, a 31.4% difference. The analyses for nonsmokers, however, showed no significant effects, and the program did not affect self-reported alcohol or marijuana use.

Ary, D.V., Duncan, T.E., Biglan, A., Metzler, C.W., Noell, J.W., & Smolkowski, K. (1999). Development of adolescent problem behavior. *Journal of Abnormal Child Psychology, 27*, 141-150.

Abstract: The social context model of development of adolescent antisocial behavior advanced by G. R. Patterson et al (1992) appears to generalize the development of a diverse set of problem behaviors. Structural equation modeling methods were applied to 18-mo longitudinal data from 523 14-17 yr old adolescents. The problem behavior construct included substance use, antisocial behavior, academic failure, and risky sexual behavior. Families with high levels of conflict were less likely to have high levels of parent-child involvement. Such family conditions resulted in less adequate parental monitoring of adolescent behavior, making associations with deviant peers more likely. Poor parental monitoring and associations with deviant peers were strong predictors of engagement in problem behavior. These constructs accounted for 46% of the variance in problem behavior. Although association with deviant peers was the most proximal social influence on problem

behavior, parental monitoring and family factors (conflict and involvement) were key parenting practices that influenced this developmental process.

Ary, D.V., James, L., & Biglan, A. (1999). Parent-daughter discussions to discourage tobacco use: Feasibility and content. *Adolescence, 34*, 275-282.

Abstract: The goals of this study were (1) to develop a pamphlet that could guide parents in talking to their daughters about tobacco use (TU), (2) to examine the extent to which parent-daughter interactions were aversive, (3) to determine parent receptivity to the pamphlet, (4) to solicit input from parents and daughters on improving the content of the intervention materials, and (5) to learn more about interventions that might prevent TU among young women. Ss were 44 6th- and 8th-grade females, along with 41 mothers and 3 fathers. Researchers audiotaped pamphlet-guided conversations for later coding. The conversations seemed to have gone well, with very little conflict reported. The daughters reported that the parental advice was helpful and that they did not resist receiving such advice. Among the topics suggested by the pamphlet, the following were most frequently discussed: consequences of TU as experienced by friends and relatives, difficulty quitting, promotional tactics of tobacco companies, and making rules about TU. Overall, results suggest that it is possible to successfully carry out such parent-daughter conversations about TU in a non-aversive manner.

Barrera, M. Jr., Biglan, A., Ary, D., & Li, F. (2001). Replication of a problem behavior model with American Indian, Hispanic, and Caucasian youth. *Journal of Early Adolescence, 21*, 133-157.

Abstract: The authors evaluated the replicability of a model of family and peer influences on adolescent problem behavior with samples of adolescent boys and girls from three ethnic groups: American Indians, Hispanics, and Caucasians. Participants were 1,450 seventh graders from 16 communities. The model included links between three aspects of family functioning (family conflict, positive family relations, and inadequate parental monitoring) and adolescents' association with deviant peers. Those variables were hypothesized predictors of adolescents' problem behavior (antisocial behavior, poor school performance, and frequency of substance use). The resulting cross-sectional model showed good consistency across the 3 ethnic groups for both genders, but some subgroup differences emerged in the magnitude of relations between monitoring and adolescents' associations with deviant peers and between substance use and the problem behavior construct. With those qualifications, the model was applicable to Hispanic and Native American adolescents in the sample.

Barrera, M., Jr., Biglan, A., Taylor, T. K., Gunn, B.K., Smolkowski, K., Black, C. et al. (2002). Early elementary school intervention to reduce conduct problems: A randomized trial with Hispanic and non-Hispanic children. *Prevention Science, 3*, 83-94.

Abstract: Children's aggressive behavior and reading difficulties during early elementary school years are risk factors for adolescent problem behaviors such as delinquency, academic failure, and substance use. This study determined if a comprehensive intervention designed to address both of these risk factors could affect teacher, parent, and observer measures of internalizing and externalizing problems. The study randomly assigned 116 European American and 168 Hispanic children (kindergarten through third grade) from 3 communities selected for aggressiveness or reading difficulties to an intervention or no-intervention control condition. Intervention families received parent training, and their

children received social behavior interventions and supplementary reading instruction over a 2-yr period. At the end of intervention, playground observations showed that treated children displayed less negative social behavior than controls. At the end of a 1-yr follow-up, treated children showed less teacher-rated internalizing and less parent-rated coercive and antisocial behavior than controls. The authors discuss the study's limitations and implications for prevention.

Barrera, M. Jr., Castro, F. G., & Biglan, A. (1999). Ethnicity, substance use, and development: Exemplars for exploring group differences and similarities. *Development and Psychopathology, 11*, 805-822.

Abstract: Presents 3 general approaches to studying ethnic-group differences in the predictors of substance use that illustrate probing for mediators, multi-sample analyses of structural models, and an experimental trial of a preventive intervention. The summary of the research presented indicates some ethnic-group differences in the structure of construct and the relations between variables, but many similarities. The authors discuss the importance of researchers using appropriate research methods for studying ethnicity, uncovering the basis for ethnic-group differences when they occur, knowing when statistical differences are meaningful, and acknowledging when developmental models are comparable.

Biglan, A. (1995). *Changing cultural practices: A contextualist framework for intervention research*. Reno, NV: Context Press.

Abstract: Section 1 provides a framework for research on changing cultural practices. This section includes discussions of the science for changing cultural practices, functional contextualism, behavior of individuals, analysis of cultural practices, and both principles and ethical principles for changing cultural practices. Section 2 outlines strategies for changing some important cultural practices. Chapters discuss reducing the prevalence of tobacco use, changing childrearing practices in American communities, reducing sexist practices in the United States, and changing environmentally harmful practices. Section 3 discusses the development of a science for changing cultural practices including methodological considerations and strategies for developing such a science.

Biglan, A. (1989). A contextual approach to the clinical treatment of parental distress. In G. H. Singer & L. K. Irvin (Eds.), *Support for caregiving families: Enabling positive adaptation to disability* (pp. 299-311). Baltimore: Brookes.

Abstract: Many parents of handicapped children, like many other people who have difficult or distressing circumstances to deal with, often find themselves deflected from pursuing significant directions by thoughts and feelings they do not want ///this chapter is about an approach to assisting parents of handicapped children in dealing with this kind of dilemma/the approach is an emerging synthesis of two lines of thinking in behavior analysis: a problem-specific approach to treatment of depression and related problems and comprehensive distancing///problems of parents of handicapped children/a contextual approach to treatment/problem-specific treatment/procedures in comprehensive distancing/goal setting/enhancing compliance/interventions for specific targets

Biglan, A. (1991). Distressed behavior and its context. *Behavior Analyst, 14*, 157-169.

Abstract: Examines the role that behavior indicative of distress may play in the interactions of people who are depressed or experiencing chronic pain. Such behavior includes nonverbal facial expressions and body postures typically labeled as "sad" and verbal responses

involving self-denigration or complaints. Recipients of distressed behavior are more likely to experience negative emotion, yet be solicitous toward the person who displays distressed behavior. Under circumstances in which distressed behavior is unsuccessful in reducing aversive stimulation, the behavior may be shaped and maintained by the fact that it temporarily reduces the probability of others behaving aggressively toward the person displaying distress. Thus, the development of a pattern of high rates of distressed behavior that characterizes clinically depressed persons and persons in chronic pain may be partly a result of the unique social contingencies that surround this behavior.

Biglan, A. (1992). Family practices and the larger social context. *New Zealand Journal of Psychology, 21*, 37-43.

Abstract: Discusses the need for theoretical and empirical analyses of the effects of the larger social context on family functioning. Further progress may require the development of understanding of how factors such as the nature of productive and reproductive activities in industrialized societies affect family structure and interaction. This paper suggests a theoretical framework for such an analysis based on the anthropological theory of M. Harris (1979, 1981). According to this view, changes in family structure over the past 100 yrs stem from the shift from agricultural to urban, industrial modes of production. In this context, smaller and fewer families, women working outside the home, and divorce, have, in turn, affected marital relations and parenting practices. Empirically delineating these relationships, and developing and evaluating policies and interventions to contend with these influences, could be a major source of further progress.

Biglan, A. (1995). Choosing a paradigm to guide prevention research and practice. *Drugs and Society, 8*, 149-160.

Abstract: Examines the influences, strengths, and weaknesses of the main paradigms or philosophical systems that guide prevention research organicism, mechanism, and contextualism. Organicism has underpinned developmentalism and prompted us to identify typical developmental sequences and to organize our prevention efforts to reduce the risk factors that contribute to problematic development. Mechanism has encouraged us to search for generalizable models of the interrelationships among behavioral variables and randomized control trials of prevention programs. Contextualism has given a framework for working with the individual case. When we focus contextualism on the goal of prediction and influence of the phenomenon under study, we are particularly likely to identify interventions that can be useful in preventing problems of concern to communities and other social units. The most prominent example is behavioral analysis.

Biglan, A. (1995). Translating what we know about the context of antisocial behavior into a lower prevalence of such behavior. *Journal of Applied Behavior Analysis, 28*, 479-492.

Abstract: Although many variables that affect antisocial behavior have been identified, there is no evidence that this knowledge has been translated into a reduction of the incidence of such behavior or the proportion of young people who repeatedly engage in antisocial behavior. It is appropriate, therefore, for behavioral scientists to turn some of their energies to research on reducing the incidence and prevalence of antisocial behavior. Small communities may be a useful social unit in which to conduct experimental research. The interventions to be tested include advocacy and community organizing to influence communities to make validated school and clinical interventions widely available and to assist them in increasing other forms of supervision of young people and social and material

support of families. The author suggests key components of advocacy and community organizing and describes possibilities for research.

Biglan, A. (2003). Selection by consequences: One unifying principle for a transdisciplinary science of prevention. *Prevention Science*, 4, 213-232.

Abstract: The principle of selection by consequences is critical to the analysis of a broad range of phenomena in the biological and behavioral sciences, from the evolution of species to the selection of cultural practices. The author reviews the role of that principle in diverse areas of the biobehavioral sciences and discusses how it can provide one dimension along which to integrate the diverse disciplines relevant to the prevention of problems of human behavior. Such integration should improve the ability of prevention science to reduce the incidence and prevalence of human behavior problems.

Biglan, A. (2004). Contextualism and the development of effective prevention practices. *Prevention Science*, 5(1), 15-21.

Abstract: The explicit adoption of a functional contextualist framework for prevention research will facilitate widespread and effective implementation of research-based prevention practices. Such a framework has as its central goal predicting and influencing behavior and cultural practices. Research within this framework is evaluated in terms of its ability to contribute to that goal. As a result, it contributes directly to the ultimate goals of prevention science—affecting the incidence and prevalence of problems in populations. The approach contrasts with the mechanist framework, which is implicit in much behavioral science research. The mechanist framework has as its truth criterion the predictive verification of models of the interrelationships among variables. Such models can—but need not—identify manipulable variables that we can exploit to affect problems of interest. Such models require the inclusion of multiple cases for testing and this requirement may impede the tendency of scientists to work with a single school or community. It provides a framework within which researchers can more readily collaborate with practitioners in the development and further evaluation of practices within the settings where practitioners will ultimately use those practices.

Biglan, A., & Cody, C. (2003). Preventing multiple problem behaviors in adolescence. In D. Romer (Ed.), *Reducing adolescent risk: Toward an integrated approach* (pp. 125-131). Thousand Oaks, CA: Sage.

Book Abstract: This volume summarizes the presentations and discussions held at the June 2002 conference of the Adolescent Risk Communication Institute, Annenberg Public Policy Center and focuses on common influences that result in a number of interrelated risk behaviors in order to design more unified, comprehensive prevention strategies.

Biglan, A., & Glasgow, R.E. (1991). The social unit: An important facet in the design of cancer control research. *Preventive Medicine*, 20, 292-305.

Abstract: The research phases defined by NCI have prompted behavioral scientists to focus research on decreasing cancer risk behaviors. However, most of the work thus far has focused on the effects of interventions on individuals' behavior. Further progress may require that we also go through similar research phases with larger social units, such as worksites, health care organizations, and communities as the research targets. Research on larger social units is needed to: a) disseminate interventions that have been shown to affect individuals' cancer risk; b) sustain the effects of cancer control interventions; and c) modify

practices of larger social units which affect individual's cancer risk. This article provides examples of how the research phase scheme can apply productively to larger social units.

Biglan, A., & Hayes, S. C. (1996). Should the behavioral sciences become more pragmatic? The case for functional contextualism in research on human behavior. *Applied and Preventive Psychology, 5*, 47-57.

Abstract: The authors argue that much of behavioral science theory and empirical practice is not well suited to the development of preventive or ameliorative procedures; rather it focuses narrowly on developing models of the relationships among organismic events and pays too little attention to identifying contextual variables that predict and influence cognitive, emotional, and overt behavior. The authors propose a version of contextualism as an alternative paradigm for the behavioral sciences. According to this paradigm, theories and research receive evaluation in terms of their contribution to the prediction and influence of behavior. Basic research organized to pursue this goal has a direct bearing on how behavioral phenomena can change for practical purposes. Conversely, applied research contributes to basic understanding of the determinants of psychological phenomena.

Biglan, A. & Smolkowski, K. (2002). Intervention effects on adolescent drug use and critical influences on the development of problem behavior. In D.B. Kandel (Ed.), *Stages and pathways of drug involvement: Examining the gateway hypothesis* (pp. 158-183). New York: Cambridge University.

Abstract: This book represents the first systematic discussion of the Gateway Hypothesis, a developmental hypothesis formulated to model how adolescents initiate and progress in the use of various drugs. In the United States, this progression proceeds from the use of tobacco or alcohol to the use of marijuana and other illicit drugs. This volume presents a critical overview of current knowledge about the Gateway Hypothesis. The authors of the chapters explore the hypothesis from various perspectives ranging from developmental social psychology to prevention and intervention science, animal models, neurobiology and analytical methodology. This volume is original and unique in its purview, covering a broad view of the Gateway Hypothesis. The juxtaposition of epidemiological, intervention, animal, and neurobiological studies represents a new stage in the evolution of drug research, in which epidemiology and biology inform one another in the understanding of drug abuse.

Biglan, A., & Smolkowski, K. (2002). The role of the community psychologist in the 21st century. *Prevention & Treatment, 5*, NP.

Abstract: This article describes likely roles for community psychologists in the 21st century. From a public health perspective, one goal of community psychologists is to assist communities in reducing the incidence and prevalence of human behaviors that they view as undesirable. The roles of community psychologists that are implied by this goal include (a) facilitating community decision-making about goals and the programs and policies intended to achieve them, (b) assessing the well-being of community members, (c) articulating which programs and policies are likely to affect targeted problems, and (d) providing consultation and training for the implementation of programs and policies. An infrastructure of national- and state-level organizations is necessary to support the work of psychologists in local communities. The authors delineate some of the implications of this analysis for the training of community psychologists.

Biglan, A., & Taylor, T. K. (2000). Increasing the use of science to improve childrearing. *Journal of Primary Prevention, 21*, 207-226.

Abstract: The prevention of problems of human behavior will begin to take place if scientific findings and methods become integral parts of policymaking and program adoption. The present paper provides a conceptual framework for research on this problem, using the dissemination of empirically supported preventive programs for youth as an example. As we begin to identify empirically supported preventive practices, we need analyses of which organizations might adopt each practice and the factors influencing such adoptions. Ultimately, it will be necessary to conduct experimental studies that manipulate presumed influences on practice, adoption, and maintenance.

Biglan, A., & Taylor, T. K. (2000). Why have we been more successful in reducing tobacco use than violent crime? *American Journal of Community Psychology, 28*, 269-302.

Abstract: Tobacco control efforts have been associated with a significant reduction in the prevalence of tobacco use in the United States. Efforts to reduce the incidence of violent crime have been much less successful. This paper argues that progress on tobacco control stems from the existence of a clear, empirically based, and widely understood analysis of the tobacco problem that articulates (a) the harms associated with its use, (b) the causes of tobacco use, and (c) the programs and policies that could reduce tobacco use. This analysis has guided the development of a network of social organizations that have been advocating for policies and programs that are reducing tobacco use. In contrast, there is not a widely shared, cogent, and empirically based analysis of the problem of violent crime. As a result, efforts to combat violent crime lack coherence; it has proven difficult to generate support for preventive programs and policies. There is substantial empirical progress, however, on how to prevent violent crime. The authors review that evidence. While the articulation of this evidence is a critical first step for achieving widespread reduction in the incidence of violent crime, communication of that evidence to audiences that matter will require that behavioral scientists organize better to advocate for the adoption of empirically supported practices.

Biglan, A., Ary, D.V., & Wagenaar, A. C. (2000). The value of interrupted time-series experiments for community intervention research. *Prevention Research, 1*, 31-49.

Abstract: The authors advocate greater use of interrupted time-series experiments for community intervention research. Time-series designs enable the development of knowledge about the effects of community interventions and policies in circumstances in which randomized controlled trials are too expensive, premature, or simply impractical. The multiple baseline time-series design typically involves two or more communities assessed repeatedly, with the intervention introduced into one community at a time. It is particularly well suited to initial evaluations of community interventions and the refinement of those interventions. This paper describes the main features of multiple baseline designs and related repeated-measures time-series experiments, discusses the threats to internal validity in multiple baseline designs, and outlines techniques for statistical analyses of time-series data. The authors provide examples of the use of multiple baseline designs in evaluating community interventions and policy changes.

Biglan, A., Ary, D.V., Koehn, V., Levings, D., Smith, S., Wright, Z. et al. (1996). Mobilizing positive reinforcement in communities to reduce youth access to tobacco. *American Journal of Community Psychology, 24*, 625-638.

Abstract: Evaluated a community intervention to mobilize positive reinforcement for not selling tobacco to young people. The intervention had 5 components mobilization of community support, merchant education, changing consequences to clerks for selling or not

selling to those under 18, publicity about clerks' refusals to sell, and feedback to store owners or managers about the extent of their sales to adolescents. The authors conducted a multiple baseline design experiment in which two small Oregon communities received the intervention, while two others continued in baseline. Teenage volunteers repeatedly assessed outlets' willingness to sell. The intervention significantly reduced the proportion of stores willing to sell. Mobilizing social and material reinforcement for stores not selling tobacco to young people is a viable means of reducing such sales.

Biglan, A., Ary, D.V., Smolkowski, K., Duncan, T.E., & Black, C. (2000). A randomized control trial of a community intervention to prevent adolescent tobacco use. *Tobacco Control*, 9, 24-32.

Abstract: *Objective:* Experimental evaluation of a comprehensive community-wide programme to prevent adolescent tobacco use. *Design:* Eight pairs of small Oregon communities (population 1,700 to 13,500) randomly assigned to receive a school-based prevention programme or school-based programme plus a community programme. Effects assessed through five annual surveys (time 1-5) of 7th and 9th grade (ages 12-15) students. *Intervention:* Community programme included: (a) media advocacy, (b) youth anti-tobacco activities, (c) family communications about tobacco use, and (d) reduction of youth access to tobacco. *Main Outcome Measure:* The prevalence of self-reported smoking and smokeless tobacco (ST) use in the week before assessment. *Results:* The community programme had significant effects on the prevalence of weekly cigarette use at times 2 and 5 and the effect approached significance at time 4. An effect on the slope of prevalence across time points was evident only when analysts eliminated time 2 data points. The intervention affected the prevalence of ST among grade 9 boys at time 2. There were also significant effects on the slope of alcohol use among 9th graders and the quadratic slope of marijuana for all students. *Conclusion:* Results suggest that comprehensive community-wide interventions can improve on the preventive effect of school-based tobacco prevention programmes and that effective tobacco prevention may prevent other substance use.

Biglan, A., Ary, D., Yudelson, H., Duncan, T.E., & Hood, D. (1996). Experimental evaluation of a modular approach to mobilizing antitobacco influences of peers and parents. *American Journal of Community Psychology*, 24, 311-339.

Abstract: The authors describe the experimental evaluation of two components of a community intervention to prevent adolescent tobacco use. Researchers evaluated youth antitobacco activities (e.g., peer quizzes, sidewalk art, poster and T-shirt giveaways, etc.) and family communications activities (pamphlets to parents and student quizzes of parents) in two time-series experiments, each of which occurred in two experimental and one control community. Students in Grades 6 and 8 and their parents underwent assessment in a series of four phone surveys in the first experiment and six phone surveys in the second. Implementation of the youth antitobacco and family communications activities led to significantly greater exposure of young people to antitobacco information. They led to increases in parent and youth knowledge about tobacco use and more negative attitudes toward tobacco. In Experiment 2, youths in intervention communities had significantly lower rated intentions to smoke. The findings suggest the value of a modular approach to community interventions for influencing the social context relevant to the onset of adolescent tobacco use.

Biglan, A., Brennan, P.A., Foster, S.L., Holder, H.D., Miller, T.L., Cunningham, P.B. et al. (2004). *Helping adolescents at risk: Prevention of multiple problem behaviors*. New York: Guilford.

Abstract: This comprehensive volume reviews current knowledge about multiple problem behaviors in adolescence, focusing on "what works" in prevention and treatment. The authors present cutting-edge research on the epidemiology, development, and social costs of four youth problems that frequently co-occur: serious antisocial behavior, drug and alcohol misuse, tobacco smoking, and risky sexual behavior. The authors outline a framework for reducing these behaviors, drawing on both clinical and public health perspectives and identify empirically supported prevention and treatment programs. They also address ways to promote the development, dissemination, and effective implementation of research-based intervention practices. Authored by an interdisciplinary panel of experts, this is a state-of-the-science sourcebook and text for anyone working with or studying adolescents at risk.

Biglan, A., Duncan, T.E., Ary, D.V. & Smolkowski, K. (1995). Peer and parental influences on adolescent tobacco use. *Journal of Behavioral Medicine*, 18, 315-30.

Abstract: Tested longitudinal models of the development of adolescent smoking and smokeless tobacco (ST) use with 608 adolescents (383 girls), aged 14-27 years. Subjects and their parents completed a questionnaire. Ss also provided expired air and saliva samples. Smoking, ST use, and other problem behaviors formed a single problem behavior factor. Structural equation modeling indicated that inadequate parental monitoring (PM) and association with deviant peers at Time 2 predicted tobacco use at Time 3. When parental and peer smoking at Time 2 were added to the model, each accounted for significant variance in predicting Time 3 smoking, but inadequate PM and association with deviant peers still accounted for some of the variance in Time 3 smoking. In predicting boys' ST use, PM at Time 2 predicted ST use, but only when parental approval of ST use was not included. Father's approval and mother's disapproval of ST use at Time 2 predicted ST use at Time 3.

Biglan, A., Glasgow, R.E., & Singer, G.H. (1990). The need for a science of larger social units: A contextual approach. *Behavior Therapy*, 21, 195-215.

Abstract: Describes issues in behavior therapy that point to the need for research on the larger context for behavior problems of individuals. The authors advocate in favor of contextualism as a paradigmatic framework for the analysis of larger social units, and discuss its implications for theoretical analysis and research. They briefly describe the main theoretical concepts of cultural materialism (M. Harris, 1979). These concepts suggest key aspects of the larger context for the environments of individuals needed to manipulate for research on the larger context to help ameliorate or prevent behavior problems. Detailed examples of contextual analyses of tobacco use and childrearing practices illustrate how the present framework can apply to important behavioral and societal problems.

Biglan, A., Glasgow, R.E., Ary, D., & Thompson, R. (1987). How generalizable are the effects of smoking prevention programs? Refusal skills training and parent messages in a teacher-administered program. *Journal of Behavioral Medicine*, 10, 613-628.

Abstract: Investigated substantive and methodological issues associated with school-based smoking prevention programs administered to 3,387 middle, junior high, and high school students. Substantive issues included the efficacy of a refusal skills training curriculum and of parent messages mailed to students' homes. Methodological issues included the effects of assigning classrooms vs. entire schools to experimental conditions and determination of the

effects of attrition on internal and external validity. Results reveal differential impact for different subgroups of adolescents and show that evaluations of smoking prevention programs are limited in external validity.

Biglan, A., Henderson, J., Humphreys, D., Yasui, M., Whisman, R., Black, C. et al. (1995). Mobilising positive reinforcement to reduce youth access to tobacco. *Tobacco Control*, 4, 42-48.

Abstract: *Objective:* To evaluate a community intervention to mobilise positive reinforcement for not selling tobacco to young people. *Intervention:* The intervention had five components: (1) mobilisation of community support; (b) education of merchants; (c) changing consequences to clerks for selling or not selling to those under 18 years; (d) publicity about clerks' refusals to sell; and (e) feedback to store owners or managers about the extent of their sales to adolescents. *Methods:* Two multiple baseline design experiments were conducted, each involving two small communities in Oregon, USA. Stores' willingness to sell was assessed repeatedly by teenage volunteers (aged 15, 16, or 17 years). The intervention was introduced in one member of each pair of communities following three baseline assessments and in the second member, once clear effects were evidence in the first community. *Results:* The intervention significantly reduced the proportion of stores willing to sell and increased the proportion of clerks asking for proof of age. *Conclusion:* Mobilising social and material reinforcement for stores not selling tobacco to young people is a viable means of reducing such sales. The approach may be especially valuable in communities where laws against sales to minors are inadequate or unenforced.

Biglan, A., Hood, D., Brozovsky, P., Ochs, L.M., Ary, D.V., & Black, C. (1991). Subject attrition in prevention research. In C.G. Leukefeld & W. J. Bukoski (Eds.), *Drug abuse prevention intervention research: Methodological issues NIDA Research Monograph 107* (pp. 213-233). Rockville, MD: National Institute on Drug Abuse

Abstract: This chapter discusses the role of subject attrition in substance abuse prevention research. Subject attrition routinely occurs in studies designed to evaluate smoking and alcohol and drug abuse prevention programs. Such attrition may affect the validity of experimental comparisons and may limit the extent to which findings can be generalized to adolescents at highest risk. The authors examine concerns about subject attrition, present methods for analyzing attrition in evaluations of prevention programs, and make recommendations for minimizing the extent and impact of attrition in such evaluations. They also address attrition problems in studies of the prevention of all forms of substance use. However, school-based smoking prevention studies provide the majority of well-controlled research and analysis of attrition issues.

Biglan, A., James, L. E., LaChance, P., Zoref, L., & Joffe, J. (1988). Videotaped materials in a school-based smoking prevention program. *Preventive Medicine*, 17, 559-84.

Abstract: The theory used to frame school-based tobacco use prevention programs is general, and such programs are difficult to replicate. This article seeks to offer a model for prevention videotape production, which other researchers can replicate and improve, and to present an analysis of potential merits and drawbacks of such production. To accomplish these goals, the authors present a detailed description of a school-based prevention program and the videotaped materials used in its curriculum. They delineate theoretical and empirical bases for the project and summarize the study design. The authors present a detailed outline of the multi-grade curriculum program, including the rationale behind critical program

features, a description of specific curriculum strands, and the way in which videotaped materials fit into each strand. They also discuss the rationale for using videotaped materials within the theoretical framework. The authors briefly describe each videotape and set forth an account of video production, a process extending over 4 years, including the student feedback data that helped to shape the production process, formatting, script decisions, casting, location, and the actual filming procedure.

Biglan, A., Metzler, C.W., & Ary, D.V. (1994). Increasing the prevalence of successful children: The case for community intervention research. *Behavior Analyst, 17*, 335-351.

Abstract: Argues for greater research on community interventions on child rearing to facilitate enactment of intervention programs. The authors discuss components of community intervention programs based on existing evidence, including parent training, family support programs, and validated methods of identifying and remediating academic and behavioral problems in schools. Research on the role of community organizing and media campaigns to mobilize allocation of resources necessary to support such parenting and schooling programs as well as encourage their adoption is recommended. The authors describe examples of time-series experimental evaluations of community intervention components.

Biglan, A., Metzler, C.W., Ary, D., Noell, J., Ochs, L., French, C., Hood, D., & Wirt, R. (1990). Social and behavioral factors associated with high-risk sexual behavior among adolescents. *Journal of Behavioral Medicine, 13*(3), 245-262.

Abstract: We assessed 131 8th-12th graders and their parents, and a 2nd sample of 99 8th-12th graders with measures of sexual behavior, problem and prosocial behavior, and family and peer context. Many adolescents reported behaviors (e.g., promiscuity or nonuse of condoms) that risked human immunodeficiency virus (HIV) or other sexually transmitted disease infection. Such risky behaviors were significantly intercorrelated. Consistent condom use was rare among those whose behavior otherwise entailed the greatest risk of infection. In both samples, we found an index of high-risk sexual behavior significantly related to antisocial behavior, cigarette smoking, and illicit drug or alcohol use. Social context variables, including family structure, parenting practices, and friends' engagement in problem behaviors were associated with high-risk sexual behavior.

Biglan, A., Metzler, C.W., Fowler, R.C., Gunn, B.K., Taylor, T., & Rusby, J.C. (1997). Improving childrearing in America's communities. In P.A. Lamal (Ed.), *Cultural contingencies: Behavior analytic perspectives on cultural practices* Westport, CT: Praeger.

Abstract: Focuses on how a science for improving childrearing in American communities might go forward. The authors offer it as an example of one direction the behavioral sciences might take, if behavioral scientists wish to ensure that our knowledge leads to widespread improvements in the human condition. From a behavioral analysis perspective, the sections in the chapter summarize current knowledge about problematic and beneficial family, school, and peer environments. Each section discusses how existing knowledge may grow in each of these areas in order to increase the prevalence of beneficial family, school, and peer environments. Substantial increases in the prevalence of beneficial environments will require changes in the way communities are organized. The chapter concludes by focusing on how researchers might influence community organizations to adopt and maintain practices that would benefit children and families.

Biglan, A., Mrazek, P., Carnine, D.W., & Flay, B.R. (2003). The integration of research and practice in the prevention of youth problem behaviors. *American Psychologist, 58*, 433-440.
Abstract: Increasingly, science guides the prevention of youth problem behaviors. Sound epidemiological research is coming to guide preventive efforts. Valid methods of monitoring the incidence and prevalence of youth problems increasingly shape preventive practice. The identification of empirically supported prevention interventions is more sophisticated, and numerous scientific organizations have begun to engage in dissemination activities. These trends will accelerate with increased media advocacy for the use of scientific methods and findings, the development of a registry of preventive trials, achievement of consensus about the standards for identifying disseminable interventions, and increased research on the factors that influence the effective implementation of science-based practices.

Biglan, A., Noell, J., Ochs, L., Smolkowski, K., & Metzler, C. (1995). Does sexual coercion play a role in high-risk sexual behavior of adolescent and young adult women? *Journal of Behavioral Medicine, 18*, 549-568.

Abstract: The authors examined sexual coercion and its relationship to high-risk sexual behavior in five samples of young women. Sample 1 consisted of 22 sexually active adolescents aged 15-29 yrs. Samples 2 (N = 206) and 3 (N = 70) were patients (aged 14-29 yrs) from 3 sexually transmitted disease clinics. Sample 4 consisted of 51 homeless women aged 13-26 yrs. Sample 5 was 51 college students aged 18-36 yrs. Across all samples, 44.4% of women indicated that they had been forced into some form of sexual activity against their will. Self-reports of sexually coercive experiences occurred consistently in relation to risky sexual behavior. Results indicate that many young women engage in high-risk sexual behavior under coercion. This implies the need for greater attention to male coercive sexual behavior and women's skills for coping with such behavior.

Biglan, A., Rothlind, J., Hops, H., & Sherman, L. (1989). Impact of distressed and aggressive behavior. *Journal of Abnormal Psychology, 98*, 218-228.

Abstract: Two studies examined the hypothesis that distressed behavior induces negative emotions in others but also prompts solicitousness and deters aggression. In Study 1, 48 marital dyads rated various behaviors in terms of their feelings and reactions toward a spouse engaging in each behavior. Distressed behavior prompted both negative and solicitous emotions, but deterred hostile reactions. Aggressive behavior prompted negative feelings and hostile and argumentative reactions. In Study 2, 41 couples rated videotaped examples of a woman engaging in distressed, aggressive, or neutral behavior, with variations in verbal content and nonverbal affect. Examples of distressed behavior prompted more negative feelings and more solicitous feelings than neutral behavior. Aggressive examples prompted more negative feelings and hostile reactions. The studies indicate the importance of distinguishing between distressed and aggressive behavior.

Biglan, A., Severson, H., Ary, D.V., Faller, C., Gallison, C., Thompson, R., Glasgow, R., & Lichtenstein, E. (1987). Do smoking prevention programs really work? Attrition and the internal and external validity of an evaluation of a refusal skills training program. *Journal of Behavioral Medicine, 10*, 159-171.

Abstract: The authors investigated the effects of a smoking prevention program that emphasized refusal skills training on 1,730 adolescents in 3 high schools and 6 middle schools. They also examined the effects of attrition on the internal and external validity of the study. Although the results indicate an apparent effect of the program at the 1-yr follow-

up in deterring continued smoking among those who were smoking at pretest, this result may have been due to a higher rate of attrition among high-rate smokers in the treatment condition than in the control condition. Attrition also affected external validity. Across both conditions, Ss who were smoking at pretest and who were at risk to smoke were more likely to be missing at follow-up. However, the program had an effect on the refusal skills of participants, and differential attrition did not jeopardize the validity of this effect.

Biglan, A., Wang, M. C., & Walberg, H. J. (2003). *Preventing youth problems*. New York: Kluwer Academic/Plenum.

Abstract (from the introduction): This book provides information needed to prevent five of the most common, costly, and dangerous problems of adolescence: anti-social behavior, tobacco use, alcohol and drug abuse, and sexual behavior that risks disease and unwanted pregnancy. Over the past 30 years, scientific research on children and adolescents identified the major conditions influencing each of these problems. The research provides information for designing programs and policies that prevent such problems. We hope that compiling this information in a single volume will foster better use of research findings.

Dishion, T.J., Kavanagh, K.A., Biglan, A., Metzler, C.W., & Soberman, L.H. (1999). Family management curriculum. In T.J. Dishion & K.A. Kavanagh (Eds.), *Adolescent problem behavior: A family-centered intervention and assessment sourcebook*. New York: Guilford.

Abstract (for the book): Dishion and Kavanagh (both of the Child and Family Center, University of Oregon) present a model of adolescent behavior that is "ecological" in the sense that webs of influences are seen as determinants of behavior. After demonstrating the model, the authors describe how to use it to make assessments, conceptualize cases, and design interventions in family-centered settings, schools, and community centers.

Duncan, S.C., Duncan, T.E., Biglan, A., & Ary, D. (1998). Contributions of the social context to the development of adolescent substance use: A multivariate latent growth modeling approach. *Drug & Alcohol Dependence*, 50, 57-71.

Abstract: Analyzed whether changes in parent-child conflict, parental monitoring, associations with deviant peers, or academic failure, predicted the development of adolescent substance abuse via a multivariate latent growth curve method. 664 White, Black, Native American, Asian and Hispanic 14-17 yr olds and their parents were given a questionnaire on substance use, peer deviant behavior, parental monitoring, academic failure, and conflict between parent and child at baseline, and after 12 and 18 mo. Second-order multivariate extensions of the basic latent growth modeling framework suggested that associations among the individual differences parameters, representing growth or change in the various substance use behaviors, could be adequately modeled by a higher-order substance use construct. Results showed that inept parental monitoring, parent-child conflict, peer deviance, academic failure, gender, and age are significant predictors of initial levels and the trajectory of substance use.

Gunn, B.K., Smolkowski, K., Biglan, A., & Black, C. (2002). Supplemental instruction in decoding skills for Hispanic and non-Hispanic students in early elementary school: A follow-up. *Journal of Special Education*, 36, 69-79.

Abstract: This article describes a follow-up study that experimentally evaluated the effects of supplemental reading instruction for children in kindergarten through Grade 3. The authors screened students from 10 elementary schools in three school districts, using the *Dynamic Indicators of Basic Early Literacy Skills*. They identified 256 K-2 students for

participation, then randomly assigned those students to receive or not receive 2 years of supplemental reading instruction that taught basic decoding and comprehension skills. The authors measured reading ability in the fall prior to the first year of the intervention and again in the spring of Years 1, 2, and 3. At the end of the 2-year intervention, children who received the supplemental instruction performed better on measures of word attack, word identification, oral reading fluency, vocabulary, and reading comprehension. One year after the intervention, children in the supplemental instruction group still showed greater improvement in word attack and oral reading fluency than the comparison students.

Gunn, B., Smolkowski, K., Biglan, A., Black, C., & Blair, J. (in press). Fostering the development of reading skill through supplemental instruction: Results for Hispanic and non-Hispanic students. *The Journal of Special Education*.

Abstract: This paper reports the effects of a two-year supplemental reading program for K-3 Hispanic and non-Hispanic students that focused on the development of decoding skills and reading fluency. The authors identified 299 students for participation and randomly assigned them to either the supplemental instruction or a no-treatment control group. The study assessed participants' reading ability in the fall, before the first year of the intervention, and again in the spring of Years 1, 2, 3, and 4. At the end of the two-year intervention, students who received the supplemental instruction performed significantly better than their matched controls did on measures of entry level reading skills (i.e., letter-word identification and word attack) and on measures of oral reading fluency, vocabulary, and comprehension. The benefits of the instruction were still clear two years after instruction had ended. Students in the supplemental condition had significantly greater growth on measures of letter-word identification, word attack, oral reading fluency, and comprehension. Results support the value of supplemental instruction focused on the development of word recognition skills for helping students at risk for reading failure.

Gunn, B., Biglan, A., Smolkowski, K., & Ary, D. (2000). The efficacy of supplemental instruction in decoding skills for Hispanic and non-Hispanic students in early elementary school. *Journal of Special Education*, 34, 90-103.

Abstract: The number of children who speak languages other than English has risen dramatically in the last 20 years and continues to grow. According to Goldenberg (1996), the number of students in the United States who learn English as a second language (ESL) grew from 1.5 million in 1985 to almost 2.7 million in 1992. Hispanic students constitute the largest group of ESL students and are particularly at risk for reading difficulties. In spite of gains in achievement, Hispanic students are about twice as likely as non-Hispanic Whites to be reading below average for their age (Snow, Bums, & Griffin, 1998). Limited English proficiency may be partially responsible for low reading achievement among Hispanic students. However, research suggests that even when learning and testing in their native language, many Spanish-speaking students still attain low levels of achievement (Gersten & Woodward, 1995; Goldenberg & Gallimore, 1991). Educators know little about the value of systematic reading instruction in English for Hispanic students. Some evidence suggests that learning to read in one's native language can lead to higher levels of literacy in both first and second languages (Collier, 1995), but direct tests of the efficacy of teaching reading in English have not been conducted. This study should contribute to the resolution of this important policy issue by examining the degree to which Hispanic students can benefit from supplemental instruction for reading in English. The purpose of this study was to (a) experimentally evaluate the effects of supplemental reading instruction in phonological

awareness and basic decoding skills on word recognition, (b) examine, the degree to which such instruction contributes to growth in oral reading fluency, vocabulary, and comprehension, and (c) examine the utility of teaching Spanish-speaking children decoding skills in English.

Hollis, J.F., Lichtenstein, E., Vogt, T.M., Stevens, V.J., & Biglan, A. (1993). Nurse-assisted counseling for smokers in primary care. *Annals of Internal Medicine*, 118, 521-525.

Abstract: *Objective:* Physician-delivered advice to stop smoking is effective, but time demands often reduce the number of smokers who receive assistance. We evaluated three nurse-assisted interventions designed to minimize physician burden and increase counseling in primary care settings. *Design:* Randomized controlled trial with a 12-month follow-up. *Setting:* Internal medicine and family practice offices in a health maintenance organization. *Participants:* Smokers ($n = 3,161$) who were patients of participating physicians or other medical care providers ($n = 60$). *Intervention:* Medical care providers delivered a 30-second stop smoking prompt to 2,707 smokers and referred them to an on-site nurse/smoking counselor. The nurse/counselor randomly provided a two-page pamphlet (advice control) or one of three nurse-assisted interventions 1) self-quit training; 2) referral to a group cessation program; or 3) a combination of self-quit training and referral. Each nurse-delivered intervention included a 10-minute video, written material, and a follow-up phone call. *Results:* Physicians delivered brief advice to 86% of identified smokers during the 1-year program. The proportion of participants reporting abstinence after both 3 and 12 months of follow-up nearly doubled ($p = 0.01$) for the nurse-assisted self-quit (7.1%), group-referral (7.6%), and combination (6.9%) interventions, compared to brief physician advice alone (3.9%, $p < 0.05$). Saliva cotinine tests confirmed these effects ($p < 0.004$), although quit rates were lower (3.4, 4.7, 4.3, and 2.3%, respectively) because about one-half of quitters chose not to provide a saliva sample; we counted them as smokers. *Conclusion:* Involving nurses in counseling smokers reduces physician burden, makes counseling more likely, and significantly increases cessation rates compared with brief physician advice alone.

Irvine, A.B., Biglan, A., Duncan, T., & Metzler, C.W. (1996). Benefits and barriers for volunteer leaders of a parent training program. *Family and Community Health*, 18, 20-32.

Abstract: Examined the factors that encourage or discourage volunteers to conduct parent training classes. Between 1989 and 1992, the authors trained volunteers to lead parenting skills workshops for parents of elementary and middle schoolchildren in communities in Oregon. We surveyed 380 volunteer-leaders concerning their perceptions of the benefits of, and barriers to, leading the workshops and how those factors related to their intentions to lead future groups. Although the numbers of trained group leaders increased each year, the percentage of trained individuals who had conducted workshops in the 12 months before the survey declined from 82% in 1989 to 42% in 1992. Factors related to the personal cost to the group leader (e.g., competing interests, burnout, fatigue) accounted for 26.1% of the variance of barrier scores, whereas perceived benefits accounted for only 6.8% of the variance.

Irvine, A. B., Biglan, A., Smolkowski, K., & Ary, D.V. (1999). The value of the Parenting Scale for measuring the discipline practices of parents of middle school children. *Behavior Research and Therapy*, 37, 127-142.

Abstract: The psychometric properties of the *Parenting Scale* (Arnold, O'Leary, Wolff, & Acker, 1993), a 30-item instrument originally developed to assess the discipline practices of

parents of preschool children, were examined for parents of middle school students. Subjects were 298 parents of middle school students who had been identified as at-risk for problem behavior. An exploratory factor analysis identified two factors labeled "Over-reactivity" and "Laxness," closely resembling two of the factors found by Arnold et al., but each of these factors contained only six items. Confirmatory factor analyses, using data from the first two assessments, replicated this factor structure. The factors were significantly correlated with measures of parents' behavior, with scales from the Child Behavior Checklist and Parent Daily Reports, and with the Beck Depression Inventory. The Laxness factor was less robust than the Over-reactivity factor.

Irvine, A.B., Biglan, A., Smolkowski, K., Metzler, C.W., & Ary, D.V. (1999). The effectiveness of a parenting skills program for parents of middle school students in small communities. *Journal of Consulting and Clinical Psychology, 67*, 811-825.

Abstract: This study provides evidence of the effectiveness of behaviorally based parenting skills provided by carefully trained and supervised group leaders who were not mental health clinicians. The authors evaluated a program for parents of at-risk middle school students in a randomized controlled trial in 8 small Oregon communities. Parents (N = 303) were randomly assigned to immediate treatment or a wait-list condition. Data were analyzed using latent growth modeling. Participation in the program led to significant improvements in problem-solving interactions as indicated by parent reports and a Taped Situations Test. Parents' over-reactivity and laxness toward their children's behavior decreased and their feelings toward their children improved significantly as a function of treatment. Parent-reported child antisocial behavior also diminished.

Kelder, S. H., Maibach, E., Worden, J. K., Biglan, A., & Levitt, A. (2000). Planning and initiation of the ONDCP National Youth Anti-Drug Media Campaign. *Journal of Public Health Management and Practice, 6*, 14-26.

Abstract: An alarming upsurge in substance use among American youth in the past decade prompted the Office of National Drug Control Policy (ONDCP) to organize the multifaceted, primary prevention National Youth Anti-Drug Media Campaign. The campaign focuses on adolescents (especially ages 11- 13 years), but also targets adolescents' parents and other influential adults. The campaign's main goal is to educate and enable American youth to reject illegal drugs. The purpose of this article is to describe the origin of campaign objectives, processes for the development of specific advertising messages to fulfill these objectives, and how the ONDCP experience could provide a model for other health-oriented media campaigns.

Kistenmacher, B., & Biglan, A. (2000). Decreasing the prevalence of marital conflict: A public health perspective for clinical research. In M.J. Dougher (Ed.). *Clinical behavior analysis* (pp. 245-270). Reno, NV: Context Press

Abstract: Attempts to spell out the case for a public health perspective as it applies to marital discord, focusing in particular on the efficacy and effectiveness of Behavioral Marital Therapy (BMT). Marital discord has many deleterious consequences. Poor marital adjustment is a risk factor for many psychological disorders and may contribute to inadequate parenting that, in turn, contributes to antisocial behavior and other developmental problems in children. Heavily rooted in social learning principles, BMT is the most widely researched and practiced marital intervention. Although there are many variants of BMT, all models involve increasing the reciprocal exchange of positive behaviors, communication

skills training, and problem solving, which includes negotiating and contracting. The authors discuss means of disseminating and delivering BMT and both clinical and non-clinical ways of ameliorating and preventing marital conflict.

Lichtenstein, E., Biglan, A., Glasgow, R.E., & Severson, H. H. (1990). The tobacco use research program at Oregon Research Institute. *British Journal of Addiction, 85*, 715-724.

Abstract: Examines a research program that deals with both adolescent and adult tobacco use. The program is guided by a behavioral framework and emphasizes the role of the social context in tobacco use onset, maintenance, and cessation. Growing appreciation of the importance of social context variables, combined with an emerging recognition of the need for a public health rather than clinical perspective on tobacco use, have led to a focus on interventions in larger social systems such as schools, worksites, health care plans, and communities.

Metzler, C.W., Biglan, A., Ary, D.V., & Li, F. (1998). The stability and validity of early adolescents' reports of parenting constructs. *Journal of Family Psychology, 12*, 600-619.

Abstract: The stability and validity of early adolescents' reports of 6 parenting constructs were examined: parent-child conflict, positive family relations, parental monitoring, parents' rule making, consistent enforcement of rules, and use of positive reinforcement. Hierarchical confirmatory factor analysis (CFA; H. W. Marsh & D. Hocevar, 1988) on questionnaire data from 3 quarterly assessments of 174 5th-7th grade youth was used to test a multitrait-multimethod (MTMM) model containing 6 parenting constructs as trait factors and 3 assessment occasions as method factors. Youths' reports of these parenting constructs were stable over time, and the CFA approach to MTMM data demonstrated convergent and discriminant validity of the constructs. Each parenting construct was significantly correlated with youths' reports of deviant peer associations, antisocial behavior, and substance use, providing evidence of criterion validity.

Metzler, C.W., Biglan, A., Noell, J., Ary, D.V., & Ochs, L. (2000). A randomized controlled trial of a behavioral intervention to reduce high-risk sexual behavior among adolescents in STD clinics. *Behavior Therapy, 31*, 27-54.

Abstract: A 5-session behavioral intervention to reduce risky sexual behavior was evaluated in a randomized controlled trial, in which 339 adolescents (aged 15-19 yrs) were recruited in public sexually transmitted disease clinics and randomly assigned to receive the intervention or usual care. The intervention targeted (1) decision-making about safer sex goals, (2) social skills for achieving safer sex, and (3) acceptance of negative thoughts and feelings. Compared to the control group at 6-month follow-up, treatment subjects reported fewer sexual partners, fewer non-monogamous partners, and fewer sexual contacts with strangers in the previous 3 months and less use of marijuana before or during sex. Treated Ss also performed better on a taped situations test of skill in handling difficult sexual situations. Strongest intervention effects were for male and non-minority youth. Overall, it is stated that important changes in behavior are possible, especially with regard to reducing partner risk, with an individualized intervention targeting adolescents already engaging in high-risk sexual behavior.

Metzler, C.W., Biglan, A., Rusby, J.C., & Sprague, J. R. (2001). Evaluation of a comprehensive behavior management program to improve school-wide positive behavior support. *Education and Treatment of Children, 24*, 448-479.

Abstract: This paper describes the evaluation of a consultative approach to assisting middle

schools in implementing empirically based school-wide behavior management practices. The Effective Behavior Support program involved working with school staff to clarify rules, teach appropriate social behavior, increase positive reinforcement for positive behavior, consistently provide mild consequences for rule violation, and monitor data on student behavior. The intervention was evaluated through records of rewards given, discipline referrals, and frequent surveys of students. Where possible, the authors evaluated data from the target school against data from comparison schools. Results show effects at the target school on increased positive reinforcement for appropriate social behavior and on decreased aggressive social behavior among students. Discipline referrals significantly decreased for 7th graders and for harassment among males. Students' perceptions of school safety improved at the target school but not at comparison schools. Students' reports of experiencing physical or verbal attacks the previous day diminished at the target school as well, but these changes were also seen at the comparison school.

Metzler, C.W., Noell, J. W., Biglan, A., Ary, D.V., & Smolkowski, K. (1994). The social context for risky sexual behavior among adolescents. *Journal of Behavioral Medicine, 17*, 419-438.

Abstract: Tested the G. R. Patterson et al (1992) model of adolescents' risky sexual behavior (RSB) in which this behavior is seen as a product of the same peer and family factors that influence a wide range of problem behaviors. The model was tested on 3 independent samples of 609, 131, and 99 adolescents (all aged 14-28 yrs). Ss completed the Scale of Sexual Risk-Taking and family and peer context questionnaires. Ss whose peers were reported to engage in diverse problem behaviors were more likely to engage in risky sexual behavior. Poor parental monitoring (PPM) and parent-child coercive interactions were associated with having deviant peers. PPM also had a direct relationship to RSB. Family involvement was associated with fewer parent-child coercive interactions. Less availability of parental figures in the family was directly associated with RSB and was also associated with PPM.

Metzler, C.W., Noell, J., & Biglan, A. (1992). The validation of a construct of high-risk sexual behavior in heterosexual adolescents. *Journal of Adolescent Research, 7*, 233-249.

Abstract: Tested the development and construct validation of 2 measures of high-risk sexual behavior, Scale of AIDS (acquired immune deficiency syndrome) Risk and Scale of Sexual Risk-Taking, in 3 samples totaling 873 heterosexual adolescents (aged 14-28 yrs). It was hypothesized that specific risky sexual behaviors, such as nonuse of condoms and multiple partners, would be interrelated and that the cluster of high-risk sexual behaviors would be correlated with measures of other adolescent problem behaviors. The interrelationships among specific sexual behaviors were consistent across the 3 independent samples, and the composite sexual behavior measures were correlated with measures of other problem behaviors. Results support the validity of a construct of high-risk sexual behavior and point to the need for interventions that target diverse risky sexual behaviors.

Metzler, C.W., Taylor, T.K., Gunn, B.K., Fowler, R.C., Biglan, A., & Ary, D.V. (1998). A comprehensive approach to the prevention of behavior problems: Integrating effective practices to strengthen behavior management programs in schools. *Effective School Practices, 17*, 8-24.

Abstract: Children's antisocial behavior is the result of a complex set of factors and requires solutions that encompass the family, peers, and community organizations, in addition to the school. This paper describes steps that schools can take to strengthen their behavior

management programs by ensuring that families and students who might most benefit are reached by effective programs to assist them and by involving community organizations in the implementation of a comprehensive behavior management approach. Parent training (and other parenting resources for families), social problem-solving training, mentoring, and after school programs for students all have the potential for reducing levels of problem behaviors over and above the effects of schools' behavior management programs. Empirically supported exemplars for parent training and social problem-solving skills training are presented. Where research is more limited, the authors describe promising approaches based on the best available evidence (e.g., communications to parents about effective parenting, mentoring, and after school programs). The authors discuss strategies for how schools and the larger community might incorporate these programs into a comprehensive approach to the prevention of problem behaviors and emphasize the need for empirically based practices, since many popular approaches to handling problem behavior are ineffectual or—worse—harmful.

Murray, D.M., Rooney, B.L., Hannan, P.J., Ary, D.V., Biglan, A., Botvin, G. J. et al. (1994). Intraclass correlation among common measures of adolescent smoking: Estimates, correlates and applications in smoking prevention studies. *American Journal of Epidemiology*, *140*, 1038-1050.

Abstract: Most adolescent smoking prevention studies employ designs in which classrooms, schools, school districts, or sometimes whole communities are assigned to treatment conditions while observations are made on individual students. The critical design feature in such community trials is the nesting of intact social groups within treatment conditions. This combination requires that the treatment effect be assessed against the between-group variance; unfortunately, that variance is usually larger than for randomly constituted groups and its precision is usually less than that for the within-group variance. These factors often combine to reduce power so that it is almost impossible to detect important treatment effects in an otherwise well-designed and properly executed study. To address these problems, investigators need good estimates of the intraclass correlation for the variables of interest, which together with the number of observations per unit determine the magnitude of the extra variation in the nested design. The purpose of this paper is to describe the methods and results from a study designed to generate estimates of intraclass correlation for common outcomes in adolescent smoking prevention studies and to discuss the use of these estimates in the planning of new studies.

Noell, J. W., Biglan, A., Berendt, J., & Ochs, L. M. (1993). Problematic sexual situations for adolescents: Alcohol and unsafe sex. *Health Values*, *17*, 40-49.

Abstract: Analyzed the situations involving sex that 130 adolescents (aged 15-29 yrs, 57% male) view as problematic. Girls primarily mentioned birth control, pregnancy, condom use, violence, unwanted advances, use of alcohol, and rape. Boys primarily mentioned use of condoms, birth control, acquisition of condoms, non-use of condoms, pregnancy concerns, request for the use of condoms, and use of alcohol. Fewer than 25% of the Ss mentioned concerns about STDs, including HIV/AIDS. Ss who included alcohol as part of the problematic situations were more likely to describe a variety of problems, including sexual assault (girls) and non-use of condoms (boys).

Noell, J., Biglan, A., Hood, D., & Britz, B. (1994). An interactive videodisc-based smoking cessation program: Prototype development and pilot test. *Computers in Human Behavior*,

10, 347-358.

Abstract: Describes the development and pilot testing of an interactive videodisc-based (IVD) smoking cessation program (SCP) for use in outpatient medical settings. The potential advantages of IVD programs in changing high-risk behaviors are discussed. The methods used to develop the IVD program are described. In a pilot test, 27 subjects were referred to IVD-SCP by their primary care providers. Following intervention, 19 Ss set a quit date. However, of the 14 subjects contacted again, none was abstinent at the 3-month follow-up. Determining the extent to which IVD can deliver stand-alone interventions effectively will require a larger scale trial of the system.

Severson, H. H., & Biglan, A. (1989). Rationale for the use of passive consent in smoking prevention research: Politics, policy, and pragmatics. *Preventive Medicine, 18*, 267-279.

Abstract: The empirical evaluation of school-based smoking prevention programs requires a broad sampling of subjects who are exposed to treatment or control conditions. The low base rate of ongoing smoking among young adolescents, the slow increase in smoking rates, and concerns about the representativeness of samples make it imperative that assessment of smoking and drug use include almost all students. Positive consent procedures outlined by regulations for the protection of human subjects (Department of Health and Human Services. Code of Federal Regulations. Part 36: Protection of Human Subjects. #45 CFR 46, 1983) require parental permission for minors to participate in a research project. However, those subjects at highest risk to smoke are least likely to have parental consent for such a project. Low participation rates and subject selection bias are serious threats to the external validity of studies that use a positive consent procedure. With passive consent, parents respond only if they wish to withhold consent: a nonresponse is interpreted as approval of their child's participation. The subject retains the right to consent or decline participation. Four criteria must be met to waive the requirement of positive parental consent. The passive consent procedure, as used in smoking prevention research, meets those criteria. Data are presented that support the use of this procedure. Research is recommended to examine how consent procedures can affect the results of prevention studies.

Severson, H. H., Glasgow, R., Wirt, R., Brozovsky, P., Zoref, L., Black, C., Biglan, A., Ary, D., & Weissman, W. (1991). Preventing the use of smokeless tobacco and cigarettes by teens: Results of a classroom intervention. *Health Education Research, 6*, 109-120.

Abstract: The purpose of this study was to evaluate the efficacy of a school-based smokeless tobacco (ST) and cigarette smoking prevention/cessation program. This multi-component intervention program was delivered by regular classroom teachers or same age peer leaders, and was presented to intact classrooms in randomly assigned schools. The program emphasized refusal skills training. A total of 2,552 students in 13 middle schools and 9 high schools began the study and 1,768 were assessed at 1-year follow-up. The intervention had a beneficial effect of reducing ST use among males, especially at the middle school level. Analyses failed to reveal a positive intervention effect on cigarette smoking. Attrition analyses revealed few problems with internal validity, but strong and consistent differences between subjects available for follow-up assessment and those not assessed. These results provide limited support for the efficacy of the ST intervention program, but also suggest the need for different types of intervention programs capable of impacting a larger percentage of high-risk adolescents.

Smolkowski, K., Biglan, A., Barrera, M., Taylor, T.K., & Black, C. (in press). Schools and homes in partnership (SHIP): Long-term effects of a preventive intervention focused on social behavior and reading skill in early elementary school. *Prevention Science*.

Abstract: This paper reports a randomized controlled trial of the effects of behavioral parenting skills training, social skills training, and supplemental reading instruction on the social behavior of early elementary school children (K through 3). We selected children based on teacher-rated aggressive behavior or reading-skill deficits, delivered the intervention over a two-year period, and obtained follow-up data for two additional years. The intervention affected only two of eight measures of child functioning—Parent Daily Reports of antisocial behavior and parent ratings of coercive behavior. There was evidence that parents of boys in the intervention condition displayed significantly greater declines in their rated use of coercive discipline than did parents of boys in the control condition.

Smolkowski, K., Biglan, A., Dent, C., & Seeley, J. (2004). *The multilevel structure of four adolescent problems*. Manuscript submitted for publication.

Abstract: This paper examines variability in adolescent self-reported behavior at the individual, cohort, and school levels separately for eighth and eleventh graders. In particular, we examine the extent to which schools vary reliably after controlling for cohort with four adolescent behaviors: substance use, antisocial behavior, depression, and school grades. The data were collected as part of the Oregon Healthy Teens survey of over 60,000 adolescents over three years in 71 communities. The results indicate that schools vary over time, but not necessarily systematically, and grade-level cohorts account for important variance within schools. The school and cohort, however, accounted for at most 4% of the overall variance. The results have important implications for research and practice in schools and communities. For example, selection of communities for interventions based on high levels of adolescent problems may be unproductive because individuals accounted for at least 96% of the variance. Furthermore, in non-experimental designs cohort variability may account for apparent improvement across years.

Taylor, T.K. & Biglan, A. (1998). Behavioral family interventions for improving childrearing: A review of the literature for clinicians and policy makers. *Clinical Child and Family Psychology Review*, 1, 41-60.

Abstract: This paper reviews evidence that behavioral family interventions are effective at improving childrearing in distressed families and families with children exhibiting disruptive behavior. The authors identify essential therapeutic strategies offered within a collaborative therapeutic process. They also identify exemplary materials for parents and clinicians. The authors highlight differences between behavioral family intervention and two popular press parenting approaches, including the lack of empirical support for these widely used programs and the advice they offer which runs counter to behavioral approaches. Recommendations are offered for combining behavioral family interventions with other empirically supported approaches, promoting more widespread use of empirically supported treatments, such as behavioral family interventions, and the need for a public health perspective on family functioning, involving collaboration among clinicians, policy makers, and researchers.

Taylor, T. K., Eddy, J. M., & Biglan, A. (1999). Interpersonal skills training to reduce aggressive and delinquent behavior: Limited evidence and the need for an evidence-based system of care. *Clinical Child & Family Psychology Review*, 2, 169-182.

Abstract: Reviews all randomized controlled trials evaluating interpersonal skills training programs as an intervention to reduce conduct problems in children and adolescents. Research shows that such programs have weak empirical support as isolated interventions. The authors describe an alternative evidence-based system of care. Such a system would include behavioral parent training and behavioral classroom-based interventions for young children at risk of developing problems, as well as multisystemic family therapy or multidimensional treatment foster care for chronic delinquents. Within such a network of services, interpersonal skills training could play an important supportive role. Such a system holds the greatest promise for reducing the prevalence of aggressive and delinquent behavior in communities.

Vogt, T.M., Lichtenstein, E., Ary, D.V., & Biglan, A. (1989). Integrating tobacco intervention into a health maintenance organization: The TRACC program. *Health Education Research, 4*, 125-135.

Abstract: Describes the Tobacco Reduction and Cancer Control (TRACC) program, a 5-project, NCI-funded program of research that involves the design, implementation, and evaluation of a variety of tobacco intervention approaches embedded into the daily operations of a large health maintenance organization (HMO). The study authors designed the interventions to be low intensity; they are brief, relatively inexpensive, consistently and immediately available over time, and applicable to a variety of individuals and settings. The projects separately evaluate approaches to tobacco use in medical offices, dental offices, the hospital, and worksite, and also mail/interview contacts with adolescent smokers. TRACC will deliver those approaches found effective to the entire membership of the HMO to reduce smoking rates to 15% of adults.

Weissman, W., Glasgow, R.E., Biglan, A., & Lichtenstein, E. (1987). Development and preliminary evaluation of a cessation program for adolescent smokers. *Psychology of Addictive Behaviors, 1*, 84-91.

Abstract: Used a within-S design with multiple baseline and changing criterion elements with 11 "hardcore" adolescent smokers. Subjects who achieved target carbon monoxide (CO) levels in expired air breath samples received monetary rewards. Five of the six male subjects successfully reduced their smoking and CO levels during a gradual-reduction phase and eventually quit smoking. One of these subjects resumed low-level daily smoking and the other four subjects generally maintained abstinence during a 5-month maintenance/fading and follow-up phase. In contrast, all five of the female subjects dropped out at some point during the program.

Wulfert, E., & Biglan, A. (1994). A contextual approach to research on AIDS prevention. *Behavior Analyst, 17*, 353-363.

Abstract: Discusses the dominant social-cognitive theories that have been used to predict and understand AIDS-risk behavior (ARB). The usefulness of a behavior-analytic approach to stem the spread of HIV infection is evaluated and the philosophical differences underlying cognitive and behavioral approaches that are embedded in mechanistic vs. functional contextualistic principles are discussed. It is argued that to alter the future course of the epidemic the behavioral sciences must move beyond describing cognitive and attitudinal correlates of ARB and focus on the social context of the behavior of individuals. Population-wide changes in ARB can be accomplished if research focuses on how to influence larger social systems (e.g., the media, school systems, community organizations).

To illustrate the value of adopting the goal of prediction and influence, behavior-analytic research on the social context of risky sexual behavior in adolescents is described.