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## Evolving Prosocial and Sustainable Neighborhoods and Communities

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### Abstract

In this chapter, we review randomized controlled trials of community interventions to affect health. The evidence supports the efficacy of community interventions for preventing tobacco, alcohol, and other drug use; several recent trials have shown the benefits of community interventions for preventing multiple problems of young people, including antisocial behavior. However, the next generation of community intervention research needs to reflect more fully the fact that most psychological and behavioral problems of humans are inter-related and result from the same environmental conditions. The evidence supports testing a new set of comprehensive community interventions that focus on increasing nurturance in communities. Nurturing communities will be ones in which families, schools, neighborhoods, and workplaces (a) minimize biologically and socially toxic events, (b) richly reinforce prosocial behavior, and (c) foster psychological acceptance. Such interventions also have the potential to make neighborhoods more sustainable.

### Keywords

Community intervention; prevention; prosocial behavior; nurturing environments (nurturance if it can only be one word); sustainable

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This review examines experimental research on community interventions. Effective community interventions can have a major impact on reducing the prevalence of mental disorders, improving healthy development, and expanding clinical psychology beyond individual and group treatment.

Behavioral scientists have made considerable progress during the past 40 years. They have built a large corpus of empirical evidence about the factors that support or perturb human development, and community interventionists have begun to apply that knowledge to efforts to improve human wellbeing in entire communities. At the same time, innovations in statistical and experimental methods have made it possible to assess the impact of community interventions much more precisely than was previously possible.

Nonetheless, community intervention research remains far short of its potential for improving human wellbeing. Community psychology grew out of clinical psychology in the 1960s, prompted by the development of community mental health centers and the recognition that community conditions influence the psychological problems of individuals. It was recognized

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that clinical interventions alone are unlikely to address those problems adequately (Dalton et al. 2001, Rappaport 1977). The public health perspective, which has as its central goal reducing the incidence and prevalence of disease (Biglan & Smolkowski 2002), has also influenced community intervention research.

Thus far, most experimentally evaluated community interventions have focused on one or two outcomes, such as tobacco or alcohol use, but have failed to build on the evidence that most psychological and behavioral problems are interrelated and stem from the same basic environmental conditions (e.g., Biglan et al. 2004, Flay 2002, Kessler et al. 2005). The evidence indicates that it is possible to develop and evaluate community interventions to reduce the incidence and prevalence of multiple, interrelated problems and increase the prevalence of prosocial behavior. The evidence further indicates that such interventions must increase the prevalence of home, school, neighborhood, and work environments promoting social behavior while they decrease the prevalence of coercive interactions in these environments.

Even these goals do not fully define our aspirations for community intervention research. The increase in global warming and the energy crisis demand that we find ways to live together that greatly curtail our energy use. This will require that neighborhoods become places to live, work, produce, and recreate sustainably (Leyden 2003). Superficially, such a goal may seem far removed from issues of “mental health.” However, global warming is likely to have a substantial impact on psychological wellbeing. If neighborhoods are to be sustainable, people must live, work, and recreate in close proximity to each other. As we argue below, this will require that neighborhoods be full of prosocial people caring for each other and minimizing the aversive conditions that harm psychological wellbeing and often produce internalizing and externalizing problems. If community intervention research can contribute to the evolution of this type of living, it may prove to be its most important contribution.

## Randomized Trials and High-Quality Quasi-Experimental Evaluations of Community Interventions

This section reviews randomized trials of community interventions. We have grouped the programs based on the substance or problem behavior that each intervention targets.

### Alcohol Control Research

**Interventions targeting youth**—Project Northland (Perry et al. 1996, 2000, 2002) and Communities Mobilizing for Change on Alcohol (Wagenaar et al. 2000) were randomized controlled trials (RCTs) examining the effectiveness of community interventions aimed at preventing underage alcohol consumption.

Project Northland was a two-phase social-environmental and individual behavior change intervention focused on delaying onset of underage alcohol use. Phase I occurred in grades six through eight and included direct action community organizing, youth action teams, print media regarding healthy norms about underage drinking, parent education and involvement, and classroom-based social-behavioral curricula. Phase II occurred during grades 11 and 12, focused on changing local policies requiring Responsible Beverage Service training, and encouraged merchants to employ an incentive program offering discounts to students who pledged to stay free of alcohol and drugs.

Communities Mobilizing for Change on Alcohol focused on reducing underage alcohol access by transforming community policies and practices (e.g., decreasing the quantity of alcohol outlets selling to youth; reducing youth access to alcohol from noncommercial sources such as parents, siblings, and peers; and altering cultural norms amenable to underage consumption of and access to alcoholic beverages). Intervention communities formed teams composed of

local public officials, enforcement agencies, alcohol merchants and merchant associations, the media, and schools. Intervention activities included increased law enforcement regarding underage sales, provision of information to parents, and changes in community events to make alcohol less accessible to underage youth.

Both studies reported significant results. In Project Northland, youth in the intervention communities reported significantly reduced alcohol use in the past week and past month, less peer influence on behavior, and improved attitudes and normative beliefs regarding alcohol use at the end of Phase I (Perry et al. 1996). Youth not consuming alcohol at the start of the project reported significantly less alcohol, marijuana, and cigarette use at the end of eighth grade, compared with similar youth in the control condition. Youth engaging in substance use before the intervention showed no effect, however. Intervention effects diminished during tenth grade, but Phase II intervention efforts appeared to counteract the decay (Perry et al. 2000). Increases in alcohol use and binge drinking in intervention schools were significantly less than in control schools at the end of twelfth grade (Perry et al. 2002). The intervention communities noted a significant reduction in commercial access.

Communities Mobilizing for Change on Alcohol reported lower levels of outlet sales, and slightly lower restaurant and bar sales, to underage youth in the intervention communities compared to control communities. Young adults ages 18 to 20 reported being less likely to try purchasing alcohol and to provide alcohol to others. They also reported lower rates of alcohol consumption during the past 30 days compared to the control community young adults. This age group demonstrated no effects concerning the prevalence of heavy drinking, nor were there significant effects on the drinking behaviors of twelfth-grade students. Arrests for driving under the influence of alcohol declined significantly more for 18- to 20-year-olds in the intervention communities than for those in the control communities (Wagenaar et al. 2000).

**Interventions aimed at youth and adults**—The Community Trials Project (Holder et al. 1997) was a controlled trial examining the effectiveness of community interventions aimed at reducing alcohol-related injuries and death among all ages. Intervention components of the project included (a) community mobilization, (b) Responsible Beverage Service, (c) increased DWI enforcement and perceived risk of drunken driving detection, (d) decreased underage access, and (e) reduction of alcohol availability by means of local zoning and other municipal controls of outlet number and density. The authors examined effects by comparing three intervention and three matched control communities in Northern and Southern California and South Carolina. Results demonstrated significant reductions in the intervention communities of nighttime injury crashes, crashes in which the driver reported to “have been drinking,” assault injuries observed in emergency medical facilities, and assaults requiring hospitalization. The authors also reported a reduction in reported driving after “having had too much to drink” and when “over the legal limit.” A significant reduction in problematic alcohol use appeared, even though the drinking population increased slightly during the course of the study. There was a decline in average number of drinks per occasion and in the variance in drinking patterns, an indirect measure of heavy drinking (Holder et al. 2000). Additionally, experimental communities had a significantly greater reduction in alcohol sales to underage youth, and off-premise alcohol outlets were half as likely to sell to minors compared to control communities.

Saving Lives (Hingson et al. 1996) focused on decreasing the occurrence of alcohol-impaired driving and related driving risks through the use of media campaigns, business information programs, speeding and drunk driving awareness days, speed-watch phone hotlines, police training, high school peer-led education, Students Against Drunk Driving chapters, and college prevention programs. Using a quasi-experimental design, the authors found statistically significant reductions in self-reported drinking and driving, automobile-related injuries, total

fatal accidents, and alcohol-related automobile fatalities among 15- to 25-year-olds in intervention communities compared to control communities.

More recently, Hingson et al. (2005) used a quasi-experimental design to examine the outcomes of comprehensive community interventions aimed at reducing alcohol-related fatal traffic crashes. Five communities received Fighting Back grants by the Robert Wood Johnson Foundation to implement communitywide interventions focused on decreasing substance abuse and related problems by reducing the availability of alcohol and expanding substance abuse treatment programs. The project matched program communities with control communities in the same state based on demographic composition and population size. Data collected from 10 years pre- and postintervention revealed significant declines in alcohol-related fatal crashes in intervention communities as compared to control communities.

The Sacramento Neighborhood Alcohol Prevention Project attempted to reduce alcohol access, drinking, and related problem behaviors in two low-income, predominantly ethnic minority communities. The multicomponent environmentally based prevention program targeted individuals aged 15 to 29 through a series of neighborhood-level interventions, including community mobilization to support the program, awareness building, Responsible Beverage Service, underage access law enforcement, and intoxicated patron law enforcement. In a quasi-experimental trial, the program provided the intervention to two Sacramento neighborhoods. Significant reductions emerged in police-reported assaults, aggregate emergency medical services (EMS), EMS assaults, and EMS motor vehicle accidents (Treno et al. 2007).

### **Tobacco Control**

Sowden and Stead (2003) reviewed 17 controlled trials that compared the effectiveness of multicomponent community interventions aimed at preventing youth tobacco use to no intervention, single-component, or school-based programs. Intervention components varied across studies. Predominant strategies included school-based and mass media components, parent involvement, and community action/activities. Of the studies reviewed, six implemented random assignment of schools or communities and 13 compared community interventions to no-intervention controls. Of these, two were part of a cardiovascular disease prevention program and showed lower smoking prevalence. Out of nine studies, two (Perry et al. 1994; Vartiainen et al. 1998) reported decreased smoking prevalence in the intervention communities compared to no-intervention controls. Three studies compared community interventions with school-based-only interventions, with one study (Biglan et al. 2000) reporting reductions in the intervention group relative to the control. Pentz et al. (1989a) compared a community intervention to a media-only program and reported reductions in the community intervention group compared to the media-only control. In another study, Piper et al. (2000) compared two similar community interventions with a standard health education control group. Relative to the control group, one intervention revealed decreased smoking prevalence while the other demonstrated increased smoking prevalence. Finally, Kaufman et al. (1994) compared a comprehensive community intervention to one that did not include a school-based component and found no differences between the groups; however, smoking prevalence in both groups demonstrated significant declines from baseline. Overall, the authors found some limited evidence supporting the effectiveness of coordinated, multimodal community intervention programs in helping prevent tobacco use in young people.

Project SixTeen is an example of a multimodal community intervention trial aimed at preventing youth tobacco use (Biglan et al. 1988b). By random assignment, eight Oregon communities received an intervention that included classroom-based prevention curricula, media advocacy, youth antitobacco activities, family communication activities, and a systematic campaign to reduce tobacco sales to underage youth; another eight schools received classroom curricula only (i.e., Project PATH; Biglan et al. 1988a). At one- and five-years post

intervention, communities receiving the comprehensive intervention showed a significantly lower prevalence of cigarette use compared to those receiving the school-based intervention alone. At two years, ninth-grade boys in the comprehensive intervention, compared to those in the school intervention, reported lower use of smokeless tobacco. Over a span of four years, alcohol and marijuana use increased less rapidly in intervention communities than in the school-only communities.

### Substance Use

The Midwestern Prevention Program (MPP; Pentz et al. 1989c) was a drug prevention program targeting students in sixth and seventh grade. The program included a classroom curriculum, parent training, education of community leaders on developing drug abuse prevention task forces, and a media campaign focusing on prevention policies and practices. MPP schools and delayed-intervention schools viewed media campaigns and school and community policy initiatives. MPP intervention schools received the comprehensive intervention, which included the classroom curriculum and parent training.

A quasi-experimental trial of MPP took place in Kansas City with high-risk and general population samplings of youth. At one-year follow-up, students in the intervention conditions reported significantly lower increases in cigarette, alcohol, and marijuana use in the week prior. At two-year follow-up, smoking effects persisted, and the prevalence of heavy and light smoking was affected equally (Pentz et al. 1989b). Ninth- and tenth-grade students in the MPP condition demonstrated lower carbon monoxide measures (which are higher in smokers) compared with students in control groups (Pentz et al. 1989a). Johnson et al. (1990) found the intervention equally effective for both high- and low-risk youth. The program was more effective for seventh graders than for sixth graders.

An RCT in a subset of the Kansas City schools revealed significantly less tobacco and marijuana use in MPP schools than in control schools. Effects were not significant for alcohol use. Post hoc analyses found that private and parochial schools contributed largely to positive intervention effects (Chou et al. 1998). Data from MPP schools revealed that students who reported any drug or alcohol use during the month before baseline showed significant declines in reported substance use during the past month more than three-and-a-half-years post baseline (Chou et al. 1998). Data also showed significant declines in cigarette, alcohol, and marijuana use at all follow-ups. Further analyses depicted limited effects for baseline marijuana users and, over time, diminishing effects for early alcohol and cigarette users. It seemed that curriculum adherence and rate of student exposure to the curriculum, as reported by teachers, was significantly associated with lower rates of almost all reported alcohol, tobacco, and marijuana use 18 months post baseline (Pentz et al. 1990).

In an evaluation of community coalitions implementing evidence-based programs in Vermont, Flewelling et al. (2005) examined the effects of initiating a comprehensive blend of evidence-based prevention practices aimed at reducing substance use and prevalence among adolescents. Twenty-three Vermont communities received funding for three years to develop coalitions formed to select and implement a combination of research-based prevention tactics. The quasi-experimental trial assessed problem behaviors of students in eighth through twelfth grades. Statewide assessments using the Youth Risk Behavior Survey (e.g., Cent. Disease Control Prev. 2008) occurred biennially for six years. Data revealed that, compared with nonintervention communities statewide, those implementing evidence-based strategies had greater reductions in youth substance use prevalence for all nine substances measured.

An analysis of Fighting Back by Hallfors and colleagues is important to note because it concluded that a common component of community interventions—community coalitions—did not produce the widely expected effects. Hallfors et al. (2002) investigated the outcomes



of 12 communities participating in Fighting Back, a federal program aimed at building community coalitions focused on reducing substance abuse in youth and adults. They analyzed Fighting Back communities based on the type of interventions selected, the degree to which the communities implemented the interventions, and intervention effects. For analysis, they coded and ranked intervention implementation and outcomes by site and compared intervention dose to outcomes. Data revealed no effects for interventions aimed at youth or community outcomes; interventions aimed at improving adult outcomes demonstrated significant negative effects over time when compared with matched controls. Community coalitions using a more comprehensive selection of interventions did not demonstrate greater benefits. Increasing the frequency of high-dose interventions revealed a significant negative effect overall.

### Interventions Targeting Multiple Problems

Communities That Care (CTC; Hawkins & Catalano 1992) implemented evidence-based programs targeting a wide range of teen problems including substance use, school dropout, violence, and pregnancy. CTC consisted of stages, the first of which was creating coalitions of community leaders. Once established, members received training in assessing community risk and protective factors. After coalitions identified and prioritized risk factors, they selected the most pertinent empirically supported programs and oversaw their implementation. In an RCT, the Community Youth Development Study evaluated CTC by assigning 24 communities to receive or not receive the program. Students completed assessments annually for three years starting in fifth grade. At the last (seventh-grade) assessment, CTC communities were lower than controls on targeted risk factors and on a measure of delinquency initiation (Hawkins et al. 2008); however, analyses showed no differences on substance use initiation.

The Prosper program used a community-based partnership model to address youth risk reduction, competence building, and positive development. In a randomized trial, Spoth and colleagues (2007) assigned 28 small communities in Iowa and Pennsylvania to receive either normal programming or the intervention, which included selecting and implementing parenting and school-based prevention programs. Intervention communities formed school/community teams with the responsibility to select, implement, supervise, and sustain the prevention programs. Each community selected the Strengthening Families Program for the parenting component (Kumpfer et al. 1996). For the school-based component, four communities selected Life Skills Training (Botvin 1985), four implemented Project Alert (Ellickson 1985), and six chose All Stars (Hansen et al. 1991). Pennsylvania State University and Iowa State University extension services provided program training and consultation. The parenting program took place during the spring term of sixth grade. The same students received the school-based curriculum during seventh grade. At 18-month follow-up, students in intervention communities were doing significantly better than those in the control communities on measures of substance use (e.g., lifetime use; initiation of use; past month cigarette use; and past year drunkenness, marijuana use, or inhalant use).

Aban Aya (Flay et al. 2004) tested a community intervention and a social skills curriculum to prevent violence, substance abuse, and unsafe sex among early adolescents. By random assignment, 12 high-poverty African American schools in Chicago received one of three interventions. The first was a social skills curriculum especially designed for African American adolescents, with 16 to 21 lessons each year focused on social competence. The second intervention (school/community) added the following to the curriculum: (a) in-service training of teachers and staff; (b) a local task force that developed policies, conducted schoolwide fairs, sought funds for the school, and conducted field trips for parents and children; and (c) parent training workshops. The third intervention was a health-education control condition. Among boys, both the social skills curriculum and the social skills plus community intervention affected the rate of increase in violent behavior, provoking behavior, school delinquency, drug

use, and recent sexual intercourse. Both interventions also affected an increase in condom use. On a combined behavioral measure, the school/community intervention was significantly more effective than the social skills intervention. Segawa et al. (2005) showed that the effects were due to changes in one-third of the boys who had been at highest risk. The program showed no effect on girls, who in general had lower rates of problem behavior. A later paper suggests that the difference in effectiveness was not significant, at least for violence (Jagers et al. 2007).

Positive Parenting Program (Triple P) focused on decreasing the incidence of behavioral and emotional problems among preteens. The multilevel parenting and family support program aimed to enhance parental competence throughout entire communities. Its developers tailored the intervention to each family's individual needs. The five program levels ranged from media-provided information on effective parenting practices to concentrated multisession interventions (i.e., brief therapy, home visits, mood management strategies, and stress-coping skills). In a meta-analysis, Thomas and Zimmer-Gembeck (2007) found moderate to large effects concerning parenting competency and disruptive child behaviors, as reported by parents. Additionally, direct observation of children whose families received the highest level of intervention revealed significant effects on child behaviors.

Prinz and Sanders (2007) reported the results of a randomized trial in which they assigned 18 counties to receive or not receive Triple P. In intervention counties, they trained more than 600 service providers to provide various levels of services and conducted a media campaign. The intervention produced significant reductions in substantiated child maltreatment, child out-of-home placements, and child maltreatment injuries. The study is the first of its kind to show effects on abuse in an entire population.

## Conclusion and Critique

This body of work represents considerable growth in the ability to assist communities in reducing some of the most significant problem behaviors of youth. Nonetheless, the results are limited.

First, replication is generally lacking. With the exception of the work on Triple P, only one study has evaluated each of these interventions. In the case of the alcohol interventions, similarities exist among some interventions (e.g., community mobilization and publicity about alcohol control) that provide some encouragement that these efforts will produce replicable results.

Second, most of the studies focus on outcomes relevant to one problem, such as tobacco or alcohol use, or substance use in general. Prosper, CTC, Aban Aya, and Triple P focus a bit more broadly on problem behavior and seek to alter key environmental influences on problem development. However, the scope of the behaviors and environments they address is still limited.

Third, the research tends to ignore interrelationships among multiple problems. Although the researchers target and assess alcohol, tobacco, or all substances, most do not measure the impact of interventions on antisocial behavior, depression, anxiety, risky sexual behavior, or academic achievement; perhaps appropriately so, given that the interventions were not designed to affect these targets. Nonetheless, the evidence is overwhelming that these problems are interrelated (Biglan et al. 2004, Boles et al. 2006). Certainly not every youth who smokes is depressed, but many are. Trying to excise smoking from a constellation of other problems through interventions targeted at only that behavior ignores numerous other influences on the behavior (Flay 2002, Flay & Petraitis, 1994). For example, using data from Project SixTeen, Forrester and colleagues (2007) found that poor grades predicted that adolescents would become more

susceptible to taking up smoking and then actually to smoke two years later. Practices that improve academic performance could help to prevent smoking.

Some studies sought to alter key environmental influences on development. Prosper, Triple P, and CTC help families become less coercive and more reinforcing, skills that parents can apply to support development of diverse prosocial behaviors. However, none of the interventions sought to change patterns of interactions beyond families. For example, they did not seek to increase cooperation among neighbors and none targeted important contextual conditions, such as poverty and economic hardship, for families and neighborhoods (Aber et al. 2003, Costello et al. 2003).

The studies reviewed here also showed that RCTs and high-quality quasi-experimental evaluations of community interventions are possible. It seems likely that there will be an increasing number of randomized trials as policymakers and community members begin to understand their value and feasibility better.

Another type of experimental design could be more productive and efficient. Interrupted time-series designs involve obtaining repeated measures on outcomes of interest in a small set of neighborhoods or communities (Biglan et al. 2000). It is then possible to implement an intervention in one neighborhood or community and examine its impact on the measured outcome. Evidence that the intervention affected the outcome comes from a change in the level or slope of the outcome in the entity receiving the intervention and no change in the outcome in comparison entities (e.g., Biglan et al. 1995, 1996). The two most important advantages of this strategy over RCTs are that they require fewer communities and enable the incremental improvement of the intervention strategy, both in one community and across multiple ones (Biglan et al. 1995, 1996).

In sum, extant experimental and quasi-experimental research on community interventions show that it is feasible to do rigorous research on communitywide interventions and possible to reduce the prevalence of important youth problem behaviors. This line of research will likely produce a growing set of tools for improving communities' wellbeing. However, we think that the progress made thus far justifies an expansion of the scope of this work. In the remainder of this review, we describe a framework that might guide further research.

## **A Philosophical Framework for Community Intervention Research**

Behavioral scientists seldom discuss the goals and assumptions underpinning their work. Fifty years ago, such discussions enlivened the field (e.g., Koch 1959). Today, behavioral scientists typically proceed with their empirical work as though there is universal agreement about the nature of the scientific enterprise. Yet, a variety of goals, assumptions, and criteria can motivate scientific work; the framework organizing such work has consequences for whether our science serves human wellbeing.

### **A Public Health Framework**

A public health perspective loosely guides community intervention research. Public health evolved out of desperate efforts to control epidemic diseases (Biglan 2003, Biglan, under review, Rose 1985). When the plague killed a third of Europe's population between 1348 and 1354, it was easy to see that reducing the incidence and prevalence of infectious disease should be a high priority. The goal-oriented effort to affect incidence and prevalence has slowly been generalized to other diseases, such as cancer and heart disease, and then to risk factors for these diseases, such as cigarette smoking (Biglan, under review). At its most basic, the public health orientation prompts us to identify problems to target based on their incidence, prevalence, and



deleterious effects on human beings. It is quite pragmatic in seeking ways to affect targeted outcomes.

The implication of this perspective for community intervention research is that we should be concerned with whether community interventions contribute to reducing the incidence and prevalence of community problems. Which problems do we mean? One could simply target all common and costly diseases and psychological and behavioral problems. However, as we discuss below, we think that research from multiple disciplines points to a core set of sociobehavioral processes with fundamental significance for human wellbeing.

### **Functional Contextualism**

A second feature of our framework is functional contextualism (Biglan & Hayes 1996, Hayes 1993), which is one version of the philosophy of pragmatism (James 1907, Pepper 1942). For pragmatists, the truth of an analysis lies in its ability to help the analyst achieve a goal. The goal for functional contextualism is the identification of variables that predict and influence the phenomena that concern us. This orientation flows naturally from a desire to affect incidence and prevalence. Research that does not identify manipulable variables that affect incidence and prevalence will be of limited value in achieving public health goals. The orientation is also relevant to the study of the behavior of individuals. In studying behavior, one can adopt the goal of identifying manipulable variables that affect the probability or frequency of behavior. This orientation has been vital to the progress made in clinical psychology over the past half-century (Kazdin 1978).

The other feature of functional contextualism is its focus on understanding how events evolve in relation to their context. This orientation is also central to ecological thinking (Bronfenbrenner 1986, Dishion & Patterson 2006) and evolutionary theory (e.g., Wilson 2003, 2007). It places our analysis of individual and group actions within the context of the larger processes of biological and cultural evolution and provides a framework for integrating biological and behavioral science analyses of human behavior. Whether we are studying the behavior of an individual; the actions of a group; or the practices of an organization, neighborhood, or community, we will ask what consequences the phenomenon produces and how those consequences affect the subsequent likelihood of the phenomenon. The orientation also prompts us to look for larger functional classes. Are there multiple phenomena with the same or related functions? If so, we may be able to account parsimoniously for large classes of phenomena. This would be an outcome dear to the heart of most scientists because it enables principles of great power and scope.

### **A Values-Oriented Science**

Science may seem to be purely objective and values free (Kincaid et al. 2007). It is certainly true that statements about relations among variables should be reliably and accurately based on the actual relationships and not on what one may wish were the case. However, it is another thing entirely to suggest that scientists simply pursue knowledge without any guidance from a system of values. At a minimum, scientists value accuracy and reliability.

Both functional contextualism and the public health perspective involve values. The value in public health is human wellbeing, whereas the value in functional contextualism is prediction and influence. Thus, we value prediction and influence in the service of human wellbeing. This is not an arbitrary combination. If we are interested in fostering human wellbeing, we are necessarily concerned with strategies that predict and influence it. Only if we pinpoint modifiable variables to influence wellbeing can we hope to affect it.

We are not saying, however, that this is the one true set of values. There is no basis for making such an assertion. Others might choose other values. However, if you value human wellbeing, a science that values prediction and influence is more likely to advance your values.

### Defining Neighborhood and Community

Despite voluminous research on neighborhoods and communities, the definitions of these terms remain murky. As is common in the behavioral sciences, there is a tendency to define neighborhoods and communities topographically. For example, one can define a community in terms of its geopolitical boundaries, and in many communities, explicit boundaries define the neighborhoods (Duncan et al. 2002, 2003, Sampson et al. 1997). For many purposes, such structural or topographic definitions are quite useful. For example, in Portland, Oregon, neighborhoods have defined boundaries, and the city has organized delivery of all city and social services within these neighborhoods.

However, functional definition may be more fruitful for building an effective science of neighborhood and community intervention. Functional definitions were critical to the development of a successful science of behavior. Early behaviorists had trouble with defining behavior. Should we analyze behavior in terms of the smallest muscle movements? When should we consider that two behaviors were the same or different?

B. F. Skinner (1972) solved this problem through what we would now call a functional contextualist approach. He argued that the purpose of scientific analysis is prediction and control. From this perspective, we should organize our analysis of behavior in terms of the relationships between what an organism does and the antecedent and consequent events reliably related to it. Whether we consider two actions of one organism as the same behavior is a question of whether those actions relate to the same antecedent and consequent events. We break down behaviors into smaller units or group them into larger units based on what works to allow effective prediction and control.

At a higher level, Skinner's goal of improving the human condition motivated him to analyze behavior for the purpose of prediction and control. He argued (although many rejected it at the time) that an effective science of human behavior could contribute to improving human wellbeing. The success of treatment and prevention research has justified his claim (e.g., Biglan et al. 2004).

Applying this analysis to neighborhoods and communities, we should be looking for patterns of individual and collective behavior that cohere in the sense that they function to achieve some outcome. We are not seeking to define what a neighborhood is, but rather to find patterns of individual behavior and interaction patterns that relate functionally to potentially manipulable consequences.

In what follows, we argue that a pattern of prosocial behavior that involves cooperation, caring, volunteering, and helping tends to socialize young people to this same type of behavior and to self-regulated behavior essential to successful development. Neighborhoods and communities where such behavior predominates have lower levels of crime and have other benefits for youth and adults who live in them. From this perspective, we might increasingly define neighborhoods in terms of the extent to which people living in a defined geographic area cohere in this pattern of behavior. Certainly, topographic definitions of neighborhoods would be essential for initial research on prosocial neighborhoods, but ultimately, the research would focus on how to foster and maintain neighborhoods already high in prosociality.

## Prosocial and Coercive Behavior and the Environments that Produce them

It is useful to organize our thinking about human behavior in terms of two broad and distinct repertoires. We might call one prosocial behavior and the other coercive behavior. We suggest that these two broad repertoires encompass the most important aspects of human social behavior and that we can understand them in terms of two distinct types of ecological contexts. The analysis provides a framework for organizing further research in communities. We may be able to prevent diverse problems and achieve multiple benefits by increasing the prevalence of environments that promote prosocial behavior and decreasing the prevalence of environments that lead to coercive behavior.

It may seem implausible to think of human behavior in terms of only two broad classes. We suggest that this is because most behavioral—and biological—scientists who deal with human behavior focus narrowly on a few behavioral patterns. This mechanistic and compartmentalized approach to science obscures the functional similarities among sets of behavior-context relationships. From a pragmatic perspective, these patterns of thought obstruct development of broad principles that could be useful in dealing with most problems that humans confront.

### Coercive Behavior

The evidence is overwhelming that diverse psychological and behavioral problems are interrelated. Biglan et al. (2004) provide a comprehensive review of the evidence. Aggressive social behavior; delinquency; tobacco, alcohol, and other drug use; risky sexual behavior; and depression constitute the most common and costly problems among adolescents. When these problems occur among adults, they typically begin in adolescence (Biglan et al. 2004). Others have discussed this phenomenon in terms of “comorbidity” (Kandel et al. 1999) and deviance proneness (Jessor 1987). However, the tendency for funded research to focus on one or a subset of these problems has obscured the significance of this co-occurrence for prevention and treatment. Perhaps more importantly, the functional similarities among these behaviors and the environments that produce them remain overlooked. We submit that all of these problems involve coercive behavior and stem from coercive social environments.

**The origin of coercive behavior in social interactions**—Gerald Patterson and colleagues at Oregon Social Learning Center conducted seminal work on coercive behavior (e.g., Patterson et al. 1992). Much of the work focused on the development of aggressive behavior among children. Through careful direct-observation analyses of family interactions, Patterson and colleagues (1992) showed that aggressive behavior develops in a context of coercive family interactions.

Coercion involves one person behaving in an aggressive or otherwise aversive manner that influences others to cease their own aversive behavior. Aversive behavior is simply behavior that others are motivated to terminate. An aversive environment is one with high rates of aversive events. In such an environment, it is likely that coercive processes in which one person's aversive behavior is effective in producing brief respites from others' aversive behavior maintain much of the aversive behavior.

As an example of a coercive process, a parent might criticize a child and the child might react with anger. If the parent then stops their criticism, it reinforces the child's angry behavior; the child is learning to use anger to stop others' unwanted behavior. Moreover, if the child then stops being angry, this may reinforce the parent for ceasing their criticism. Patterson et al. (1992) showed that families with aggressive children have family members who frequently criticize, tease, complain, punish, or attack each other. They documented “bouts” of coercive exchange in which family members behave in these aversive ways toward each other. Such bouts end when one family member escalates his or her behavior and the other person backs

off. For example, two siblings may be teasing each other until one explodes and hits the other, who then stops teasing. Through frequent bouts of this sort, the child and other family members learn to behave aversively in order to get others to back off. The work at Oregon Social Learning Center documented how such commonplace coercive exchanges lead directly to the development of children's coercive repertoires. The children learn to handle the aversive behavior of others by getting angry, hitting, yelling, or throwing tantrums.

Aggressive young children bring their coercive repertoires to school, where often they develop even further their tendencies to deal coercively with others. A teacher asks an aggressive child to do something, the child whines or complains, and the teacher backs off. A playmate has a desirable toy and the aggressive child pushes the other child away from it.

Coercive behavior is more likely in environments in which others behave aversively. It is in these settings that coercive acts like getting angry, hitting, whining, and complaining are useful for controlling the aversive behavior of others. Thus, aggressive social behavior is more common in schools with frequently coercive students and teachers. Schools that fail to establish clear rules, that fail to reinforce prosocial behavior, that use harsh and inconsistent discipline practices, and that allow bullying and teasing contribute to the development of the coercive repertoires of their students (Kellam et al. 1998, Rusby et al. 2005, Walker et al. 1995).

We are not suggesting that coercive behavior is necessarily deliberate or premeditated. It is frequently simply reacting to others' aversive stimulation—their criticism or attack. The key thing is that it continues by its occasional benefit in getting others to cease their aversive behavior.

In a series of studies, Dishion, Patterson, and colleagues (Dishion & Patterson 2006; Dishion et al. 1991, 1994) and Walker et al. (1995) showed how children with coercive repertoires, who are in schools that do not minimize coercion, tend to experience social rejection and develop friendships with similarly rejected children (Dishion et al. 1994). These peer groups become the “training ground” for diverse problem behaviors including delinquency and tobacco, alcohol, and other drug use (Patterson et al. 2000). Dishion and colleagues showed that deviant peers reinforce each other's deviant behavior and that this process predicts later problem behavior (Dishion et al. 1999). Dishion found that such interactions predicted arrests two years later (Dishion 2000). Capaldi and colleagues (Capaldi & Clark 1998, Capaldi et al. 2001) found that peer reinforcement of negative talk about women predicted coercive interactions in young men's interactions with their female partners two years later. In related work, Biglan et al. (1995) found that sexual coercion was a major influence on young women engaging in risky sexual behavior.

We can further understand the importance of these processes by experimental evaluations in which reductions in coercive processes have appeared to mediate the impact of parenting interventions. For example, Martinez and Forgatch (2001) conducted a randomized trial of parenting-skills training for single mothers of elementary school sons. The intervention led to a significant reduction in coercive discipline and a significant improvement in positive parenting. Both of these changes mediated the effects of the intervention on boys' noncompliance. Subsequently, Forgatch, Patterson, DeGarmo, and Beldavs (In press) found that the intervention resulted in reductions in teacher-reported delinquency and documented arrests and that improvements in mothers' parenting mediated this effect.

Patterson and colleagues (1976) argued that coercive processes are also involved in marital discord. A couple's negative interactions increase when repeated aversive behavior of each partner is reinforced by brief reductions in the rates of the other's aversive behavior. Much subsequent research has documented the relationships of these coercive interactions to marital

discord and divorce and the benefits of helping couples find less coercive ways to interact (Gottman 1982, 1993; Gottman & Krokoff 1989; Gottman & Porterfield 1981).

Biglan and colleagues (1988) extended the analysis of coercive behavior to depression. They found that others find depressive behavior aversive (Biglan et al. 1989) and that depressive social behavior is negatively reinforced. Specifically, when depressed women behaved in a depressed manner, other family members were less likely to act aversively (Biglan et al. 1985, Hops et al. 1987).

In sum, there is a broad range of behaviors that develop because they are useful in reducing others' aversive behavior. The roots of this process are in evolution. Organisms that counteraggressed when attacked were a bit more likely to survive. Similarly, organisms that seemed reinforced when others' attacks ceased were better able to learn to cope with a dangerous, frequently aversive world. To the extent that we allow young people to develop in environments marked by high levels of aversive behavior, we will continue to produce children who are themselves coercive.

The evidence, then, points to the need to reduce the levels of aversive behavior in families, schools, neighborhoods, and indeed in all settings of society. A concern with reducing the coercive behavior of individuals leads us to a concern with reducing the prevalence of coercive environments in which people learn to use aversive behavior frequently to control each other.

Families are more likely to be coercive—and to produce coercive children—when they feel stressed. Both ongoing poverty and the occurrence of economic crises increase parents' coercive behavior toward their children (Conger et al. 1995). Family poverty contributes to children's academic, behavioral, and psychological problems (McLoyd 1998), and it undermines parenting (Conger et al. 1994, Dodge et al. 1994, NICHD Early Child Care Res. Netw. 2005). Financial strains, such as recent unemployment, reduces parents' positive involvement with their children and increases their criticism of and arguing with them (Gutman et al. 2005). Such parenting contributes to diverse academic, psychological, and behavioral difficulties (Elder et al. 1985, Gutman et al. 2005, Weatherburn & Lind 2006).

In this context, it is important to remember that the United States has the highest rates of families with children living in poverty of any developed nation (UNICEF 2007). As a matter of public health, the most important—and most efficient—way to prevent development of coercive behavior among young people may be to reduce family poverty.

Poverty doubtless increases stressful events, such as evictions, conflicts with neighbors, and difficulties with government agencies. In a classic study, Robert Wahler (1980) showed that poor, socially isolated mothers were more likely to behave harshly toward their children on days they experienced stressful encounters outside the family.

Aversive neighborhoods also contribute to coercive behavior. For example, Sampson et al. (1997) studied a large sample ( $N = 343$ ) of Chicago neighborhoods and examined correlates of crime. They assessed concentrated disadvantage (including the poverty rate, public assistance rate, unemployment rate, percent of the population that was black, and percent of female-headed households), the residential stability rate, and the extent of immigrant concentration. Each measure predicted perceived neighborhood violence and self-reported violent victimization. Concentrated disadvantage and residential stability predicted the homicide rate in the neighborhood. This is consistent with Patterson et al.'s finding that serious antisocial behavior emerges from a context of frequent low-level coercive interactions (Patterson et al. 1989). In a context in which others frequently reinforce aggressive behavior, some of that behavior will rise to the level of homicide.



Sampson et al. (1997) also found that some effects of these conditions resulted from their impact on collective efficacy. Neighborhoods high in economic disadvantage, residential mobility, and immigrant concentration were also low in collective efficacy. That is, they had little social cohesion and little likelihood that neighbors would intervene on behalf of the common good. Such collective efficacy mediated some of the relationship between neighborhood conditions and crime. The research on coercive processes suggests that neighborhoods that are low in collective efficacy are ones where people are more likely to behave aversively to each other, which makes it difficult to forge cooperative, mutually supportive relationships.

**Coercive behavior from a biological perspective**—Recently, the work described here has begun to converge with work on the biological factors involved in development. From an evolutionary perspective, it is not credible that coercive behavior could be so widespread and persistent in human populations if it had no survival value. Presumably, in some environments such behavior is beneficial. Wilson and Csikszentmihalyi (in press) found that adolescents low in prosociality lived in more stressful environments but experienced less distress in response to stressful events than did prosocial adolescents who were only occasionally faced with such challenges. Presumably, in a stressful environment, being hyperalert and quick to behave aggressively has benefits. This is consistent with the previously reviewed evidence from direct observation of family interactions, showing that both aggressive behavior (Patterson et al. 1992) and depressive behavior (Biglan 1988) have immediate benefits in getting others to cease aversive behavior. One could argue that teaching prosociality to children in stressful environments could be iatrogenic. However, another way of thinking about it is that reducing coercive behavior of individuals requires us to reduce the prevalence of aversive environments.

**Cognitive and verbal concomitants of coercive behavior**—Exposure to aversive environments perturbs young people's thinking. Aggressive children, who have to cope with such environments (Dodge et al. 1994), are more apt to perceive others as being aggressive toward them (Dodge et al. 1990). They may also become experientially avoidant. Experiential avoidance (EA) is a recently identified phenomenon (Hayes et al. 1999) that consists of efforts to control unpleasant thoughts and feelings. Research on EA indicates that it is associated with a broad range of psychological and behavioral problems, including anxiety, depression, substance use, and aggressive social behavior (Greco et al. 2006, Hayes et al. 2004). EA is presumably the psychological concomitant of directly observed tendencies of people in coercive relationships to try to stop another's distressing behavior (Patterson et al. 1992).

In sum, epidemiological, biological, cognitive, and behavioral evidence converge in identifying coercive repertoires as core features in the development of diverse problems including delinquency; tobacco, alcohol, and other drug use; risky sexual behavior; and depression. Just as important is the fact that these repertoires develop in the context of families and schools where coercive interactions are common. A society-wide effort to reduce the prevalence of coercive behavior and the aversive environments that produce it will contribute to preventing the entire range of common and costly problems of adolescents.

## Prosocial Behavior

In contrast to coercive behavior, there is a broad range of cooperative, caring, self-regulated, and supportive behaviors that one might collectively label “prosocial behavior.” The evolutionary biologist David Sloan Wilson writes of it as “prosociality.” He argues that cooperative, altruistic behavior is a key feature of cooperative groups and is vital to the success and survival of human groups. In a recent study, he operationally defined prosociality with an eight-item scale including the items, “I think it is important to help other people,” and “I am sensitive to the needs and feelings of others.” Wilson and O'Brien (in preparation) found that

prosocial adolescents spent more time on homework, energetically pursued goals, and wanted to have children.

**Prosociality and self-regulation**—Another aspect of prosociality appears to be self-regulation. Dishion and colleagues (Dishion & Connell 2006a, Gardner et al. 2008, Wills & Dishion 2004) have presented evidence of its central role in the development of prosocial behavior. They propose that self-regulation is an individual-difference dimension that includes “goal setting, planning, task persistence, and environmental management, as well as modulation of behavioral, emotional, and attentional reactivity” (Gardner et al. 2008). The development of self-regulation is a joint function of temperament and socialization. A core aspect of self-regulation is effortful control—the ability of the young person to inhibit a dominant response (Rothbart & Bates 1998), which is believed to enable one to delay responding in a given context and thereby take goal-directed action (Gardner et al. 2008).

This process stands in contrast to impulsive and risk-taking behavior, common among people who engage in the types of problem behaviors we described above. Dishion and Connell (2006b) reported an analysis of the role of self-regulation in the development of both antisocial behavior and depression. They studied 999 adolescents assessed initially in sixth grade and followed to age 18 or 19. A multi-agent assessment of self-regulation, based on teacher, parent, and adolescent self-report, predicted changes in antisocial behavior at age 19, even when controlling for prior antisocial behavior and peer deviance. However, there was also an interaction indicating that, for those high in self-regulation, association with deviant peers had no relationship to later antisocial behavior. Self-regulation at 16 also showed a relationship to later depression, even when controlling for gender, depression, and stress exposure at 16. Here too, self-regulation moderated the relationship between stress exposure and later depression. Among adolescents low in self-regulation, stress was associated with substantially more depression three years later ( $r^2 = 0.60$ ). However, this was not true among those high in self-regulation ( $r^2 = 0.00$ ).

Prosocial behavior also involves empathy (Hawley 1999). For people to adjust their behavior to the needs of others, they must be able to discern others' needs. Such behavior is less likely to emerge in an environment in which people frequently act aversively with each other than in an environment marked by frequent reciprocity of positive behavior.

Wilson has written extensively about the importance of prosocial behavior in human evolution (Wilson & Sober 2002). He reviews extensive evidence from biological and psychological research showing that many aspects of human biology and behavior facilitate interpersonal coordination and cooperation and that groups are more likely to be successful when their members cooperate.

In sum, there is a constellation of behaviors characterized by good self-regulation, cooperation, caring, and empathy. These behaviors contribute both to individuals' success in social and academic endeavors and to the success of groups to which they belong.

## **Nurturance: Environments that Promote Prosocial Behavior**

Environments that develop prosocial behavior are themselves prosocial. Caregivers are compassionate; abuse and neglect are rare. If we are to create a society that minimizes coercive behavior and promotes prosocial behavior, we must promote prosocial family, school, and neighborhood environments. The best evidence about how to do this comes from prevention and treatment studies. From the prenatal stage through adolescence, there are interventions proven to prevent or ameliorate psychological and behavioral problems (Biglan et al. 2004,

Biglan under review). Both the interventions and the environments they shape involve “nurturance.” We discern three key aspects of nurturance.

First, nurturing environments provide high levels of reinforcement for prosocial behavior. For example, the Nurse Family Partnership (Olds et al. 1986) supports poor mothers during the pre- and postnatal periods. It prevents antisocial behavior even into adolescence. Nurses provide high levels of praise and encouragement for mothers as they take steps to improve their situation and to nurture their baby. Similarly, all the validated behavioral parenting skills training programs teach parents to praise and reward desirable behavior, and parents receive much positive feedback for their efforts along these lines (e.g., Dishion et al. 2002, Webster-Stratton 1984). Wilson and Csikszentmihalyi (in press) found that prosociality among adolescents was associated with self-reports that their teachers cared. Similarly, the bedrock of behavior management systems in schools is using positive reinforcement to increase desirable behavior (Embry et al. 1996, Kellam et al. 1994, Walker et al. 1998).

A second feature of nurturing environments is that they minimize aversive or stressful events. The Wilson and Csikszentmihalyi (in press) study found that prosocial adolescents reported that their family avoided hurting each other's feelings. Parenting skills programs reduce parents' use of criticism and harsh punishment (e.g., Forgatch et al. 2005). They help replace those methods with timeouts, brief loss of privileges, or brief tasks—and large increases in the use of positive reinforcement (Webster-Stratton 2000). None of the interventions involves criticizing clients and, in settings such as schools, where some negative consequences may be in use, they are generally much more mild and limited than those commonly used in those settings. In contrast, programs using harsh aversive consequences (e.g., Scared Straight) have turned out to be ineffective or even harmful (Petrosino et al. 2000).

Acceptance is the third feature of nurturing environments and the interventions that foster them. Interventionists do not confront aggressive parents; rather, they show them more gentle and positive methods of dealing with unwanted behavior (Webster-Stratton 2000). In a motivational interviewing intervention to reduce college students' drinking (Carey et al. 2006), project staff gently questioned the students about their drinking and its consequences and provided tips for changing their behavior—if the students chose to do so. Interventions for those who have negative reactions to trauma help them accept what happened to them, accept the distress they may be experiencing, and move forward in their lives (Batten, Orsillo, & Walser 2005, Orsillo & Batten 2005, Walser & Hayes, 2006). Interventions for families with parental depression receive help in understanding and accepting what is happening and in developing a shared approach to coping with it (Beardslee et al. 2003).

Our belief that acceptance is an important component of nurturing environments is supported by recent research on the benefits of Acceptance and Commitment Therapy (ACT; Hayes et al. 1999). More than 20 RCTs have shown the benefits of ACT for problems as wide-ranging as depression, substance abuse, smoking cessation, diabetes control, hallucinations, epilepsy, and job burnout (Luoma et al. 2007). ACT assists people in accepting unpleasant thoughts and feelings while simultaneously reducing their tendency to take those thoughts literally; people learn to notice their thoughts but not to perceive the world through them. The process involves the therapist accepting the client and the client's thoughts and feelings. Detailed descriptions of the processes that clients go through indicate that they become more empathetic and caring toward others. Apparently, the process of accepting one's own negative thoughts and feelings—but not necessarily believing them—facilitates becoming more accepting toward others' negative thoughts and feelings. Thus, people become better able to communicate and cooperate.

## A Paradigm Shift

Reorienting community intervention research to focus on these two broad classes of behavior and the environments promoting them involves a paradigm shift. This always becomes more difficult by the influences of the categorical thinking inherent in the existing paradigm (Kuhn 1970). However, if our ultimate goal is to improve human wellbeing, it is useful to distinguish these two classes of contextually driven behavior. There are certainly exceptions, but antisocial behavior, depression, risky sexual behavior, and substance use develop in the context of aversive social environments. These behaviors are more likely among youth with biologically driven propensities to be irritable or who are difficult to comfort. Conversely, patterns of cooperative, self-regulated, prosocial behavior arise in nurturing environments that offer high levels of positive reinforcement for desirable behavior, minimize aversive control, and accept the young person.

Consider how this analysis could contribute to both scientific and practical efforts to understand and deal with society's major problems.

- If the most common and costly youth problems arise from the same set of aversive conditions, we may prevent or ameliorate diverse problems by concentrating on the fundamental conditions initiating them. Policies to reduce economic and social stress on families have the potential to prevent many difficulties. Programs that help families cope with stress and that teach and support nurturance can reduce coercive interactions, thus fostering development of prosocial behavior. Policies and programs to ensure schools have the resources, skills, and programs to minimize coercion and to teach and richly reinforce social behavior will prevent youth problems from developing, even for children from suboptimal family environments.
- The scientific value of this generic analysis is that it would shift attention from specific problem behaviors to the contextual conditions that promote aversive or prosocial environments. Rather than studying interventions targeting individual problems, we could focus on interventions to reduce coercive behavior and promote nurturing environments in general. Such work would build on intervention research that has already shown the multiple benefits of increasing nurturance in families (e.g., Chamberlain & Mihalic 1998, Olds et al. 1998, Stormshak & Dishion 2002) and in schools (Brown et al. 2005, Flay & Allred 2003, Kellam et al. 1994, Reid et al. 1999). However, at least with respect to families, the work might place greater emphasis on policies to reduce economic stress, since policies potentially affect many families without the cost of reaching them with specific programs.
- Our “simple” analysis also has value in mobilizing society. Just as media reports of the harmful effects of smoking prompted numerous changes in the cigarette smoking culture, growing evidence of the harmfulness of coercive environments and the value of nurturing social environments could influence society to examine how to reduce coercion and support nurturance throughout society. Policymakers, schools, churches, healthcare providers, criminal justice agencies, and family support agencies could make policies and take actions designed to create and support nurturing environments, minimize aversive methods of controlling behavior, and foster acceptance. How much easier could it be to describe and promote the generic features of nurturance than to mount a specific program in each setting? This is not to say that evidence-based programs should not be disseminated, but if our analysis is right, the generic features of these environments would be increasingly understood by all, and it would become increasingly easy to teach and maintain these practices.

## Implications for Clinical Psychology

As noted above, community psychology grew out of the realization by clinical psychologists that clinical interventions alone could not achieve the ultimate goal of clinical psychology—reducing psychological suffering (Dalton et al. 2001). Creating optimal community environments seemed a way to prevent the development of disorders. The community intervention and epidemiological research described above supports that assertion.

What does this evidence imply for psychology as a profession?

Just as the American Academy of Pediatricians advocates for health policies that its individual practitioners are unlikely to affect, organizations of psychologists can advocate for efforts to increase prosociality. They can inform policymakers and citizens of the importance of prosociality in virtually every venue. They can publicize programs and policies that evidence shows can increase prosociality. They can disseminate information to individuals about all the small steps people can take to promote prosociality (Embry & Biglan 2008).

## Creating Sustainable Neighborhoods

Our analysis of prosocial and coercive behavior indicates that community psychology should contribute to creating neighborhoods and communities marked by high levels of cooperation, caring, and prosocial behavior. Doing so would contribute to the promotion of health and effective psychological functioning and to the prevention of the most common and costly psychological and behavioral problems. However, there is another very timely reason we need a science that promotes prosocial communities: They may be more sustainable.

Impetus for building sustainable communities comes from the environmental problems the world faces if we fail to develop them. Among the problems faced by the global society are resource depletion and climate change due to the build-up of greenhouse gases (Meyer 1996). These developments are having a direct impact on human physical and psychological wellbeing (McMichael et al. 1999).

Addressing these problems requires fundamental changes in the way most people live. Sustainable neighborhoods and communities are one key to these changes. A sustainable neighborhood is one that uses no more resources than it can produce. As understanding of the threat of global warming and resource depletion has grown, innovators have begun to design and build sustainable neighborhoods.

A key aspect of sustainability is urban density. Norman et al. (2006) found that a denser neighborhood uses less energy and emits less greenhouse gas by a factor of 2.0 to 2.5 than a less dense neighborhood does. The Local Government Commission, a nonprofit organization working on this issue, has created a set of principles for resource-efficient communities (<http://www.lgc.org/ahwahnee/principles.html>). The principles call for communities small enough so that “housing, jobs, daily needs, and other activities are within easy walking distance of each other.” In essence, the community and neighborhood become coterminous. Additional desiderata would include:

- A community contains a diversity of housing types to enable citizens from a wide range of economic levels and age groups to live within its boundaries
- The community has a center focus combining commercial, civic, cultural, and recreation activities
- The community has an ample supply of specialized open space (squares, greens, and parks), with frequent use encouraged through placement and design



- The community designs public spaces that encourage the attention and presence of people at all hours of the day and night

Evidence is emerging that many of the features that make neighborhoods sustainable also add psychological benefits. Such mixed-use neighborhoods prompt more physical activity (Saelens et al. 2003) and greater social capital (Leyden 2003). Not surprisingly, these neighborhoods also appear to result in lower levels of children's misbehavior and in better grades (Szapocznik et al. 2006). Neighborhoods with physical organization that facilitates social interaction (e.g., porches and stoops near the street) have higher levels of social support and physical and psychological wellbeing for older residents (Brown et al. 2008).

In addition, if we are going to create neighborhoods in which people live, work, and recreate in close proximity, prosocial people must inhabit them. We noted above that crime is lower in neighborhoods with high collective efficacy (high levels of social trust and willingness to take action on behalf of the common good; Sampson & Bartusch 1998). Neighborhood crime lowers collective efficacy by decreasing trust and social interaction (Duncan et al. 2003). Moreover, collective efficacy is lower in racially mixed neighborhoods, presumably because trusting interactions between members of different groups occur less frequently than they do within those groups. Finally, neighborhoods low in collective efficacy due to poverty, population turnover, and many children per adult have higher rates of child maltreatment (Coulton et al. 1995). Thus, a high priority for community intervention research should be to build social trust and positive interactions through psychological interventions (e.g., Biglan et al. 2008) and modifications of the built environment (e.g., Leyden 2003).

## A Research Agenda

The present analysis points to the ingredients necessary for community intervention research to fulfill its promise of contributing to public health.

### Goals of the Research

The evidence points to the need for a systematic, nationwide effort to build prosociality and sustainability in communities. Thus, the central goal of community intervention research should be to increase the prevalence of neighborhoods high in prosociality and sustainability. There is sufficient evidence that these conditions will have far-reaching benefits for human wellbeing. Research focusing narrowly on interventions to affect one or a few problems would be wasteful and inefficient in comparison. The research should give the greatest weight to developing and conducting experimental evaluations of strategies for influencing neighborhood, family, and school practices to be nurturing

### Measurement of Neighborhood, Family, and School Wellbeing

Federal and state agencies should develop a system for monitoring wellbeing in every neighborhood and community. The use of community monitoring systems is growing because policymakers increasingly understand that accurate and timely information about wellbeing can shape efforts of communities to improve wellbeing (Mrazek et al. 2005).

The ideal monitoring system provides data about the prevalence of both problem and prosocial behavior in each neighborhood. Problems would include all of the costly and common problems of children and adolescents, including substance use, antisocial behavior, risky sexual behavior, depression, and anxiety. Measures of prosocial behavior are less common, but the measures that Scales and Benson (2005) have developed and Wilson and O'Brien (in preparation) are using (cited above) are a good start. These measures are readily available from young people through school-based assessments (Boles et al. 2006). Systems for obtaining them from adults

are less well developed. However, if we are serious about making prosociality a public health priority, we will need to develop systems for monitoring wellbeing among adults.

At the same time, measures must be made of the quality of social environments. What is the prevalence of nurturing (versus coercive) families and schools? What is the level of collective efficacy (Sampson et al. 1997) in each neighborhood? Similarly, we need to assess the contextual conditions that most affect wellbeing, including family poverty, and neighborhood disadvantage and social support.

The system we envision would make the basic information about wellbeing and prosociality available on a website for every community and neighborhood in the country (Mrazek et al. 2005). It would motivate efforts to improve wellbeing and would enable experimental evaluations of strategies for improving wellbeing. Even in the absence of experimental evaluations of intervention strategies, it would enable the selection of more, and more effective, strategies in light of changes observed in wellbeing over time.

The technologies to do this already exist. If such a system seems well beyond current practice, recall that most developed countries obtain huge amounts of data on economic functioning and use it to manage their economies. Similarly, the public health system precisely tracks infectious disease because of the established benefit of doing so for preventing epidemics. Given that the problem behaviors we have been discussing are among the most costly and common problems in society, why should we not use the measurement capabilities we have to guide society toward prevention of these problems?

### Strategies for Building Prosociality

As noted above, most effective preventive and treatment interventions build prosocial environments and minimize coercion. If psychologists and policymakers can implement these evidence-based interventions widely and effectively, it will be a major contribution to building the kinds of prosocial environments needed. Thus, we conceive of systematic efforts to provide parenting interventions in communities that are along the lines of the work of Triple P, Communities that Care, and Prosper. In schools, we envision the implementation of interventions that richly reinforce prosocial behavior. Three such evidence-based interventions are schoolwide Positive Behavior Support, which ensures high levels of positive reinforcement for prosocial behavior (Metzler et al. 2001), and the Good Behavior Game (Embry 2002), which reinforces teams of elementary school children for cooperation and has been shown to have preventive benefits even into adulthood (Petrus et al. 2003), and the school-, family-, and community-wide Positive Action program.

However, given the limitations involved in disseminating evidence-based practices (Biglan under review) additional strategies are necessary for fostering nurturing environments. One such strategy is the dissemination of “kernels.” Kernels are simple behavior-influence techniques (e.g., praise notes, timeouts, and the display of students' work in schools) that have demonstrated a beneficial effect on one or more behaviors (Embry & Biglan 2008). All have undergone experimental evaluation—mostly through interrupted time-series designs. They have not necessarily proven to produce long-term changes in problem outcomes, but they are building blocks for such efforts, as they clearly contribute to increasing appropriate social behavior and minimizing problematic behavior. Most involve increasing reinforcement for desirable behavior; those that focus on negative consequences usually provide people with mild ways of delivering negative consequences. For example, parents, teachers, and other caregivers increasingly are using timeouts in place of harsh means of treating children's misbehavior. The widespread dissemination of kernels could contribute substantially to building prosocial communities.

We might term the second strategy “creative community epidemiology.” Many health habits changed over the past 50 years because of widely publicized evidence of their danger. Examples include cigarette smoking, wearing of seatbelts, drinking and driving, and the consumption of high-fat foods. One of the best-documented examples is cigarette smoking, where tobacco control advocates’ publication of harm caused by smoking directly prompted people to stop smoking and influenced policies that reduced smoking (Natl. Cancer Inst. 2008). Research is necessary on how publicity about coercive and prosocial behavior might influence people’s behavior, even in the absence of more extensive interventions. News stories and media spots could publicize the harm of treating others, especially children, aversively. Advertising could model caring for others, including those who were creating difficulties. All of us could model patience and acceptance widely.

## Toward A Prosocial World

Scientific knowledge typically accrues in small increments. Even behavioral scientists who have conducted research on human behavior over the past 50 years may not appreciate how much we have learned. We now have a wealth of converging evidence from psychology, biology, sociology, and economics illustrating the value and feasibility of creating sustainable prosocial environments that can minimize antisocial behavior, drug addiction, depression, abuse, and most other common and costly psychological and behavioral problems of humans.

Over the past 200 years, science helped to transform the physical world in ways that were unimaginable to citizens of the eighteenth century. We are unaccustomed to thinking of the behavioral sciences as capable of producing similar miracles. However, that may be simply because behavioral science knowledge is only beginning to be widely applied.

Widespread application of our knowledge could transform societies in ways that prove more significant than the changes wrought by the physical sciences. They could eliminate the root causes of psychological and behavioral problems while steering us away from the unsustainable living patterns into which the physical sciences have led us. These developments could prove to be the most important contributions that science makes to human wellbeing.

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