DOCUMENT RESUME

ED 413 155 RC 021 254

AUTHOR Lange, Linda; Bickel, Robert
TITLE Adolescent Stress, Coping, and Academic Persistence in Rural Appalachia: The Unacknowledged Import of Early Adolescent Pregnancy.
PUB DATE 1997-09-00
NOTE 44p.; In: The Many Faces of Rural Education. Proceedings of the Annual NREA Convention (89th, Tucson, AZ, September 24-27, 1997); see RC 021 239.
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Academic Persistence; Birth Rate; Community Characteristics; *Community Influence; *Context Effect; *Early Adolescents; *Early Parenthood; Economic Factors; *Economic Opportunities; *Pregnancy; Risk; School Size; Secondary Education; Social Environment; Social Influences; Traditionalism; Wages
IDENTIFIERS Sense of Community; *West Virginia

ABSTRACT

This paper examines pregnancy in early adolescence, among West Virginia females aged 10-14, as it relates to local economic and social contexts. Although research on adolescent pregnancy is substantial, it is generally limited to the experiences of older adolescents and premised on assumptions of methodological individualism--that the correlates of teen pregnancy can be construed as the characteristics of individual young women, their families, and occasionally their schools. In contrast, this paper suggests that social and economic contextual factors may be of primary importance in determining the incidence of adolescent pregnancy, and that contextual factors that encourage or discourage prudent sexual behaviors (such as perceived future prospects and sense of community) are relevant to younger, as well as older, adolescents. Analysis of data from West Virginia's 55 counties (which are coterminous with school districts) examined relationships of the birth rate among females aged 10-14 to economic opportunity (average job wage and unemployment rate), in-school community (school size), and "traditional" versus modern out-of-school community (a composite variable encompassing rurality, ethnicity, educational attainment, enrollment in college preparatory courses and in college, and extent of service sector jobs). Birth rates to females aged 10-14 were inversely related to job wages and positively related to secondary school size and "modern" community characteristics (those departing from traditional patterns of community organization). Contains 63 references and 4 data tables. (SV)

ADOLESCENT STRESS, COPING, AND ACADEMIC PERSISTENCE IN RURAL APPALACHIA: THE UNACKNOWLEDGED IMPORT OF EARLY ADOLESCENT PREGNANCY

Linda Lange
Juniper Gardens Children's Project

Robert Bickel
Marshall University

National Rural Education Association Research Forum
Tucson, Arizona
September 24-27, 1997

Address correspondence to Robert Bickel, Department of Educational Leadership, 400 Hal Greer Blvd., Marshall University, Huntington West Virginia, 25755-2440, USA.

The adolescent birthrate in the United States is higher than that in any other western, industrialized democracy (United Nations, 1995). As a result, teen pregnancy programs focusing on nominally "at-risk" adolescent females are nearly as commonplace as dropout prevention programs aimed at adolescents of both sexes (Bauch, 1994). Recent journalistic accounts have suggested that such programs may be working, citing an eight percent decline in the teen birth rate between 1991 and 1995 (Charleston [WV] Gazette, 1996: 2A).

The analysis which follows, however, suggests that the effectiveness of conventional pregnancy prevention programs may be limited in ways which typically are not recognized. Specifically, social and economic contextual factors, rather than individual and family traits, may be of primary importance in determining the incidence of adolescent pregnancy. Such contextual factors include the presence or absence of economic opportunities, and the presence or absence of communities which provide a durable sense of membership and valued participation.

In short, prudent behavior, such as avoiding adolescent pregnancy, is most likely to occur when there are organized incentives for being prudent. When opportunity and community are missing, imprudent, seemingly

irrational, even recklessly self-destructive behavior, may be much more common.

This pattern of relationships between social context and behavior, between structure and agency, is not limited to one age group. Specifically, there is no reason to believe that those in early adolescence, aged 10 to 14, are less sensitive to variability in opportunity and community than those aged 15 to 19 (Everhart, 1983; Thompson, 1995). The remainder of our discussion follows from this observation, applying it to early-adolescent pregnancy in the Appalachian state of West Virginia.

ADOLESCENT AND EARLY-ADOLESCENT PREGNANCY

The literature on adolescent sexual activity and pregnancy is substantial (see, for example, Turner and Helms, 1988; Scott-Jones, 1991; Billy and Moore, 1992; Brewster, Billy, and Grady, 1993; Astroth, 1994; Luster and Small, 1994; Thompson, 1995). Almost without expception, however, published research and policy statements on adolescent pregnancy are limited to the lives and experiences of young women aged 15 to 19. Research on early-adolescent pregnancy, involving young women aged 10 to 14, has not been reported.

This is consistent with usual analyses by professional demographers, who rightly judge women's most fertile age range to be 15 to 44 (Marshall, 1994: 179-180). Nevertheless, by proceeding in this way we overlook the fact that a variety of activities and outcomes which were once limited to middle adolescence, late adolescence, and adulthood are becoming more common among younger people (Chumlea, 1982; Brough, 1990; Thompson, 1995).

METHODOLOGICAL INDIVIDUALISM

In addition, conceptual frameworks which organize research on adolescent pregnancy are typically premised on the assumptions which undergird methodological individualism (Carver and Thomas, 1995). The prevailing view, clearly, is that correlates of teen pregnancy can invariably and with little qualification be construed as characteristics of individual young women, their families, and occasionally their schools. Broader contextual factors, the socially varied circumstances of adolescence and early adolescence, are rarely acknowledged. In odd instances when contextual factors are permitted to intrude, moreover, they are typically dismissed as thoroughly tractable forces, quite capable of being controlled if only families are sufficiently functional (West Virginia Department of Health and Human Services, 1996; Bauch, 1994;

for an exemplary exception see Brewster, Billy, and Grady, 1993).

Being "At-Risk"

One conspicuous manifestation of this overweening methodological individualism is ritualistic invocation of the "at-risk" designation. This is especially conspicuous in the literature on educational research and policymaking, where uncritical application of the at-risk characterization is a tacit but ever-present denial of the importance of broader social structural factors. In sociologists' language, agency and its micro-social environment are everything; social structure counts for nothing (Ritzer, 1996: 390-425).

As a result, dropping out of school, teen pregnancy, adolescent drug abuse, all forms of juvenile delinquency and adolescent social distress -- even suicide and homicide -- are reduced to reflections of traits of individuals or characteristics of their families (Shoemaker, 1996: 47-74). Frequently cited at-risk factors of ostensibly general importance include being poor, being African-American or Hispanic, having poorly educated parents, being from a single-parent family, living in a blighted inner city, having a non-English language background, or living

in insular rural isolation (West Virginia Kids Count Leadership Collaborative, 1996; Bernstein, 1992).

A ritualistically invoked correlate, which ostensibly mediates the association between these observable individual traits and reckless behaviors, is self-esteem (Wehlage, Rutter, Smith, Lesko, and Fernandez, 1989). It has become an article of faith that poor self-esteem links observable individual traits to self-defeating acts and outcomes. This is sometimes offered as an important reason why adolescent females are sexually vulnerable to older men (Astroth, 1994).

Being "At-risk" of Sexual Risk-Taking

In view of the foregoing, it is easy to see why conventional accounts of correlates of adolescent sexual activity and its consequences, especially adolescent pregnancy, focus on individual behaviors and family characteristics. Individual behaviors documented as being associated with sexual risk-taking include consuming alcohol, contemplating suicide, negative attitudes toward school, and low grade-point average (Luster and Small, 1994; Russell, 1994).

Family factors generally viewed as contributing to the chances of an adolescent becoming sexually active and at risk of becoming pregnant include lack of parental supervision, strained communication between the child and parents, parental rejection, and sexual or physical abuse (Luster and Small, 1994; Russell, 1994; McCullough and Scherman, 1991). In addition, low socioeconomic status is typically cited as a catalyst for stress in the home and parental nurturing problems, two factors also associated with being at-risk for early sexual activity and pregnancy.

Continuing in the same descriptively useful but atheoretical fashion, adolescents are at greater risk of becoming pregnant if they have mothers with low levels of educational attainment, come from broken homes, or frequently argue with their parents (Hayward, Grady and Billy, 1992; Russell, 1994). Sexually active adolescents from families with these characteristics are especially likely to report irregular or no contraceptive use (Luster and Small, 1994).

In addition, imprudent, perhaps self-defeating sexual behavior is often associated with other manifestations of adolsecent recklessness. Luster and Small (1994) found that sexual risk-takers -- those with multiple partners or infrequent contraceptive use -- also engaged in other risk-taking behaviors, such as smoking marijuana and consuming alcohol.

Similarly, Harvey and Spigner (1995) report that alcohol consumption is the strongest predictor of early and more frequent sexual activity. They concluded that alcohol consumption and sexual activity are both manifestations of an underlying tendency toward sensatibn-seeking, risk-taking, or impulsivity.

As the foregoing suggests, adolescents who are sexually active and at risk of becoming pregnant also manifest imprudence in other ways. These impulsively irrational, even self-destructive at-risk behaviors seem to betoken a denial of interest in future prospects.

Imprudence, irrationality, recklessness -- all this sounds more like a description of a character disorder than behavior interpretable in non-pathological terms (Blau, 1993). Either that or adolescents have made an interpretably rational judgment that social circumstances demonstrate there is precious little in their futures worth safeguarding.

And this is precisely the point. By their very recklessness, adolescents may be showing that, given a reasoned judgment as to their contextually determined prospects, they have little hope for the future.

Consequently, we want to give due emphasis to social context. Rather than focusing exclusively on individual and family factors -- as if individuals and families were autonomous entities, unaffected by contextual factors -- we want to provide a much-needed antidote to methodological individualism by explicitly acknowledging environmental influences.

We want to make clear, moreover, that this same perspective informs our understanding of imprudence, recklessness, and self-destructiveness in early adolescence. In this case, the same contextually determined factors which increase the likelihood of sexual risk-taking leading to pregnancy among those aged 15 to 19 have a similar effect on those aged 10 to 14.

BRINGING CONTEXT BACK IN

Our alternative to unexamined judgments as to the meaning of at-risk designations entails avoiding methodological individualism, recognizing that agency and structure are complementary rather than mutually exclusive, and trying to identify the social circumstances which make self-defeating choices more and less likely. Surely, not all young people who are poor or Black or Hispanic or who belong to a single parent family living in an isolated rural area in a low-income state are equally at-risk. What contextual factors give rise to the connections between

usual at-risk traits and behaviors which seem to irrationally diminish future prospects? Why, as a case in point, do pregnancies occur more and less frequently among females aged 10 to 14?

OPPORTUNITY, COMMUNITY, AND PREGNANCY: AGES 10 TO 14

The key concepts in our alternative perspective are opportunity and community. In this view, most people, including early adolescents, behave in interpretably rational ways. Moreover, when there is reason to be so, they are self-interestedly prudent.

Discerning the interpretably rational nature of the behavior of young people and others, however, requires that we understand the cirucmstances in which they live and make life-course decisions. When economic and other opportunities are abundant and prospects for the future are good, self-destructively reckless behaviors occur less frequently. In the absence of opportunity, however, prudent foresight becomes pointless, and the incidence of seemingly reckless behaviors, such as dropping out, teen pregnancy, and violent death increases.

Similarly, prudence is unlikely to prevail in the midst of social and cultural chaos. Communities which provide every-day opportunities for valued participation in functionally significant ways in culturally stable environments are hopeful places. Young people who belong

today, and who have a realistic expectation of readily assumable occupational, community, and familial roles in the future, have good reason to behave with rationally self-interested prudence. Otherwise, dropping out, teen pregnancy, and other choices inconsistent with comfortable future prospects become commonplace. Why not? Why be prudent in the absence of realistic expectations for a satisfying future?

Related Applications of Opportunity and Community

In earlier work, we applied this perspective in an effort to explain dropping out, pregnancy among women aged 15 to 19, and violent deaths among adolescents of both sexes in the same age group (see Papagiannis, Bickel, and Fuller, 1983; Bickel and Papagiannis, 1988; Bickel 1989a and 1989b; Bickel and Lange, 1995; Bickel, Weaver, Lange, and Williams, 1997; Bickel and McDonough, 1997; also see Cloward and Ohlin, 1960; Stinchcombe, 1964; Willis, 1981). The perspective has evolved, first focusing exclusively on economic and educational opportunity and the social psychological costs of going to school, and subsequently giving equal emphasis to community, both in-school and out-of-school. In addition, identification of proxy variables and ways of measuring these concepts has changed, as we have applied the perspective first to a county-level data

set for Florida, and later to a county-level data set for West Virginia.

Over time, we have sought to achieve consistency in measuring our key concepts, economic opportunity, out-of-school community, and in-school community. Specifically, economic opportunity is now routinely measured with two observed variables, average job wage and average unmeployment rate. Out-of-school community is a composite variable constructed as described below, and average school size is used as a proxy for in-school community.

By specifying our regression models in the same way for different dependent variables, we are standardizing the process whereby we examine the relationships between our measures of opportunity and community, and a variety of seemingly irrational, even self-destructive behaviors. We are asking if the same set of explanatory factors -- our measures of opportunity and community, along with a common complement of controls -- account for a variety of imprudent behaviors.

The 1987 West Virginia data set we have been using facilitates our analyses because West Virginia counties and schools districts are coterminous. As a result, we have measures of aggregated social and economic variables, as well as aggregated school factors, for each county.

Ecological Inference

Clearly, our previous analyses, as well as the one reported below, are exercises in ecological inference. Varying, contextually determined levels of opportunity, out-of-school community, and in-school community must be perceived by individuals for this perspective to work.

But does anyone really believe that young people aged 10 to 14 or 15 to 19 self-consciously interrogate the contexts in which they live to gauge their quality in a systematic, rationally calculable way? Of course not. Therefore, we take this to be an experiential, largely unself-conscious process.

Early adolescents participating in everyday social settings do not systematically collect and analyze archival data on wages and unemployment, nor do they anguish over the strengths and limitations of various proxies and composites for in-school and out-of-school community. They are, nevertheless, rational actors capable of responding to commonsense, more or less valid indicators of future prospects. They perceive, more or less accurately, the structurally determined opportunities and costs, community resources and community deficiencies, which characterize their environments. They unself-consciously refer to

everyday indicators of these factors when they make choices and behave in seemingly prudent or imprudent, rational or irrational ways.

DEPENDENT VARIABLE

Births per thousand females aged 10 to 14 is used as a proxy for pregnancies among unwed females in the same age range. Information concerning the latter variable is not available in the archival sources which we used to construct our data set.

By using births as a proxy for pregnancies, we unavoidably introduce measurement error in the dependent variable. After all, women who become pregnant in one geographical area may change residence and give birth in another area, and not all pregnancies result in births.

One advantage of working with a West Virginia data set, however, is that this state has the lowest rate of abortions per live births in the United States, only twelve percent (Nyden, 1994a). In addition, West Virginia's early adolescent population is largely immobile, unlikely to move from state to state or county to county (Spatig and Bickel, 1993). In these respects, the atypically rural, culturally distinctive, stay-at-home character of the state's population is helpful.

We are assuming, moreover, that measurement error in the outcome measure is random, leaving the partial regression coefficients unbiased, though their standard errors may be inflated (Gujurati, 1995). In view of the fact that we are working with the counties of just one Appalachian state, the assumption of random measurement error in the dependent variable is more plausible than otherwise might be the case (Blalock, 1982: 252-259).

In making this assumption, we are not judging West Virginia's counties to be homogenous with respect to variables of importance. If they were, variables would not vary and our research would be pointless. We are claiming, however, that in spite of pertinent and consequential differences among the state's counties, they are not so dissimilar that, for all practical purposes, they represent different social worlds (see Martinez, 1996; Bernstein, 1992).

INDEPENDENT VARIABLES

As already explained, the independent variables were selected under the tentative assumption that pregnancy among early adolescent females, those aged 10 to 14, can be explained in much the same terms as adolescent pregnancy, among females aged 15 to 19. For someone in the early adolescent group, avoiding becoming pregnant can usefully be construed as a prudent investment in a valued future.

If prospects are much the same whether one becomes pregnant or not, pregnancy in early adolesccence becomes more likely.

Opportunity

In Table 1, the independent variables have been divided into five categories. The independent variables which are intended to reflect prevailing levels of economic opportunity are WAGE and UNEMPLOY. Data is taken from Woods and Poole, 1987, and West Virginia Department of Education, 1987, with age-specific teen pregnancy statistics provided by the Division of Adolescent Health, College of Education, Marshall University.

TABLE 1 ABOUT HERE

TABLE 2 ABOUT HERE

In-School Community

The variable MEANSIZE, referring to average high school, middle school, and junior high school size for each district, is used as a measure of in-school community. Average school size may seem to be an unduly crude proxy for community. It is useful to recall, however, that Bryk and Thum (1989) found strong positive correlations between school size and the incidence of tracking, discipline problems, and staff absenteeism and morale. In addition, Fine (1986) and Stroughton and Grady (1978) reported that school size is directly correlated with dropout rates. This appears to be due to an enhanced sense of satisfaction and involvement in smaller schools (Bernstein, 1992).

Moreover, in our earlier work on dropouts, we found that school size interacted with student/teacher ratio such that the negative relationship between student/teacher ratio and high school completion rate became even more troublesome as school size increased (Bickel, 1989b; Bickel and Lange, 1995; also see Friedkin and Necochea, 1988). Finally, in our analysis of pregnancy in the 15 to 19 age group in West Virginia, as school size increased, the incidence of adolescent pregnancy increased as well (Bickel, Weaver, Williams, and Lange, 1997).

All things considered, school size may be a less-crude proxy for school-as-community than one might at first surmise.

Out-of-School Community

Community as a positive sense of affiliation and valued participation for early-adolescent females is not limited to school settings. In this connection, it is useful to think in terms of the characteristics of traditional West Virginia communities (Bickel, Weaver, Williams, and Lange, 1997).

Geographically they have been small, rural, and isolated. Extended families have persisted. Racially and ethnically they have been homogeneous, made up almost exclusively of native-born whites. Educationally they have been marked by modest levels of attainment. College enrollment rates have been low, and vocational education has been a high school staple, though high school dropout rates have not been higher than the U.S. average (Fitzpatrick and Yoels, 1992). Most work has been in mining, manufacturing, and self-employed agriculture. Permanent migration out of the area in search of improved employment prospects, though not uncommon, has been a near-last resort response to economic necessity (Fleishman, 1994).

We have attempted to capture this dimension or continuum, with traditional community characteristics and non-traditional or modern characteristics as polar opposites, by using principal components analysis with seven variables which follow from this description of West Virgninia communities. These variables are: percentage of the district's population living in urban areas (URBAN), percentage of the district's population which is Black (BLACK), percentage of the district's population which is neither Black nor White (ETHNIC), average level of educational attainment (EDAVG), percentage of high school students enrolled in a college perparatory program (COLLPREP), percentage of students who enroll in a college or university after graduation from high school (MATRIC), and percentage of workers in service sector jobs (SERVICE) (see Bickel, Weaver, Lange, and Williams, 1997; Bickel and McDonough, 1997).

Traditional West Virginia communities would have comparatively <u>low</u> levels on each of these variables (Nyden, 1994a; Bormann and Mueninghoff, 1983). However, as manufacturing industries have relocated, coal mines have been mechanized, and family farms have yielded to large-scale agri-business, social relations constitutive of traditional communities have been superseded by shifting labor market relations (Lewis, Johnson, and Askins, 1978; Fleishman, 1994). The institutions and cultures of traditional communities have, in a real sense, come under

siege. Such processes are typically characterized as inevitable and, for the long term, often claimed to be a desirable part of the process of becoming modern (contrast Inkeles and Smith, 1974, with Blau, 1993)

Whether or not these characterizations are accurate, areas where traditional norms, practices, and social relations no longer prevail, having been replaced by nominally modern alterntives, would be likely to have higher values on the seven variables constituting our out-of-school community composite.

If the seven variables merit interpretation as indicators of the presence or absence of traditional community characteristics, all seven would load heavily on the same principal component, and all would have the same sign (Stevens, 1993). Negative signs would correspond to the presence of traditional community characteristics. Positive signs would correspond to the absence of traditional characteristics.

TABLE 3 ABOUT HERE

In Table 3, the first principal component, here labeled FACTOR 1, explains 46.4 percent of the variation in the set of variables which we are construing to be indicators of the presence or absence of traditional patterns of community social organization and composition in West Virginia counties. Further, we see that each of the seven variables loads heavily and positively on FACTOR 1.

We will rename this factor MODERN, and use it as a proxy for the decline of traditional communities -- departures from or the relative absence of out-of-school community. Consequently, we expect the incidence of early-adolescent pregnancy to vary directly with factor scores on this component (Petee and Kowalski, 1993).

The second component, labeled FACTOR 2, does not lend itself to substantive interpretation, and explains only 17.6 percent of the variation in the set of seven variables. None of the other components have eigenvalues of one or greater, and they have been deleted.

Given that the first component seems legitimately understood as representing departures from traditional patterns of community organization, while the other components explain very little of the variation in the data and are difficult to intepret without needlessly introducing ambiguity and uncertainty, we will use only the first component in subseqent analyses. This is consistent with Kennedy's (1992: 185) judgment that most of the distinctive variance in a data set is usually captured in the first principal component .

EARLY ADOLESCENCE AND PREGNANCY IN WEST VIRGINIA

In Table 4 we have used births per thousand females aged 10 to 14 in fifty-four of West Virginia's fifty-five counties as the outcome meaure. One county, Raleigh, was deleted as a speciously influential observation (see Chatterjee and Price, 1991: 86-91). The difference between the county's actual and predicted values on the dependent variable yielded a residual more than twice as large as any of the others. The independent variables with and without statistically significant regression coefficients were the same whether or not the county was included. However, the numerical values of the coefficients were attenuated, and the standard error of the estimate was inflated when the county was retained (see Lunneborg, 1994: 228-235).

All independent variables in the regression equation are defined in Table 1, with means and standard deviations reported in Table 2. Recall, however, that URBAN, BLACK, ETHNIC, EDAVG, COLLPREP, MATRIC, and SERVICE are represented in the regression analysis as one independent variable, the principal component MODERN. The independent variable MODERN, thus, is a linear composite of the original seven variables, weighted so as to maximize the sum of their squared correlations with the principal component (Dunteman, 1989).

Three of the independent variables, average job wage (WAGE), average secondary school size (MEANSIZE), and the composite variable representing departures from traditional community patterns (MODERN), work as expected. WAGE and the incidence of early adolescent pregnancy vary inversely. This is consistent with the claim that females in early adolescence who live in areas where economic opportunites are comparatively lucrative are more likely to perceive incentives to behave prudently and avoid pregnancy. When opportunities -- future prospects -- are comparatively limited, incentives to avoid early adolescent pregnancy and otherwise behave prudently are missing.

Some might argue that the relationship between the dependent variable, BRTHRATE, and the independent variable WAGE is merely a manifestation of variability in counties' socioeconomic character, and is only very tenuously related

to opportunity, as we have used that concept. Notice, however, that this statistically significant relationship holds even though our regression equation contains a control for average socioeconomic status in the form of average household income (HOUSEINC). This increases the plausibility of our interpretation of the relationship between WAGE and BRTHRATE as manifesting district-to-district variability in real and preceived economic opportunity.

TABLE 4 ABOUT HERE

The statistically significant and positive coefficient corresponding to MEANSIZE indicates that, from district to district, the average number of students per middle school, junior high school, and high school, and the rate of early adolescent pregnancy rise and fall together. This is consistent with the claim that, as schools become larger, they also become less able to provide a sense of valued participation in a socially and culturally stable community, and early adolescent pregnancy becomes more likely. Young women who have a valued place and positive sense of affiliation with their peers are less likely to become pregnant (Campbell and Lee, 1992).

Further, the variable MODERN, the first principal component, also has a positive and statistically significant regression coefficient. As the values of the factor scores for MODERN increase, the early adolescent birth rate, our proxy for early adolescent pregnancy, also increases. MODERN, again, represents departures from traditional patterns of community organization. Our provisional claim is that the decline of opportunities for community membership and participation, out of school as well as in school, increases the social psychological costs of everyday life while offering no compensating payoff. As we would expect, factor scores for MODERN and early adolescent birth rates rise and fall together.

LIMITATIONS

The regression coefficients corresponding to WAGE, MEANSIZE, and MODERN are consistent with our perspective on the place of opportunity and community in early adolescents' decision-making processes. However, the variable UNEMPLOY did not work as expected. While the coefficient is positive, it is not statistically significant. Bernstein (1992) reported similarly unexpected results with this variable in his Pennsylvania dropout research. What are we to make of this?

Substantively appealing concepts such as opportunity and community are often difficult to operationalize. In this instance, moreover, we are invoking these concepts as they manifest themselves in largely unself-conscious fashion in the decision-making processes of early adolescents. To complicate matters further, we are making inferences from aggregated data to individuals.

Though the UNEMPLOY variable did not give the expected results, the opportunity and community perspective still seems valuable. Our regression results, all tolled, remain compelling. We have demonstrated substantial explanatory power, and we have been able to avoid the atheoretical, exploratory empiricism of so much of the literature which follows from invocation of the at-risk designation. However, it is clear that our analysis does not tell the whole story, and remaining conceptualization, measurement, and specification problems cannot be facilely dismissed.

Nevertheless, as an alternative to explanations which ignore contextual factors, and too often result in victim-blaming, the opportunity and community perspective is quite informative. Our results are even more compelling when we recall that this same perspective, at various stages of development, has also been useful in accounting for county-to-county variability in dropouts, pregnancy among females

aged 15 to 19, and violent death rates among adolescents age 15 to 19.

CAUTIONARY OBSERVATIONS

Beyond the observation that community provides a sense of affiliation and valued participation, our discussion of this concept has been largely descriptive and peculiar to West Virginia. Others have noted that community is difficult to define and is too frequently romanticized (see, for example, Blau, 1993; Bernstein, 1992). We agree that community is an easily misunderstood concept.

In the present instance, however, the characteristics of traditional communities which are most important seem clear enough: a more or less predictable, reasonably hopeful future, in a socially and culturally familiar place, where established roles are more or less readily available (see Mead, 1934: 260-273). This contrasts sharply with the "hard egotism, anonymous individualism, and narrow self-seeking" of social settings wherein traditional community relations have been superseded by impersonally modern and unpredictable labor market relations (Novak, 1978: 69).

The independent variable MATRIC, the percentage of 1987 high school graduates who enrolled in a college or university, is also troublesome. In two other research

reports (Bickel, 1989b; Bickel and Lange, 1995) post-high school economic opportunities were not the only incentives which seemed to promote prudent behavior. Post-high school educational opportunites, as gauged by the variable MATRIC, also served as incentives for prudently continuing high school participation.

While the results for educational prospects were not as consistent or as strong as for economic prospects, it does seem odd that, in the present analysis, MATRIC, as a constituent of the variable MODERN, loads heavily on a composite variable which is positively related to the incidence of early adolescent pregnancy. The same was true in our earlier analysis of pregnancy among females aged 15 to 19.

This recurring anomaly may be due to a tension between educational opportunity and community in West Virginia. Specifically, we have noted that comparatively high levels of educational attainment are at odds with traditional patterns of community organization and composition. As a result, if we try to use MATRIC as a measure of educational opportunity which would work against early adolescent pregnancy, we may be overlooking the fact that this same factor is associated with increases in teen pregnancy because it is at odds with traditional community patterns.

In a sense, MATRIC could be driving teen pregnancy downward as a measure of opportunity, but driving it upward as a measure of departures from traditional community characteristics. This may explain our anomalous finding with regard to this measure of post-secondary educational opportunity.

As noted above, in our research on dropouts, the connection between high school completion and economic opportunity was stronger and more certain than the connection between high school completion and educational opportunity. The former relationship was comparatively insensitive to model re-specificiatons and was interpretably stable from one data set to another. The latter relationship was less robust and consistent. Perhaps we are beginning to see why.

Within the Appalachian state of West Virginia, economic opportunity is still tied closely to traditional mining and manufacturing jobs, and to self-employed farming. Unfortunately, the number of such jobs has declined vary sharply over the past three decades. However, where they still exist, they provide material support for those wishing to live traditional community and family lives.

When adolescents respond to educational opportunities, however, they may be doing so because traditional economic opportunities are missing, and they are preparing to leave. Those who remain behind may be living in socially and economically decimated areas.

DISCUSSION AND CONCLUSIONS

In previous work on dropouts in Florida and West Virginia, we provisionally concluded that high school students' decisions to stay in school or to drop out were based in part on largely un-selfconscious reference to opportunities and costs of schooling. We have applied the same developing perspective, now giving the concept community an analytical role co-equal with that of opportunity, to adolescent pregnancy among women aged 15 to 19 and to violent deaths among adolescents. In the present paper, we have sought to apply this perpective to pregnancy in early adolescence, among females aged 10 to 14.

Using births to early-adolescent mothers as a proxy for pregnancies among females in the same age group, we have sought to account for county-to-county variability in this consequence of seemingly reckless behavior. We have used a data set and complement of independent variables the same as that used in earlier work on dropping out,

pregnancy in the 15 to 19 age group, and violent deaths among adolescents.

Tentatively, we have concluded that the same factors which contribute to explaining dropping out, adolescent pregnancy, and violent deaths in the 15 to 19 age group also contribute to explaining pergnancy in early adolescence. Specifically, the presence or absence of accessible economic opportunities, and valued participation in a socially and culturally stable community, both in school and out of school, contribute to diminishing pregnancy in early adolescence, much as they contributed to diminishing the incidence of other forms of recklessness.

Our results are inconsistent with victim-blaming explanations which ignore structurally determined contextual factors. Futher, our findings provide additonal evidence that wildly imprudent, even self-destructive behavior may be interpretably rational: in the absence of a future, reasons for prudently safeguarding one's prospects disappear.

This suggests that conventional pregnancy prevention progams, focusing on "at-risk" inividuals, face obstacles which are not commonly appreciated. The success of such programs may be severly constrained by contextual factors, such as those discussed throughout this paper. This

applies to females in the 10 to 14 age group, as well as to older adolescents.

Yes, our discussion of opportunity, community and their consequences has been limited to West Virginia, a state which is atypical even by standards which prevail in the U.S. Nevertheless, insofar as opportunity and community are social and cultural essentials, in places where early-adolescent pregnancy remains a personal and social problem, our analysis seems useful.

REFERENCES

Astroth, K. (1994) Beyond Epiphobia: Problem Adults or Problem Youths? Educational Researcher, 75: 411-413.

Bauch, J. (1994) Categories of Parental Involvement. The School Community Journal, 4: 53-61.

Bernstein, M. (1992) The Effects of Student Background, Community, and School Factors on District-Level High School Dropout Rates in Pennsylvania. Unpublished Doctoral Dissertation, The Graduate School, The Pennsylvania State University, University Park, PA.

Bickel, R. (1989a) Post-High School Opportunities and Post-High School Completion in an Appalachian State. Youth and Society, 21: 61-84.

Bickel, R. (1989b) Opportunity and High School Completion. The Urban Review, 21: 251-261.

Bickel, R. and Lange, L. (1995) Opportunities, Costs, and High School Completion in West Virginia: A Near Replication of Florida Research. Journal of Educational Research, 88: 363-370.

Bickel, R. and McDonough, M. (In Press) Opportunity, Community, and Reckless Lives: Social Distress Among West Virginia Adolescents. The Journal of Social Distress and the Homeless.

Bickel, R. and Papagiannis, G. (1988) Post-High School Prospects and District-Level Dropout Rates. Youth and Society, 20: 123-147.

Bickel, R., Weaver, S., Lange, L., and Williams, T. (In Press) Opportunity, Community, and Teen Pregnancy in an Appalachian State. The Journal of Educational Research.

Billy, J. and Moore, D. (1992) A Multilevel Analysis of Marital and Nonmarital Fertility in the U.S. Social Forces, 70: 976-1011.

Blalock, H. (1982) Conceptualization and Measurement in the Social Sciences. Newbury Park, CA: Sage.

Blau, J. (1993) Social Contracts and Economic Markets. New York: Plenum.

Bormann, K. and Mueninghoff, E. (1983) Lower Price Hill's Children: Family School, and Neighborhood. In A. Batteau (Ed.) Appalachia and America. Lexington, KY: The University of Kentucky Press, 210-226.

Brewster, K, Billy, J., and Grady, W. (1993) Social Context and Adolescent Behavior. Social Forces, 71: 713-740.

Brough, J. (1990) Changing Conditions for Young Adolescents. Educational Horizons, 68: 78-81.

Bryk, A. and Thum, Y. (1989) The Effects of High School Organization on Dropping Out: An Exploratory Investigation. American Educational Research Journal, 26: 353-383.

Campbell, K. and Lee, B. (1992) Sources of Personal Neighborhood Networks: Social Integration, Need, or Time. Social Forces, 70: 1077-1097.

Carver, T. and Thomas, P. (1995) Rational Choice Marxism. University Park, PA: The Pennsylvania State University Press.

Charleston [WV] Gazette (1996) Fewer Teenagers Have Babies, Lowering Unwed Birth Rate. Charleston [WV] Gazette, 124, October 5: 2A.

Chatterjee, S. and Price, B. (1991) Regression Analysis By Example (Second Edition). New York: Wiley.

Chumlea, W. (1982) Physical Growth in Adolescence. In B.B. Wolman (Ed.) Handbook of Developmental Psychology. Englewood-Cliffs, NJ: Prentice-Hall.

Clark, R. (1983) Family Life and School Achievement. Chicago: University of Chicago Press.

Cloward, R. and Ohlin, L. (1960) Delinquency and Opportunity. New York: The Free Press.

Dunteman, G. (1989) Principal Components Analysis. Newbury Park, CA: Sage.

Everhart, R. (1983) Reading, Writing, and Resistance. Englewood-Cliffs, NJ: Prentice-Hall.

Fitzpatrick, K. and Yoels, W. (1992) Policy, School Structure, and Socio-Demographic Effects on Statewide High School Dropout Rates. Sociology of Education, 65: 76-93.

Fleishman, J. (1994) Families Gutted as Appalachian Culture Goes Downhill. Charleston (WV) Gazette-Mail, March 19, 122: 1B and 5B.

Gujurati, D. (1995) Basic Econometrics, Third Edition. New York: McGraw-Hill.

Harvey, S. and Spigner, C. (1995) Factors Associated with Sexual Behavior Among Adolescents: A Multivariate Analysis. Adolescence, 30: 253-264.

Hayward, M., Grady, W., and Billy, J. (1992) The Influence Of Socioeconomic Status on Adolescent Pregnancy. Social Science Quarterly, 73: 751-771.

Inkeles, A. and Smith, D. (1974) Becoming Modern. New York: Oxford University Press.

Kennedy, P. (1992) Guide to Econometrics (Third Edition). Cambridge, MA: MIT Press.

Lewis, H., Johnson, L., and Askins, D. (1978) Colonialism in America: The Appalachian Case. Boone, NC: The Appalachian Consortium Press.

Lunneborg, C. (1994) Modeling Experimental and Observational Data. Belmont, CA: Duxbury Press.

Luster, T. and Small, S. (1994) Factors Associated with Sexual Risk-Taking Behaviors Among Adolsecents. Journal of Marriage and the Family, 56: 799-808.

Marshall, G. (1994) The Concise Oxford Dictionary of Sociology. New York: Oxford.

Martinez, R. (1996) Latinos and Lethal Violence: The Impact of Poverty and Inequality. Social Problems, 43: 131-146.

McCullough, M. and Scherman, A. (1991) Adolescent Pregnancy: Contributing Factors and Strategies for Preventions. Adolescence, 26: 799-808.

Mead, G. (1934) Mind, Self, and Society. Chicago: University of Chicago Press.

Novack, G. (1978) Polemics in Marxist Philosophy. New York: Monad Press.

Nyden, P. (1994a) Mountain State Hits Survey Peaks, Valleys. Charleston WV Gazette, May 25, 122: 1A and 11A.

Nyden, P. (1994b) Consolidation Still Controversial. Charleston WV Gazette, July 31, 122, 1A and 6A.

Oakes, J. (1985) Keeping Track. New Haven, CT: Yale University Press

Pallas, A., Natriello, G., and McDill, E. (1989) The Changing Nature of the Disadvantaged Populaton. Educational Researcher, 18: 16-22.

Papagiannis, G., Bickel, R., and Fuller, R. (1983) The Social Creation of School Dropouts. Youth and Society, 14: 363-392.

Petee, T. and Kowalski, G. (1993) Modeling Rural Violent Crime Rates: A Test of Social Disorganization Theory. Sociological Focus, 26: 79-87.

Ritzer, G. (1996) Modern Sociological Theory. New York: McGraw-Hill.

Russell, S. (1994) Life Course Antecedents of Premarital Conception in Great Britain. Journal of Marriage and the Family, 56: 480-492.

Scott-Jones, D. (1991) Adolescent Childbearing: Risk and Resilience. Education and Urban Society, 24: 53-64.

Shoemaker, D. (1996) Theories of Delinquency. New York: Oxford University Press.

Spatig, L. and Bickel, R. (1993) Education for Freedom: A Case Study in Social Foundations. Educational Foundations, 7: 51-64.

Stoughton, C. and Grady, B. (1978) How Many Students Will Dropout and Why? North Central Association Quarterly, 52: 312-315.

Stevens, J. (1993) Applied Multivariate Statistics for the Social Sciences. Hillsdale, NJ: Erlbaum.

Stinchcombe, A. (1964) Rebellion in a High School. New York: The Free Press.

Thompson, S. (1995) Going All the Way. New York: Hill and Wang.

Turner, J. and Helms, D. (1988) Marriage and Family Traditions and Transitions. Orlando, FL: Harcourt, Brace, Jovanovich.

United Nations (1995) Demographic Yearbook. New York, NY: Author.

Wehlage, G., Rutter, R., Smith, G., Lesko, N., and Fernandez, R. (1989) Reducing the Risk: Schools as Communities of Support: Philadelphia, PA: The Falmer Press.

West Virginia Department of Education (1987) Annual Report. Charleston, WV: Author.

West Virginia Department of Health and Human Services (1996) West Virginia Adolescent Injury Profile. Charleston, WV: Author.

West Virginia Kids Count Leadership Collaborative (1996) Kids Count Data Book. Charleston, WV: West Virginia Kids Count Fund.

Willis, P. (1981) Learning to Labor. New York: Columbia University Press.

Woods and Poole (1987) West Virginia Social and Economic Survey. Washington, D.C.: Author.

Table 1

DEFINITIONS OF ALL VARIABLES

Dependent Variable

BRTHRATE	Births per thousand females aged 10 to 14, 1987.

Independent Variables

Economic Opportunities

WAGE	Average job wage in thousands of dollars.
UNEMPLOY	Average unemployment rate as a percent of the total labor force.

Postsecondary Educational Opportunities

MARTIC	Percent of 1987 high school graduates who enrolled in a college or university.

Socioeconomic Composition

HOUSEINC	Average household income in thousands of dollars.
EDAVG	Average level of educational attainment among adults age 25 or older.
URBAN	Percent of total population living in urban areas.
SERVICE	Percent labor force in service sector jobs.

Ethnic Composition

BLACK	Percent of the population that is Black.
ETHNIC	Percent of the population that is neither Black nor White.

School Characteristics

CAPREV	Local, state, and federal revenue per capita for public schools in thousands.
MEANSIZE	Average number of students per public secondary school in hundreds.
COUNKID	Number of public school counselors per thousand students.
RATIO	Student/teacher ratio.
COLLPREP	Percent of high school students in a college preparatory curriculum.
HSGRADS	High school completion rate.

Table 2

DESCRIPTIVE STATISTICS

	Means	Standard Deviations
Dependent Variable		
BRTHRATE	1.14	1.99
Independent Variables		
Economic Opportunities		
WAGE	17.11	3.89
UNEMPLOY	7.25	2.97
Postsecondary Educational Opportunities		
MARTIC	35.30	8.36
Socioeconomic Composition		
HOUSEINC	23.02	3.57
EDAVG	11.43	1.62
URBAN	21.44	22.18
SERVICE	54.00	20.60
Ethnic Composition		
BLACK	1.61	2.18
ETHNIC	0.25	0.52
School Characteristics		
CAPREV	3191.92	400.75
MEANSIZE	5.27	3.42
COUNKID	4.00	2.00
RATIO	18.54	1.66
COLLPREP	27.89	10.73
HSGRADS	80.80	12.37

Table 3

OUT-OF-SCHOOL COMMUNITY

Factor Loadings

	FACTOR 1	FACTOR 2
Percent Urban	.82	-.07
Percent Black	.55	.61
Percent Neither Black Nor White	.65	.59
Average Educational Level	.49	-.48
Percent of Students in Academic Track	.76	-.48
College Enrollment Rate	.73	-.16
Percent in Service Sector Jobs	.70	.09
Variance Explained	46.4%	17.6%

Table 4

RATES OF PRE-TEEN AND EARLY TEEN PREGNANCY
PER THOUSAND AGED 10 TO 14

Unstandardized and (Standardized) Regression Coefficients

Economic Opportunities	
Average Job Wage	-0.20** (-.39)
Unemployment Rate	0.08 (.12)
Departures from Traditional Community Patterns	
Out-of-School	0.93** (.48)
In-School	0.25** (.44)
Controls for Socioeconomic Status, Gender, School Factors	
Average Household Income	0.01 (.03)
School Revenue Per Capita	-426.40 (-.09)
Counselors Per Student	-132.73 (-.11)
Student/Teacher Ratio	-0.10 (-.09)
High School Completion Rate	0.02 (.09)

R-squared=59.2%
Adjusted R-squared=48.8%

N=54!

*P<.05
**P<.01

!One county, Raleigh, was deleted as a speciously influential observation.

Age-specific pregnancy data was provided by The Division of Adolescent Health, College of Education, Marshall University, Huntington, West Virginia.

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement (OERI)
Educational Resources Information Center (ERIC)

NOTICE

REPRODUCTION BASIS

☑ This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.

☐ This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").