

The Embeddedness of Adolescent Employment and Participation in Delinquency: A Life Course Perspective

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ABSTRACT

Adolescent penetration into the labor market is a relatively new, and much understudied, phenomena. To date, limited empirical evidence suggests that the extensive employment of adolescents increases their offending. We bring together insights garnered from life-course criminology, which emphasizes the timing of transitional role changes; and economic sociology, which draws attention to the "social embeddedness" of development and decision-making. The objective is to test whether a youth's embeddedness within the labor market has deleterious consequences for the youth's behavior. Our results show that work embeddedness is positively related to delinquency, and that this effect is not accounted for by prior levels of delinquent involvement. These findings were replicated by use of a community sample. In total our findings suggest that being embedded in a work role as a teenager has general deleterious consequences for behavior.

KEY WORDS: life course perspective; employment; delinquency

INTRODUCTION

As Hirschi (1983) observed, it is virtually an article of faith among criminologists that unemployment causes and employment prevents criminal behavior. Although the results are not uniform, evidence on the macro-level (see Chiricos 1987) and micro-level (Sampson and Laub 1993) exists that lends support to this viewpoint. Still, studies showing the beneficial effects of employment most often have focused on those beyond adolescence, on young adults and adults who might be expected to be in the full-time labor market. Research in the life-course perspective cautions, however, that the effects of factors may vary according to an individual's developmental stage (Farrington 1994; Loeber and LeBlanc 1990). In this case, it is important to question whether employment, which might reduce lawlessness among adults, has beneficial or deleterious effects on adolescents who are of

school age and arguably are not developmentally prepared for the labor market.

The life-course perspective also draws attention to how pre-existing individual differences in criminal propensity affect later life outcomes, such as employment (Hagan 1993). Adolescents high in criminal potential may, for example, self-select themselves into work roles that act to incrementally mortgage their future educational and occupational potential and act in turn to stabilize their criminality. Or, conversely, working may spur greater delinquent involvement independent of a youth's characteristics. Moreover, life-course criminology also cautions that variables are likely to have different effects depending on one's stage in development.

In light of these considerations, we assess the impact of adolescent employment on delinquency and examine variables potentially responsible for placing youths into extensive work roles. We also

explore whether working has age-graded effects on delinquency--that is, whether employment increases delinquent involvement for young adolescents while reducing delinquency for older adolescents.

THE EFFECTS OF ADOLESCENT EMPLOYMENT

There is a growing body of evidence, replicated across national and community samples, which suggests that the participation of school-aged youth in the labor market, especially when it entails spending many hours each week at work, results in increased delinquency (Agnew 1986; Bachman and Schulenberg 1993; Bachman, Bare, and Frankie, 1986; Greenberger and Steinberg 1981, 1986; Mortimer and Finch 1986; Wright, Cullen, and Williams 1997; cf. Gottfredson 1985). In a series of influential studies, Greenberger, Steinberg, and colleagues provided considerable evidence that extensive adolescent labor market participation, typically defined as working 20 or more hours per week, generates a range of deleterious consequences, such as reduced involvement in school, less time spent with family, less concern for others, increased cynicism about the world, and increased marijuana use (Greenberger and Steinberg 1981, 1986; Greenberger, Steinberg, and Ruggiero 1982; Steinberg 1996; Steinberg and Greenberger 1980; Steinberg Greenberger, Gauduque, Ruggiero, and Vaux 1982). Similarly, their longitudinal analyses, which controlled for prior levels of delinquency and the timing of employment, indicate that adolescents who worked more than 15 to 20 hours per week achieved lower grades in school, had a less favorable self-perception, experienced diminished educational aspirations, and were more likely to use drugs (Bachman, Bare, and Frankie 1986; Bachman and Schulenberg 1993; Mortimer and Finch 1986; Ruggiero, Greenberger, and Steinberg 1982; Steinberg, 1996; Steinberg and Dornbusch 1991; Steinberg et al. 1982).

Individual level research by criminologists on the effects of offending on working, or conversely on unemployment, yields complex if not contradictory results (Williams, Cullen, and Wright 1996). For example, some studies have concluded that working has no effect on law-breaking (Crowley 1984; Gottfredson 1985; Horney, Osgood, an Marshall 1995) or may under some circumstances reduce criminal involvement (Farrington, Gallagher, Morley, St. Ledger, and West 1986; Good, Pirog-Good, and Sickles 1986; Sampson and Laub 1993; Thornberry and

Christianson 1984). These studies, however, have generally used samples that included many, if not all, respondents who were in their late teens or in early adulthood (but see Gottfredson 1985). Accordingly, this research may not be sensitive to how employment experiences may have different effects earlier in the life course, before youths leave school and are expected to participate full-time in the labor market.

In contrast, analyses of four national data sets have replicated the finding that working increases delinquency among youths of school age. First, using Youth in Transition data, Agnew (1986) showed that while occupational prestige and length of employment reduced delinquency, long hours and higher pay rates increased delinquency, aggression, and theft. His analysis also revealed that extensive involvement in work, as measured by the number of hours employed per week, also reduced significantly youths' grades, their time spent on homework, their long-range educational aspirations, their beliefs concerning social responsibility, and the degree to which they valued self-control.

Second, although only a secondary focus of her study, Heimer's (1995) analysis of the 1988 Monitoring the Future Survey, a national survey of more than 3,000 youths, found that delinquency was inversely related to the number of hours worked per week over the school years (a variable economists term "work intensity"). She reported that, "among females, those who worked more hours a week are actually more likely to steal" and "that for both genders, working more hours...increases the likelihood of school deviance, violence, and drug use" (1995:317, emphasis in original).

Third, using the National Survey of Families and Households data, Wright, Cullen, and Williams (1997) found that extensive adolescent employment, or work intensity, was associated with overall higher levels of delinquency, especially among "high-risk" boys.

Fourth, two independent analyses of the National Youth Survey have reported that working is related to higher levels of misconduct. Cullen, Wright, and Williams (1997) found that work intensity was significantly and positively related to delinquency prospectively and controlling for past delinquency (as well as a range of other variables, including delinquent peers). Similarly, Ploeger (1997) found that the status of having worked in the community for pay in the past year increased wayward conduct, especially alcohol and drug use, even when prior delinquency was taken into account. Ploeger also reported that employment

likely increased delinquency by heightening exposure to delinquent peers.

In short, across varied samples and employing different analytical procedures, scholars from diverse fields have produced evidence which suggests that extensive participation in the labor market by youths has negative consequences for their development. There are two limitations, however, that characterize this research. First, the majority of studies typically rely on a single measure of the "intensity" of work, the average number of hours the youth works per week (or even less well developed, they rely on a dichotomous employed-unemployed measure). This single item measure may not capture how deeply youths have become enmeshed in the labor market and is of questionable theoretical import. We discuss this issue in more detail shortly.

The second substantive shortfall of existing research, and perhaps the most critical, is the lack of theory guiding research into how participation in the labor market intersects with delinquent involvement (Bachman and Schulenberg 1993). Although longitudinal evidence does exist that shows the independent effects of working on various psychosocial outcomes (Steinberg et al. 1982), few of these studies are organized around a theoretical perspective. Instead, past research has sought merely to examine the robustness of relationships. Moreover, when theoretical arguments have been offered, they have either been post-hoc suppositions, or they have suggested that individual differences between adolescents predispose certain youths to extensive employment (Bachman and Schulenberg 1993)¹.

SELF-SELECTION VERSUS SOCIAL CAUSATION SELF-SELECTION

Traditional sociological theories of crime would generally predict that employment is a protection against criminogenic influences (e.g., by reducing strain, solidifying bonds, increasing prosocial influences) (Crowley 1984; Ploeger, 1997; Williams et al. 1996). The positive association between working and delinquency, which runs counter to these traditional perspectives, thus, is an empirical finding that potentially (but not inherently) challenges a sociological approach to understanding the influence of employment on crime. More noteworthy, it is a finding that lends itself to individual difference explanations that focus on the self-selection of antisocial youths into delinquency and work (Bachman and Schulenberg 1993; Gottfredson 1985).

It is certainly plausible that certain youths will select themselves into extensive involvement in work roles. Consider first the central findings from life-course analyses that crime generally starts very early in life, is relatively stable over time, and affects a variety of social outcomes (Gottfredson and Hirschi 1990; Sampson and Laub, 1993; White, Moffitt, Earls, Robins, and Silva 1990). Drawing on these general findings, Wilson and Herrnstein (1985) argue that past antisocial behavior should account for the later life problems, such as unemployment. Their position is similar to that of Gottfredson and Hirschi (1990) who see enduring individual differences in self-control as responsible for later life problems. "The most significant employment-crime fact," observes Gottfredson and Hirschi (1990:165), "is the tendency for people who commit crime to have unstable job profiles--that is, to have difficulty finding and keeping jobs....People with low self-control will have difficulty meeting the obligations of structured employment...." As Hagan (1993) notes, "propensity-based" models hypothesize that delinquency occurs temporally prior to labor market participation, which in turn would suggest that any effect of employment on behavior should be accounted for by including the effects of prior delinquency.

The propensity perspective is also in line with Newcomb and Bentler's (1985) argument that some adolescents begin their transition into adult roles prematurely, usurping the normal progression from school to work to marriage (Kamerman 1981; Rindfuss, Swicegood, and Rosenfeld 1987). The hastened role development of certain adolescents, known as "precocious development," places youths at risk for future problems mainly because, "they are not likely to be prepared for the obligations that accompany those roles" (Krohn, Lizotte, and Perez 1997:88). Similar to pure propensity models, the precocious development position places theoretical emphasis on individual characteristics that predispose some youths to enter adult roles prematurely. However, this perspective also draws attention to the interaction between individual traits and the characteristics and demands of the social setting, which together are potentially criminogenic.²

A Critique of Self-Selection Explanation

Broader theoretical insights linking the socializing features of work to delinquency have been hampered by 1) a continued reliance on econometric measures of "work intensity" that are stripped of theoretical utility, and 2) the failure to consider the work environment as a context for

development where adolescents with different personality traits, experiences, and values coexist in close proximity. We address these points sequentially.

First, individualistic explanations of the work-delinquency relationship generally rely on empirical relationships showing a positive association between levels of "work intensity" and misbehavior. The concept of work intensity is drawn directly from econometric research, where the search for robust empirical relationships is valued over explanations for those relationships.

Work intensity is usually measured by a single item that assesses the average number of hours a youth works each week. While this concept sensitizes us to the multiple dimensions of work by drawing attention to the varying levels of involvement in work experienced by adolescents, it is largely atheoretical and does not assist investigators in explicating the underlying causal mechanisms that translate "youthwork" into crime. Indeed, the literature is replete with instances of the measure of work intensity driving efforts to theorize about how working affects youths, instead of theories driving empirical investigations into the role work plays in delinquent involvement (see, for example, Wright et al. 1997). After all, the number of hours a youth spends at work can be interpreted as a measure of attachment to work, a measure of commitment to work, or a measure of a conventional value indicative of a positive work ethic. The point is that the traditional conceptualization of work intensity as the average number of hours a youth spends at work does not necessarily capture how intensely a youth works while at work and subsequently is open to diverse interpretations that virtually invite individualist explanations.

Second, individual explanations of economic behavior in general and the work-misbehavior relationship specifically overlook the impact working has on youths. After all, one of the primary motivations to increase adolescent involvement in the workplace has been a belief that working "builds character" (National Commission on Youth 1980; Williams et al. 1997). However, there is reason to believe that the workplace is of questionable value to the socialization of youths. Work situates adolescents in a context ripe with enticements and benefits, namely in the form of money but also in networks, that likely influence perceptions, beliefs, and behaviors. Outside of school the work environment is one of the few social domains of adolescents that contain a mix of individuals with varying propensities (Steinberg 1996).

The Social Causation Position

Perhaps the strongest counterpoint to individualistic explanations of economic behavior comes from Granovetter (1985). The key to understanding the effects of employment on behavior, according to Granovetter (1985), is in recognizing the role social embeddedness plays in reconciling early propensity with life experience. According to Granovetter, propensity based arguments reflect the fallacy associated with an atomized view of human behavior; they fail to recognize how being embedded in social roles affects individuals. While not ignoring the role of individual traits, Granovetter maintains that social embeddedness constrains choices, alters perceptions, and makes available networks that circumscribe individuals through mutual obligation, regardless of their personal characteristics. For Granovetter social embeddedness involves the connection of individuals to institutions through a web of relationships that harden into long-term dependencies. These dependencies, in turn, direct behavior in a way that fulfills obligations to others within a network, even when such obligations threaten the long-term betterment of the individual.

Capitalizing on Granovetter's insights, Hagan (1993) employed the concept of "criminal embeddedness" to explain the occurrence of adult unemployment. Hagan argued that an adolescent's embeddedness in delinquency incrementally mortgages the requisite human and social capital needed to obtain quality adult employment. His analysis of panel data from the Cambridge Youth Study revealed that an adolescent lifestyle that evolves around crime predicted not only adult crime but also adult unemployment. However, the converse may be true for adolescents. Embeddedness in work roles may restrict for youths their acquisition of human and social capital that can be used later in life to acquire adult employment. The effects during adolescence may also include criminal involvement.

Parallels to Granovetter's embeddedness position can also be found in the job involvement literature (Bielby 1992; Menaghan 1991). The term "job involvement," argues Lorence and Mortimer (1985:618), "subsumes a variety of orientations concerning the degree of meaningfulness and importance of work as a sphere of life activity." It is "multidimensional, referring to a set of related attitudes applying to a specific job, an occupation, or to a general belief about the centrality of work in one's life." This broad conceptualization of "job involvement"

corresponds closely to the embeddedness position, as both draw attention to the effects participating in a work role has in shaping perceptions and behaviors. Youths deeply embedded in a work role invest their time and energy in that role. They are involved in a role that influences their perceptions, attitudes, and choices they make. Similarly, Sampson and Laub's (1993) theory of informal social control is closely related to the work of Hagan, Granovetter, and the "job involvement" literature generally. Their theory potentially sheds light on how adolescent employment may be related to delinquency. First, Sampson and Laub (1993:141) argue that employment per se will not necessarily reduce crime, nor will "jobs characterized by purely utilitarian objectives and nonoverlapping social networks." Instead, they maintain that employment increases social control and thereby restricts adult crime only when "employment is coupled with job stability, job commitment, and mutual ties to work (that is, employee-employer interdependence)." Second, they go on to explain that informal social control is created through the institution of work when adults acquire social relations that are "characterized by an extensive set of obligations, expectations, and interdependent social networks" (1993:141). Stated another way, jobs that embed adults in institutional relationships that foster the accumulation of personal and social capital expose a person to informal social control and thereby reduce involvement in crime.

It is not clear, however, whether the nature of adolescent employment meets Sampson and Laub's criteria for reducing delinquency, whether it builds social capital, or whether it fosters informal social control. Available evidence suggests that typically it does not. First, youths are generally restricted to minimum wage jobs that have only a tenuous link to their future, are subject to only minimal levels of adult supervision, and are relegated to jobs that are transitory and require little intellectual or occupational training or investment (Steinberg, 1996). Although their involvement in a job role may be quite extensive, the poor work conditions that define most adolescent work situations may not easily lend to "building character." Given the characteristics that define the youth labor market, it is difficult to see how youth employment builds human and social capital (Gibson and Wright 2001; Wright and Cullen 2000).

Second, as Hirschi (1969) noted, employment may allow youths to escape the control of parents and of other guardians, such as school officials. Relatedly, data from Steinberg (1996, p. 168)

show that almost 60 percent of working adolescents, "spend most or all of their earnings--on average, somewhere between \$200 and \$300 monthly--on immediate personal expenses," such as a car, nights out with friends, and dating. Thus, working may provide youths with resources that 1) allow them to avoid the direct controls of adults, and 2) enable a culture of consumption as well as providing for the immediate gratification of materialistic desires (see also, Wright, Cullen, Agnew and Brezina 2001). The point is that the adolescent work place may not be conducive either to the acquisition of personal capital or to social control. Or, as noted by Matsueda and Heimer (1997, p. 200), "when work is merely a temporary dead-end source of spending money, bringing little prestige and esteem, and not affecting one's reference groups, it may have little or no restraining effect on crime."

The current study is designed to further our understanding of the role of working in delinquency causation. Consistent with the prior discussion, we hypothesize that "work embeddedness" will be associated significantly with higher levels of delinquency. Moreover, consistent with Granovetter's position, we argue that the effects of work embeddedness will remain even after prior delinquency has been controlled. On a structural level, we suggest that youth employment in the United States has been, to use Messner and Rosenfeld's (1997) terms, "penetrated" in an "imbalanced" way by economic concerns (see also Cullen et al. 1997). Adolescents are largely a mass of inexpensive, exchangeable, and expendable labor; they are not workers that employers have an incentive to invest in or to foster their psychosocial development. Youth work environments thus often have little adult supervision, involve low skills, and do little to build conventional human, social, or cultural capital (Steinberg 1996; Wright and Cullen 2000). Instead, these social environments have the potential to expose juveniles to delinquent peer networks (Ploeger 1997; Wright and Cullen 2000) and to create attitudes conducive to antisocial conduct (Steinberg, 1996). Becoming extensively embedded in work roles, especially at a young age, thus may play a role in initiating and stabilizing delinquent behavior.

In line with this perspective, we attempt to move beyond an analysis of what effect employment has on delinquency to attempt to examine how adolescents become embedded in work roles and how the effects of working may change over the life-course. Again, consistent with Granovetter's position, we hypothesize that

self-selection effects cannot account completely for levels of adolescent work embeddedness. And consistent with our life-course orientation, we also hypothesize that the effects of working are likely to vary by age, producing delinquency at younger ages and reducing delinquency at older ages.

RESEARCH STRATEGY

Our analysis is conducted in two stages and with two separate data sets. With a national data set, we first seek to replicate the established relationship between working and delinquency. We then test whether prior delinquency is responsible for the association between concurrent levels of work embeddedness and delinquency (the self-selection hypothesis). We also examine predictors of work role embeddedness, another test of the selection hypothesis, as well as examine the impact of work embeddedness by age to assess the life-course effects of adolescent employment and to check for age-graded shifts in the effects of work role embeddedness.

The main limitation of the National Longitudinal Survey of Youth (NLSY) analysis is that we use a three-variable proxy measure of work embeddedness. The use of proxy measures of central theoretical constructs in both macro-level (Sampson and Groves 1989) and micro-level (Agnew 1986) research is commonplace, but this consideration does not obviate the fact that the NLSY has no direct measure of embeddedness. To an extent, then, the meaning of our findings using the NLSY data must be considered open for interpretation. Still, our theoretical position is plausible, and any competing explanation will have to account for the pattern of results we present.

It also was possible, however, to attempt to validate our proxy measure of work embeddedness on recent cross-sectional data that we collected. The advantage of this second data set is that it contained the same measures of embeddedness used in the NLSY data and more detailed measures that would reflect embeddedness (or involvement) in a work role. Again, Granovetter (1985) argues that economic behaviors cannot be reduced to the atomized choices made by individual actors. Such behavior is embedded in existing, historically specific contexts. Choices are not wholly determined, but they are circumscribed by existing institutional arrangements. Individuals in work roles thus are not independent actors but are enmeshed or "embedded" in social relationships that shape friendships, opportunities, and ultimately their behavior at present and, contingent on current choices, their behavior in the future.

Again, scholars in the independent perspective of "work involvement" make much the same point (Lorence and Mortimer 1985).

In this light, we would expect that youths who spend more hours at work, who spend more days at work, and who derive more economic resources from work will develop different social relationships and different perspectives. Given the nature of the youth labor market in the US at this specific time, we would expect, consistent with past research (Ploeger 1997; Steinberg 1996), that youths would be more involved in delinquent networks comprised of coworkers and develop values conducive to crime. To use Hagan's (1989) terms, the social and cultural capital they would amass would be "criminal," not conventional, in nature. Thus, we test this thesis with our second data set in an effort to validate that our proxy measure of work embeddedness does in fact show that youths become more embedded or involved in work roles. Further, we are able to replicate the central findings on the effects of work embeddedness found in the NLSY data. Finally, we present a path analysis that explores whether direct measures of embeddedness result in delinquency.

METHODS

Sample

Data for this project come from two sources: First, we use the 1988, 1990, and 1992 waves of the children of the (NLSY). Assessment of the development of children born to mothers in the NLSY began in 1986 and has continued at two-year intervals through 1992. The NLSY contains dual informant reports of adolescent and maternal behaviors and attitudes. Children included in the 1992 wave represent over two-thirds of the childbearing to a cohort of American women (Center for Human Resources Research 1992)³.

For our cross-sectional analyses of the NLSY-Child we chose to limit our sample to children aged 12 to 18 in 1992 for three reasons. First, child self-report instruments were administered only to children over the age of ten. Second, this age range corresponds to the time frame in which adolescents typically begin paid work (Schneider and Schmidt 1996). Finally, the design of the survey includes the measurement of current and subsequent youths born to mothers. The size of the sample of youth then increases over time (new births) and ages. Subsequently, the number of youths age twelve and over by 1992 includes a sufficient number for analysis (N=1,526).^{4,5}

A detailed list of all scales and items can be found in Appendix A. However, we note that

selection of independent variables for inclusion into the analyses was contingent on their use in past studies. The independent variables we employ thus capture the effects of other competing institutions, such as family and friends, found in traditional criminological investigations. Moreover, we have already noted the limitations associated with our proxy measure of work role embeddedness. Our measure of embeddedness does clearly tap one dimension of role embeddedness, how much time an individual spends in a role. Time, we argue, is an important component related to embeddedness in any role.

Tri-Cities Data Set

The second sample was drawn from eight high schools located in northeast Tennessee (N=436). Although a convenience sample, the data set contains detailed information about the involvement of youths in work and delinquency, as well as measures of work related attitudes and coworker delinquency. Following the lead of Sampson and Groves (1989), we use this sample to validate the measure of work embeddedness derived from the NLSY-Children and to replicate the findings generated from national data.

Independent scales and items were taken primarily from already published studies and had known reliabilities. Thus, measures found in the Tri-Cities data compare closely to measures found in other studies and helps to give an added boost of confidence to the validity of our findings. A detailed list of scales and items can be found in Appendix A.

RESULTS

Since we are using a sample (NLSY-Child) that includes relatively young adolescents, we include in Table 1 descriptive information on the work experiences of the sample and work prevalence rates by age. The Tri-Cities sample was restricted to high school seniors aged 17 and 18. Overall, these data show that working is a common feature of the lives of young people, with a majority of youths within each sample reporting experience with paid employment. Moreover, similar to the findings of Mortimer, Finch, Shanahan, and Ryu (1992), working also appears to be an integral feature of the lives of relatively young adolescents (see also, Gottfredson 1985; Yamoor and Mortimer 1990). The majority of youths aged 13 and above report experience with paid work. We note, however, that past research also shows that youths' first jobs are typically informal, such as babysitting or yard-work and that they typically begin working around the age of 12

(Yamoor and Mortimer 1992). The NLSY-Child does not contain measures that allow for the type of work to be controlled, although past findings also indicate that youths make the transition very quickly from informal to formal work (Mortimer et al., 1992)

The Direct Effects of Embeddedness

We turn now to an examination of the effects of work embeddedness on delinquency. The Ordinary Least Squares (OLS) regression results are shown in Table 2. Model 1 includes the standardized parameter estimates of delinquency regressed on work embeddedness, controlling for risk and protective factors. The results show that work embeddedness has a modest, positive, and significant effect on delinquent involvement. Our hypothesis that work embeddedness is positively related to delinquency thus receives empirical support.

In Model 2 we add a measure of prior delinquency into the equation predicting current delinquency. The inclusion of this measure facilitates the measurement of change in levels of delinquency from one measurement wave (1990) to the next (1992). Theoretically, this approach also controls for pre-existing propensities, and tests whether population heterogeneity accounts for the effects of work embeddedness or, conversely, whether embeddedness produces effects independent of early assumed time-stable behavioral characteristics.

The results indicate that the effects of prior delinquency are relatively strong and positive. They also account completely for the effects of age, parental reliability, mothers' delinquency, poverty, and gender. Controlling for prior levels of delinquent involvement, however, did not account for the independent effects of work embeddedness.

Examining Predictors of Embeddedness

How youths become embedded in work roles is a matter of substantive theoretical importance. It may well be the case that delinquent youths self-select themselves into extensive work roles. However, this position ignores the economic enticements and social pressures that make working more likely. Within a large community sample, for example, Phillips and Sandstrom (1990) found that almost 90 percent of mothers and fathers of working adolescents approved or strongly approved of their children's working.

The results of our analyses are shown in Table 3. Model 3 includes delinquency inhibitors and

Table 1. *Sample Characteristics of NLSY (1992 wave) and the Tri-Cities Youth Employment Survey*

Variables	NLSY-Children	Tri-Cities
Is respondent currently employed	52%	75%
Does respondent sometimes work for pay	83%	86%
Average number of hours per week	12 hrs/week	18 hrs/week
Prevalence of working by age:		
12	46%	n/a
13	56%	n/a
14	56%	n/a
15	58%	n/a
16	61%	n/a
17	62%	86%
18	61%	96%

risk factors as well as control variables. Attachment to parents and delinquent peer pressure are significantly and positively related to work embeddedness. Moreover, these data also show that age is moderately associated with increased work embeddedness, while parental supervision is associated with less embeddedness.

In Model 4 we included a measure of current delinquency. This measure reduced the effect of age and eliminated the effect of delinquent peer pressure. Again, however, the results implicate the role of parental attachment in promoting work embeddedness. The effect is both positive and significant.

In Model 5 we included a measure of past delinquent involvement. Although the effect on work embeddedness is slightly reduced compared to the effect of current delinquency, it is nonetheless significant. More notable, however, is that the effect of parental attachment remained a significant predictor of work embeddedness. We

interpret this finding to be consistent with Phillips and Sandstrom's (1990) findings.

Life-Course Effects of Work Embeddedness and Delinquency

The life-course perspective suggests that the effects of certain variables are likely to be contingent on the age of the individual. We suspect that working is one such variable, in that the effects of work embeddedness are likely to differ according to one's age. Jessor, Donovan, and Costa (1991; see also, Jessor 1993), for example, found that for high school students working correlated positively with multiple problem behaviors. With age, however, their subjects began to take on more conventional roles, such as marriage and work, which increased their levels of conformity. Thus, working had differential effects on problem behaviors over time.

Table 2. *OLS Regression Models Predicting Juvenile Delinquency (betas reported)*

Variables	Model 1	Model 2
Work Embeddedness	.09*	.13*
Parental Expectations	.04	.04
Parental Rules	-.03	-.08*
Parental Supervision	-.18*	-.14*
Attachment	-.12*	-.13*
Parental Support	-.03	-.04
Parental Reliability	-.05*	-.02
Delinquent Peer Pressure	.29*	.30*
Mother's Delinquency	.08*	.03
Poverty	.07*	.02
Race (1=minority)	.03	.05
Sex of Adolescent (1=female)	-.15*	-.10
Adolescent's Age	.16*	.07
Delinquency 1990	n/a	.27*
R ²	.34	.08

Notes: * equals p<.05, two-tailed; Model 1 is the baseline theoretical model; Model 2 includes a measure for prior delinquency

Table 3. OLS Regression Models Predicting Work Embeddedness (betas reported)

Variables	Model 3	Model 4	Model 5
Parental Expectations	-.00	.02	-.06
Parental Rules	-.00	.00	.01
Parental Supervision	-.08*	-.05	-.03
Attachment	.08*	.08*	.13*
Parental Support	-.01	-.03	-.04
Parental Reliability	-.02	-.02	-.02
Delinquent Peer Pressure	.06*	.04	.04
Mother's Delinquency	.01	.01	-.02
Poverty	.01	.00	-.05
Race (1=minority)	.00	-.00	-.03
Sex of Adolescent (1=female)	.01	.00	.02
Adolescent's Age	.27*	.24*	.17*
Delinquency 1992	n/a	.12*	n/a
Delinquency 1990	n/a	n/a	.10*
R ²	.098	.110	.080

Notes: * equals $p < .05$, two-tailed; Model 3 is the baseline theoretical model; Model 4 includes a measure of current delinquency; Model 5 includes a measure for prior delinquency.

To test this possibility we constructed a three-wave path model that utilized data from 1988, 1990, and 1992. Subjects were measured on both delinquency and work embeddedness across the six year time span that captured for most youths their entrance into the labor-market and for older youths their exit from high school. In 1988 the majority of youths in the sample were largely removed from the labor market. However, assimilation into work roles increased significantly across the waves⁶.

The path model was constructed by first including all possible direct and indirect effects across the three waves. Nonsignificant paths were deleted from the analysis and modification indices examined to improve model fit. This approach is appropriate since our path model is exploratory. Moreover, because we are testing the possibility of age-graded effects, we chose to split the sample into two groups: a young in-school sample (age 10-12 in 1988 and 14-16 in 1992) and an older sample (age 13-15 in 1988 and 17-19 in 1992).

Figure 1. Empirically Fitted 3 Wave Panel Model for Older Adolescents

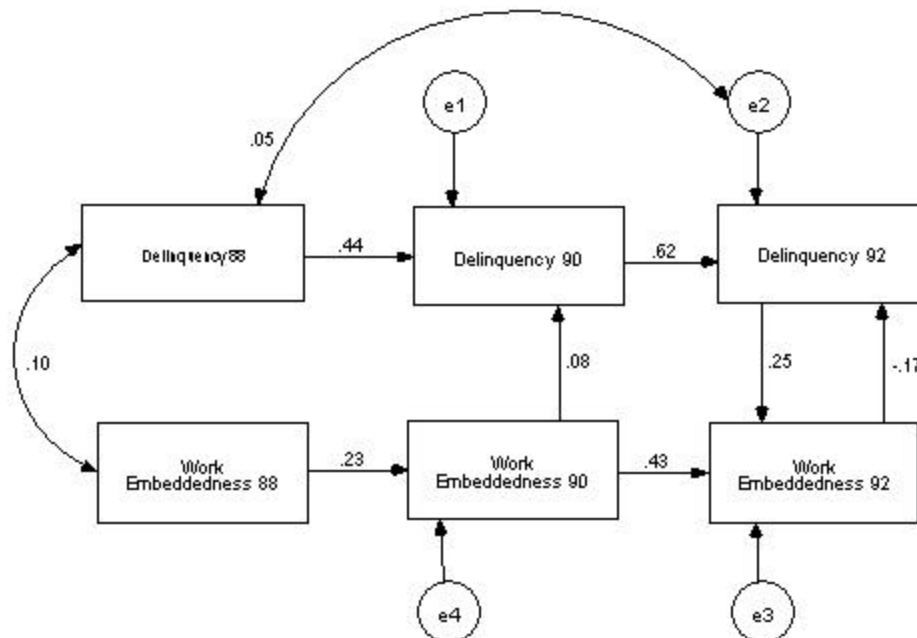
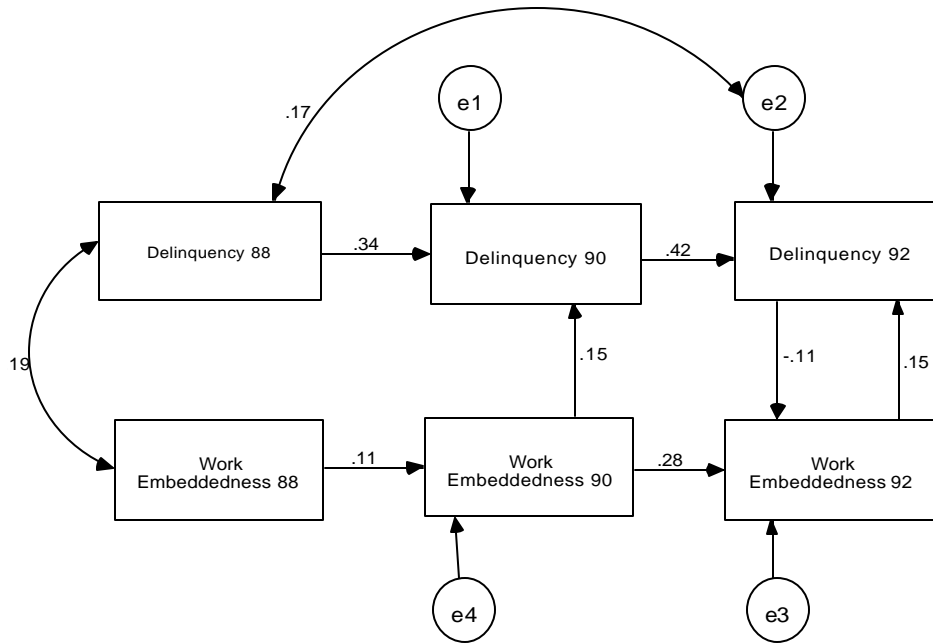


Figure 2. Empirically Fitted 3 Wave Panel Model for Younger Adolescents



The same analytic procedure was conducted on each group. Figures 1 and 2 show the results of the fitted path models for the young and old groups. There is considerable agreement across the two figures with regards to the consistency of significant paths. Paths significant in the young group are also significant in the old group. For each group work embeddedness in 1990 was positively related to delinquency in 1990. However, a marked contrast occurs in 1992. For younger adolescents, delinquency reduced work embeddedness; on the other hand, embeddedness in work predicted higher levels of delinquent involvement. In contrast, just the reverse is found in the older group. For those at the end of their compulsory school experience and for those who have just completed high school, delinquency led to increased work embeddedness. However, work embeddedness then reduced contemporaneously delinquent involvement. We interpret this finding as evidence of an age-graded shift in the effect of working on delinquency.

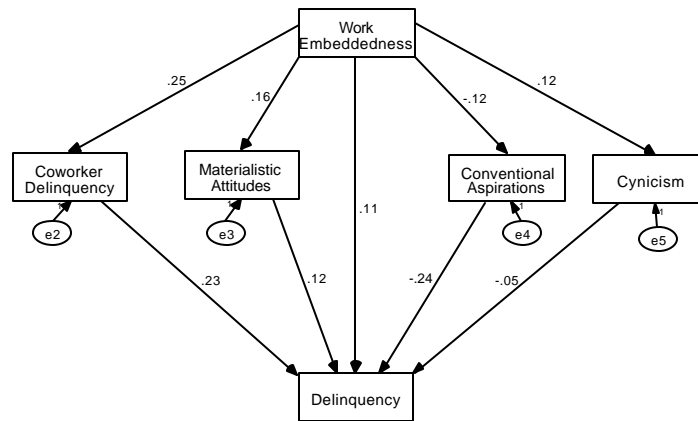
Tri-City Analysis

Admittedly, our work embeddedness scale is only a proxy measure of penetration into work networks. This is a problem common in the social sciences, and thus it is possible that our scale does not adequately capture penetration into the adolescent work force. Following the lead of Sampson and Groves (1989), we employ the use of a second sample that contains direct measures of our theoretical position.

If the embeddedness position is correct and our measure of work embeddedness is valid, variation in our embeddedness scale, which is duplicated across datasets, should predict variation in coworker delinquency specifically and work related attitudes generally. Moreover, we note that these hypotheses cannot be drawn from the standard econometric approach to analyzing the association between working and delinquent involvement. We test this measurement issue by constructing a path model that incorporates these hypotheses. The results are shown in Figure 3.

The findings in Figure 3 show that our work embeddedness measure predicts variation in levels of coworker delinquency, a finding that strongly implicates the role of work related networks in sponsoring delinquent involvement. Moreover, the findings also show that youths deeply embedded in work are also more likely to report higher levels of materialistic attitudes, lower levels of conventional aspirations, and to express increased cynicism towards working. In turn, each of these variables, except cynicism, predicts variation in delinquency. We note as well that, once we correct for correlated error terms, the model fits the data very well (chi-square=2.6, d.f. 3, p<.441). In sum, these findings substantiate hypotheses drawn from the work embeddedness position as detailed by Granovetter and Hagan and also show that our embeddedness scale, although only a proxy measure of work embeddedness, captures indirectly access to delinquent networks based within the work environment.

Figure 3. Modeling the Indirect Effects of Work Embeddedness



Finally, in Table 4 we show the results of the regression of delinquency on work embeddedness and other control variables. We note that the Tri-Cities sample is cross-sectional and thus may confound measures of delinquency with measures of work embeddedness. To limit this possibility, we include in the analysis a measure of low self-control taken from Grasmick, Tittle, Bursik, and Arnecliev (1993). The inclusion of this scale controls for traits potentially responsible for predisposing youths to higher levels of working and to delinquency.

The results again demonstrate the positive association between levels of work embeddedness and delinquency (beta=.18, p.<.001). Other variables potentially related to both work embeddedness and delinquency, such as low self-control, delinquent peer pressure, gender, and the degree of family cohesion, all show effects on delinquency in the expected direction. We note, however, that the magnitude of effect of work embeddedness on delinquency is paralleled only by the effects of low self-control on offending.

DISCUSSION

"For most of the first half of the twentieth century," observes Steinberg (1996), "less than five percent of students had school-year jobs" (p. 165). Today, however, as many as nine in ten students will be employed at some point in high school (Schneider and Schmidt 1996). Moreover, the United States stands apart from other industrialized nations in the degree to which in-school adolescents work, doubling the rates of labor market participation of most other industrialized nations (Steinberg 1996). Indeed, by the time American youths reach their senior year in high school, "many students spend more time on the job than they do in the classroom," (Steinberg 1996:169; see also, Ruhm 1995).

Despite these facts, criminologists have only infrequently examined whether employment protects against or causes delinquency. The research reported here suggests that working does both. For younger adolescents and across the sample as a whole, work embeddedness produces effects that rival, if not surpass, the effects of family and structural variables.

Table 4. OLS Regression Model Predicting Delinquency (betas reported/Tri-Cities Data/N=352)

Variables	Delinquency	T-Value	Sig.
Work Embeddedness	.18	3.782	.000
Sex (1=female)	-.16	-3.178	.000
Household Size	-.08	-1.593	.112
Race (1=minority)	-.05	-1.068	.286
School Commitment	-.09	-1.673	.095
Delinquent Peer Pressure	.09	1.819	.070
Family Cohesion	-.09	-1.793	.074
Low Self-Control	.24	4.653	.000
R ²	.21		

First, it is important to note that we replicate the findings from other data sets showing that work is positively related with crime. This finding holds even when controlling for past delinquency. Since delinquency can be used as a proxy for individual differences, it does not appear that the finding we present is due to self-selection. Instead, it seems that the more adolescents become embedded in work, the more deeply they become involved in delinquency. Again, this finding can be explained by considering the nature of adolescent work. Theoretically, it can be argued that working as a juvenile does not build human or social capital or expose youths to the informal controls inherent in quality work experiences of adults (Sampson and Laub 1993).

Second, taken together, the analysis of the sources of work embeddedness and the longitudinal analysis suggest that we have identified an early life trajectory that includes the intersection of work and delinquency. In addition to parental attachment and age, we found that delinquency is an important factor in deepening a youth's embeddedness in work. Although beyond the scope of our paper, we can suggest that the workplace may be an attractive setting to delinquents because it offers the opportunity to make money to support consumption (e.g., car, dates, clothes, drugs) and because it exposes youths to less social control than family and school settings (Agnew 1990; Cullen, Larson, and Mathers 1985). Equally important, however, we found that while delinquency increased employment, work embeddedness increased delinquency. Throughout much of adolescence, then, it appears that work and delinquency are mutually reinforcing and together comprise a distinctive life trajectory (Cairns and Cairns 1994).

As we noted, this life trajectory appears to be interrupted in later adolescence, when youths complete or near the end of their high school years (see also, Farrington 1986). At this point in the life cycle, the effects of work begin to shift, with employment negatively related to delinquency. Still, this finding is not cause to be too sanguine about employment's consequences. It is possible that the prophylactic effects of employment may not be long lasting. As Sampson and Laub (1993; see also Currie 1985) caution, the critical issue may not be employment per se but the quality of the jobs secured. As youths move more fully into adulthood, those who had an early history of work and delinquency may not have accumulated the human and social capital to secure the kinds of occupational positions that ultimately embed people in a conformist life trajectory. If not, the positive effects of employment as they end their high

school years may be attenuated as they fall into the secondary labor market (Horney, Osgood, and Marshall 1995).

By accepting uncritically that work in and of itself is beneficial to adolescents, criminologists have overlooked the developmental consequences of having youth participate in an institution that competes directly with other socializing institutions for priority, such as school (Steinburg 1996; Wright and Cullen 2000). The effects of work appear multifaceted and potentially deleterious. In any case, it appears that criminological theory and research might benefit from paying systematic attention to how work experiences affect criminal behavior across the life-course.

NOTES

¹At a minimum, most criminological theories are ambiguous as to the relationship between working and delinquency. This ambiguity becomes all the more clear when placed within the context of research showing the positive effects of working on delinquency.

²One reviewer noted a possible contradiction to our embeddedness argument. If embeddedness means that adolescents spend time in a work role, a role that may structure their lives and expose them to role models, then the time they spend committed to work should reduce their offending. Resolution of this contradiction comes from the recognition that much crime occurs in the workplace and is facilitated outside the workplace by social networks emanating from within the workplace (see Wright and Cullen 2000).

³The original survey utilized a cluster design that first designated households and then included age appropriate surveys of each respondent with the selected household. Such a design minimizes the independence of observations; respondents within households are likely to score similarly since they experience much the same environment. The loss of independence of observations can seriously bias OLS regression standard errors. To verify the robustness of our results, we also conducted hierarchical linear regression analyses. The results largely mirrored those reported here.

⁴Sample sizes varied depending on what variables were placed in the analysis. Similar to other longitudinal analyses, the majority of cases were lost when past delinquency was controlled. Part of this is a function of the sample design, since some youth were not measured on certain constructs in 1990. We replicated our analyses by including mean substitution, pairwise deletion, and by employing the EM algorithm to estimate the effects of missing data. The results in

each case mirrored those produced by the simpler method of listwise deletion so those results are shown.

⁵ This data set includes a substantial number of families who have experienced persistent poverty. However, we cannot control for the spatial distribution of poverty. The effects of working on delinquency may be varied in neighborhoods lacking economic resources. We also note, however, that the characteristics of the sample, such as comparatively higher rates of poverty, make for a more conservative test of the work-crime hypothesis.

⁶ Data from the 1994 wave became available after this article was completed. We assessed the path models with the 1994 data to ensure that our findings held when the sample size was increased. Sample sizes are 244 for the older group and 709 for the younger group.

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Appendix: Summary of Independent Measures from the NLSY-Child and the Tri-Cities Youth Employment Survey

Variables

NLSY-Child

1. Work Embeddedness. We assessed youth labor market embeddedness, cross-sectionally and longitudinally, by forming a standardized scale derived from three independent measures: the number of hours per week youths spend at work; the amount of money, in dollars, that they make per week; and the number of days, ranging from 0 to 7, that they spend at work (1988 $\alpha=.78$, 1990 $\alpha=.79$, 1992 $\alpha=.73$).
2. Attachment to Parents. We measure attachment to parents through a two-item scale that assesses the degree of closeness children feel to their parents. These two items ask the child about how close he/she feels to his/her mother or father ($\alpha=.50$).
3. Parental Supervision. First, mothers were asked how many of their child's close friends they know well. Second, mothers were asked how often they know where their child is ($\alpha=.52$).
4. Parental Expectations. We employ a ten-item scale that includes both child and mother reports. Children were asked, for example, how often they were expected to straighten their own room, to clean the house, to do dishes, and to cook. Similarly, mothers reported how often they expect their children to make their bed, to clean their room, to help in household maintenance, to do routine chores, and to manage their own time wisely ($\alpha=.80$). Higher scores on the scale reflect greater parental expectations of the child.
5. Parental Support. We employ a fifteen-item scale that includes both mother and child reports of support given or received. For example, mothers were asked whether they encourage hobbies; whether the child receives special lessons or activities; and how often the child is praised, shown affection, and complimented. Similarly, children were asked if they have gone to the

movies, to dinner, gone shopping specifically for themselves, gone on an outing, to church, done things together, worked on school work, or played a game or sport with their parent(s) in either the last week or month (alpha=.75).

6. Mothers' Deviance.

In 1980, when adolescents were fourteen to twenty-one years old, mothers were administered self-report questionnaires detailing their involvement in a number of delinquent and criminal events. Questions were also asked concerning their penetration into the criminal justice system. We used an eleven-item scale to measure mothers' past involvement in drug use, selling drugs, conning someone to obtain property, automobile theft, breaking and entering, possessing or selling stolen property, gambling, and ever being stopped, charged, booked, or convicted of a criminal offense (alpha=.88).

7. Poverty.

Families falling at or below the federal government's criteria for poverty status for both years (1990 and 1992) were coded 1, else they received a code of 0.

8. Delinquent Peer Pressure.

Although we do not have a direct measure of the number of delinquent friends, the NLSY does contain questions on delinquent peer pressure. Thus, we are able to use a scale composed of five items that assesses the extent to which adolescents have felt pressure from their friends to try cigarettes, try marijuana, drink alcohol, skip school, or commit crime (alpha=.78).

9. Gender.

1=female, 0=male.

10. Age.

Measured in years.

11. Race.

0=white, 1=minority.

12. Delinquency.

A twelve-item delinquency scale was constructed through the use of child and mother reports. Children were asked about the number of times they committed various delinquent acts, such as stealing from a store or hurting someone so bad they needed to see a doctor, if they have ever smoked cigarettes or marijuana or drunk alcohol. Mother reports ascertained whether their child(ren) had ever been suspended or expelled, or if their child's behavior had ever required them to visit school officials (1992 alpha=.88). A similar scale was constructed for delinquency in 1990 (alpha=.82) and in 1988 (alpha=.80). The items composing the delinquency scales are standard delinquency questions asked of youth since 1986, who were then age ten years and older. They have been externally validated by the Center for Human Resource Research (1992).

Tri-Cities Data

1. Work Embeddedness. A measure duplicated from the NLSY-Child data. Items composing the scale measured the average number of hours per week the youth worked, how frequently per week they worked and how much money they made, on average, per week (alpha=.89).
2. Household Size. An interval measure of the number of people living in the home of the youth.
3. Gender. 0=male, 1=female.
4. Race. 0=white, 1=minority.
5. School Commitment. A two-item measure. First, respondents reported how many hours, on average, they spend studying during week nights. Second, respondents reported how many hours, on average, they studied on the week days (alpha=.85).
6. Delinquent Peer Pressure. A seven-item scale. Respondents reported how much pressure (0=none, 1=a little, and 2=a lot) they felt from their peers to skip school, steal, shoplift, use drugs and alcohol, do things they know will get them into trouble, plan for the future (reverse coded), and do well in school (reverse coded) (alpha=.63).
7. Family Cohesion. A twelve-item scale. Respondents reported how often they do enjoyable things with their parents, talk to their parents about personal issues, talk over important issues with their parents, feel like their parents are there when they need them, miss important events, listen to their side of an argument, discuss important issues. Respondents reported how often they argue with their parents (reverse coded), how often they don't get along with their parents (reverse coded), how often each parent knows where the child is when away from home, and how often their parents asked where the adolescent was going when leaving home (alpha=.90).
8. Low Self-Control. Twelve items were taken from Grasmick et al.'s (1993) measure of low self-control. The items assessed the extent to which respondents act on the spur of the moment without thinking, do whatever brings pleasure at the moment even at the cost of some distant goal, are more concerned with what happens in the short run rather than in the long run, avoid difficult projects, avoid projects perceived as hard, find excitement and adventure more important than security, find excitable those things for which one may get into trouble, look out for themselves first even if it means making things harder for someone else, lose their tempers, and become angry. Responses were measured on a four-point Likert scale from 1=strongly disagree to 4=strongly agree (alpha=.76).

9. Respondent's Delinquency. Participants were asked whether or not they had ever engaged in one of thirteen behaviors, such as stealing items worth less than \$50.00, stealing items worth more than \$50.00, skipping school without permission, hitting someone hard enough they needed medical attention, fist-fighting, and destroying private or school property (alpha=.81). The scale was taken largely from measures found in the National Youth Survey (Elliott and Ageton, 1980).
10. Coworker Delinquency. A nine-item scale was taken from the work of Greenberger and Steinberg (1980). Items assess how often, if ever, the youths' coworkers had put more hours on their timecard than actually worked, purposely shortchanged a customer, gave away goods or services without permission, took things from their employer or coworkers, called in sick when not ill, drank alcohol or used drugs while on the job, damaged employer's property, helped a coworker steal employer's property, and lied to get or to keep a job (alpha=.83).
11. Materialistic Attitudes. A three-item scale assessed the importance of money in the adolescent's life. Respondents were asked, on a four-point scale where 1=strongly disagree to 4=strongly agree, the extent to which their goal in life was to make a lot of money, the extent to which money was very important to have, and the extent to which their goal in life was to buy a lot of things (alpha=.80).
12. Conventional Aspirations. Respondents were asked the extent to which they believed it is important to have friends they can trust, to have a family they can rely on, to do well in school, and to go to college (alpha=.65).
13. Work-Related Cynicism. A one-item measure that asked respondents, on a four-point scale, the extent to which they agreed that hard work doesn't get you very far in this world.