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Capital at Home and at School: A Review and Synthesis

Human, financial, and social capital from several contexts affects child and adolescent well-being. Families and schools are among the most important, and research is increasingly studying how effects of capital across such contexts affect child and adolescent academic and social outcomes. Some research suggests that families may be more powerful than schools in promoting child and adolescent well-being. Additional research is needed to more fully understand how capital across institutions interacts in producing child well-being, when and why multiple institutions or levels of analysis are relevant, and how several contexts can form chains of causation. Theories of social capital may promote increased conversation among researchers who study the same outcomes yet focus their analyses on different contexts.

A major function of the family is to produce and socialize children. But children grow and

develop in the contexts of multiple institutions. Although the family provides the first social context relevant for infants and very young children, the wider world takes on a larger role as children mature (Bronfenbrenner, 1979, 1989). Bronfenbrenner and Morris (1998) made a strong argument in favor of looking at child development within this framework: Their model has won widespread support in the behavioral sciences (see Han, Waldfogel, & Brooks-Gunn, 2001; Johnson, Crosnoe, & Elder, 2001; Seginer, 2006). In this review, we focus on how two such institutions, families and schools, combine to affect child and adolescent social and academic well-being, and the findings from those studies form the basis for our review.

These ideas are important because there is widespread agreement that inequality begins early in life. The families into which children are born are a major determinant of the resources to which they first will have access; families have unequal resources, and those differences influence the extent to which parents invest in their children, as well as which investments they choose. As children mature, other contexts, such as schools, become consequential. These contexts are also unequal in their resources, again with implications for investment in students. We identify three forms of investment, each of which is relevant in each context. We believe that these investments play a major role in the unequal learning and social outcomes

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Key Words: crime and delinquency, inequality, neighborhood, parental investment/involvement, schools, social capital.

that children display as they move into later adolescence.

These ideas are also relevant to policy. Of particular importance is rhetoric that surrounded the 2008 presidential election, with President Obama declaring that families and schools need to work together to improve youths' educational performance (*Reforming and strengthening America's schools for the 21st century*, 2008). Other speeches by the president have elaborated on this theme, calling for parents to communicate to their children the importance of education (Obama, 2009). Thus, both theory and policy motivate us to review how and why social contexts matter for children, and how investments at home and at school might work together to benefit child and adolescent well-being. Despite the importance of these ideas, the national policy conversation tends to isolate discussions of investment at home from investment at school. Although psychologists argue that parental involvement at school helps children (Hill & Tyson, 2009), this emphasis understates the extent to which resources from families and schools could work together to better support child academic and social outcomes.

Our review is organized as follows. First, we offer a theoretical approach featuring human, financial, and social capital that helps unify what otherwise might seem to be unrelated studies of child and adolescent outcomes. Second, we describe a few studies that focus on either family or school effects, and we trace the implications of those choices for the production of our knowledge. Third, we review recent literature that takes both family and school capital seriously in determining several aspects of child and adolescent social and academic well-being. We also note several studies that address these issues by looking at how changes in social contexts influence child and adolescent outcomes and how elements of capital are interrelated. Many of the articles we review here rely on the National Education Longitudinal Study (NELS), the NLSY79, or Add Health data sources, as these are among the relatively few sources that contain strong measures of capital from several contexts, are longitudinal, and are derived from national sampling frames. Fourth, we describe a few studies that go beyond the framework we suggest, primarily by considering how neighborhoods affect outcomes and by considering the role of genetics in social

or academic development. Finally, we suggest directions for future research.

In focusing specifically on families and schools, we regretfully neglect a few topics that are related to these concerns but beyond the scope of our review. Although we focus substantially on the role of social capital in affecting child outcomes, we cannot review the entire body of work that investigates social capital effects on child and adolescent outcomes. For example, there is substantial literature on peer effects as social capital; these often rely on analyses of networks (Haynie, 2001). Most of these studies are omitted. In related work, some have argued that children themselves can generate social capital useful in their own development (see Offer & Schneider, 2007); our focus on the investments that families and schools make in children precludes an exploration of other ways capital may be generated. In addition, there are important debates surrounding the measurement of social capital (e.g., Furstenberg, 2005) that we cannot address, as well as related discussion regarding whether specific measures reflect social capital or cultural capital (Kingston, 2001). We now describe a theoretical framework that sets the stage for the studies we review.

Theoretical Framework: Investment in Children and Adolescents

The first context children experience is their home; investments that parents make have significant and long-term consequences for children. We believe that three forms of capital—financial, human, and social—are most relevant to child and adolescent development. Regarding family financial capital, parental earnings provide the foundation for family financial support, and studies of the effects of poverty on child outcomes establish that material deprivation is inimical to child development (Bradley & Corwyn, 2002). Although other work acknowledges that after basic parental financial investment, additional money is less consequential for child well-being (Dearing, McCartney, & Taylor 2001; Yeung, Linver, & Brooks-Gunn, 2002), there is widespread agreement that very low parental earnings are a risk factor for children.

Economists have traditionally argued that investments in human capital, such as education and work experience, increase worker

productivity and earnings. But such human capital also provides assets on which children can draw (Conger & Donnellan, 2007). For example, maternal and paternal education positively affects children's home environments, which themselves are consequential for both behavioral and academic outcomes (Magnuson, 2007). Maternal Armed Forces Qualification Test (AFQT) scores predict verbal facility, as well as achievement in reading and mathematics, and stronger maternal self-concept reduces the risk of behavior problems (Parcel & Menaghan, 1994). Some of these effects may be a function of more educated and higher ability parents having high expectations for children's performance and communicating these to their children. Also, such parents may promote in-home socialization that matches the middle-class expectations of schools and teachers (on concerted cultivation, see Lareau, 2003; for qualifications of Lareau's thesis, see Maier, Ford, & Schneider 2008). In summary, family financial and human capital are both important for children.

We take a particular interest in social capital because the past decade has witnessed a surge of interest in the effects of social capital on children. Coleman (1988, 1990) argued that social capital is a resource that is parallel to financial and human capital. Accordingly, we distinguish social capital from human capital and financial capital at home (see also Bradley & Corwyn, 2002). By *social capital*, we mean resources that inhere in the relationships between and among actors that facilitate a range of social outcomes. Family social capital refers to the bonds between parents and children useful in promoting child socialization, and as such includes the time and attention parents spend in interaction with children and in monitoring their activities and promoting child well-being (Dufur, Parcel, & McKune, 2008; Hoffmann, 2002; Kim & Schneider, 2005; Parcel & Dufur, 2001a, 2001b). Critics of social capital theory contend that it fails to specify how families and individuals "generate, accumulate, manage, and deploy" social capital (Furstenberg, 2005, p. 809; Portes, 2000). Furstenberg's (2005) definition of social capital as a "stock of social goodwill created through shared social norms and a sense of common membership" (p. 810) is compatible with our view; integration in a family system typically includes shared norms and feelings of belonging, as well as social support and increased connections. Noting Putnam's

(2000) distinction between bonding and bridging social capital, these intrafamily connections refer to bonding social capital, and the bonds are presumed to facilitate the positive growth of children and adolescents. In addition, there is considerable empirical evidence that children benefit from the social connections that parents have with others such as neighbors, school personnel, and work colleagues (Crosnoe, 2004; Dufur et al., 2008; Johnson et al., 2001; Parcel & Dufur, 2001a, 2001b). These connections illustrate bridging social capital; the stronger the connections are, the greater are the resources to which children have access. The notion that parental connections with schools provide an important source of bridging social capital is one that we rely on heavily in this review.

This investment framework is also useful because, in addition to identifying family resources helpful to children, it also helps explain how resources can be diluted or diffused. For example, when there are more children in a family, all parental resources—social, financial, and human—are spread more thinly across children (Downey, 2001; Sun & Li, 2009). In addition, Coleman argued that when there are not two adults in the household or when maternal work takes mothers out of the home, investment in children might suffer. In a classic work, McLanahan and Sandefur (1994) provided strong support for the former; although the idea that there are dangers to long work hours has received some support, the overall notion that maternal work outside the home hinders child development has been overgeneralized (Goldberg, Prause, Lucas-Thompson, & Himself, 2008; Parcel & Menaghan, 1994). Still, the idea that family capital can be diluted persists because the amount of time that mothers and fathers work ties very directly to investment in child well-being.

By analogy, we argue that capital at school is also important for child and adolescent outcomes. Regarding the effects of school human capital, emphasis on the importance of strong teacher training suggests that students may draw on teachers' stores of human capital at school as they draw on parental human capital at home. In addition, some argue that schools with greater financial capital provide a better learning environment for students than capital-poor schools, although evidence for this idea has been mixed (Grubb, 2009; Rutter & Maughn, 2002).

We are particularly interested in school social capital. School social capital refers to the bonds between parents, children, and schools that support educational attainment and should have implications for social adjustment. These bonds can reflect community ties and the relationships that parents and children form with teachers, and as noted previously, are an important form of bridging social capital. A subset of this literature examining the advantages of Catholic schools is based on the notion that a common religion for many attendees, their families, and teachers promotes norms useful in improving both social adjustment and academic achievement. Although empirical evidence for this notion has been mixed (see Carbonaro, 2006) and research on the topic has waned (for a strong exception, see Morgan & Todd, 2009), the hypothesis remains of interest. That the common norms are suggested to predict both academic achievement and social adjustment is important in this analysis because we study both outcomes in our investment framework. In addition, the concept of resource diffusion is also relevant in schools, with literature addressing whether class size is consequential (Grubb, 2008, 2009; Jepsen & Rivkin, 2009; Sims, 2009). Related literature regarding the effects of parental involvement at school provides analogous findings (Hill & Tyson, 2009).

These arguments imply that capital at home and at school may each contribute to child well-being, where contributions from each sphere are additive. Sandefur, Meier, and Campbell (2006) took this approach in their study of postsecondary enrollment. Using four waves of NELS data, they found that social capital variables in both contexts were often strong predictors of enrollment, even after rigorous controls for family financial capital, family structure and family human capital were included. Their work illustrated that if measures of capital at school and at home both were included, researchers could derive some inferences regarding the relative strengths of the particular institutions from the sizes of the respective measures' effects.

Another possibility, however, is that the resources interact in their effects on academic and social outcomes. For example, Coleman (1988, 1990) argued that parental human capital, no matter how high, will not automatically result in improved child outcomes unless there is sufficient family social capital to allow children access to parental resources. For

example, higher levels of maternal education may make more of a difference if mothers are more engaged with children's schoolwork, thus supporting child socialization. Because parents who occupy favored positions in our stratification system may select resource-rich schools, whereas children of poorer parents often end up in resource-poor schools, matching of home and school conditions should be common.

In the social sciences, it is widely believed that these conditions are prevalent because they reflect the idea that children who are favored in one context are often favored in another, thus leading to institutions that reinforce or exacerbate one another's effects, either for good or for ill. These effects are resource boosters (Parcel & Dufur, 2001a) or complementary resources. For example, Crosnoe (2004) identified interaction between family and school resources as part of Bronfenbrenner's (1979, 1989) mesosystem and found resource boosters operative in his study of adolescent academic achievement. If resource boosters are pervasive, then inequality increases. For example, Haveman, Sandefur, Wolfe, and Voyer (2004) and Bianchi, Cohen, Raley, and Nomaguchi (2004) worried that, as family income inequality has increased, with increasing variation in family ability to invest in children, the fates of youths have become more sharply differentiated, resulting in increasingly divergent groups of the advantaged and disadvantaged.

Alternatively, Domina (2005) argued that as family social capital declines, school resources become more important in increasing achievement; the same might hold for social outcomes. In this case, favorable conditions at home may offset unfavorable conditions at school, or vice versa. For example, parents who live in school districts with modest levels of school investment may construct home environments that compensate for what children experience at school. Likewise, schools may be more important for children for whom there has been reduced investment in capital at home. These are compensating effects, or substituting resources. If there are significant numbers of compensating effects, such findings may point to policy regarding how elements of family and school investment might compensate for one another. For example, if teachers have strong human capital, does having less educated parents matter less?

Effects also may interact and reach a limit, either a ceiling or floor, in their consequences.

For example, perhaps a combination of strong maternal mental ability and strong teacher qualifications both promote child achievement but in combination have more modest effects than the strictly additive models would suggest. These are threshold or ceiling-floor effects. If there are large numbers of compensating and threshold or ceiling-floor effects relative to resource boosters, then despite some degree of association between investment at home and at school, the joint effects of these investments do not automatically boost or hinder children who experience this type of matching in investments across sites.

What Happens When We Study Either Family or School Effects?

As noted previously, most investigations of family effects are conceptualized and conducted to focus solely on how families' characteristics affect children. These studies are frequently outstanding in their own right (Hawkins, Amato, & King, 2006) and are too numerous to be reviewed here. The role of other institutions (e.g., schools) is not considered. To be sure, all studies must narrow their scholarly focus to become manageable, and we have learned a great deal from such investigations. Studies designed to investigate school effects take a different approach, with measures of family background, particularly parental human and financial capital, often introduced as controls. These controls, however, are frequently few in number and detailed attention to their measurement may not be a priority. Researchers in this area recognize the limitations (for a thoughtful discussion, see Ehrenberg, Brewer, Gamoran, & Willms, 2001), and, again, these studies are too numerous to be reviewed here.

As a group, studies such as these fall prone to up to three forms of specification error: (a) error derived from omitted variables tapping the other institution, thus overattributing causation to the variables reflecting the institution that is included; (b) error from including incomplete and/or suboptimal controls for the other institution, thus again overattributing effects to the included and/or better measured institution; and (c) error derived from neglecting the possibility that resources across institutions interact. This third form of specification error is guaranteed if either the first or second forms of error are present and if interaction between dimensions of capital across institutions is present.

Recently, however, researchers have made significant progress in simultaneously studying the effects of both families and schools on child and adolescent well-being. We now review such studies looking at academic outcomes. We then turn to comparable studies of social adjustment, including both behavior problems of younger children and delinquency outcomes of adolescents. In each case, we focus primarily on studies that (a) inform our thinking about which capital investments at home and at school influence child outcomes; (b) allow for inferences regarding the relative importance of each institution in their effects; and (c) reveal the nature, extent, and strength of interactive effects of investments across institutions. We also feature studies that use longitudinal data to provide the best evidence regarding causal order, including those that use techniques such as growth curve modeling, thus strengthening causal inferences.

Effects of Families and Schools on Academic Outcomes

Several studies analyze the effects that capital at home and at school have on child and adolescent learning, and a subset displays how such resources interact in their effects. Parcel and Dufur (2001a) demonstrated that each type of capital—human, financial, and social—influences child academic achievement. Using matched data on mothers and 5- to 14-year-old children from the 1992 and 1994 NLSY79, they found that dimensions of parental and child human capital were persistent and important determinants of improvements in reading and math achievement; family social capital was also consequential. School capital effects were more modest. They found boosting effects: When children had access to both higher levels of maternal measured mental abilities and caring teachers, they achieved more in mathematics. In addition, higher maternal measured mental abilities and teacher skill reached a threshold in predicting mathematics achievement, and higher levels of measured maternal mental abilities compensated for being in schools with lower teacher human capital.

In related work, Parcel and Dufur (2009) studied why children in the southern, western, and north-central states scored lower than children in northeastern states on standardized tests of reading and math achievement. Although

additive forms of capital at home and at school explained most of the differences, interactive effects were needed to explain differences in reading achievement between girls who live in the northeastern and north-central regions. Specifically, there were threshold effects involving maternal human capital and school financial capital, as well as between family social and school financial capital. In summary, interactive combinations of capital from home and school helped to explain residual differences left unexplained by additive models.

Dufur and Troutman (2005) studied the effects of family capital on academic outcomes including the creation of social capital with teachers as they varied by family structure. They used the NELS 1988 data to examine whether effects on school-related outcomes of adolescent employment differed for students who had different levels of access to human, financial, and social capital. They found that students who lacked capital resources because of deficits related to their family structures experienced negative academic consequences.

Similar to Parcel and Dufur (2001a), Crosnoe (2004) argued for the importance of studying both families and schools as relevant contexts for affecting adolescent academic performance, as well as the interaction of characteristics across these contexts. Using the National Longitudinal Survey of Adolescent Health (Add Health) to study the grades of 10,465 adolescents, he found that both social capital at home and social capital at school exerted significant main effects on academic achievement and that greater social capital at home positively interacted with greater social capital at school, a boosting effect. He also found a compensating effect: Student-teacher bonding at school offset the effects of parent-adolescent emotional distance. In addition, Kim and Schneider (2005) found that parental participation in school guidance programs can compensate for lower levels of parental education in promoting children's postsecondary enrollment.

Not all investigations have found that social capital affects academic achievement. Domina (2005) used the NLSY79 to examine the relationship between parental involvement in schools—an aspect of social capital that connects parents to schools—and child academic performance. Studying 1,445 elementary school students beginning in 1996 and following their achievement over time, he found that parental

financial capital and prior child achievement often explained the effects of other forms of capital. Interestingly, however, he identified an interaction between financial and social capital at home, such that parental involvement at school was more important for lower socioeconomic status (SES) than for higher SES parents. In other words, high parental social capital can compensate for lower financial capital in promoting child achievement. Unfortunately, low-SES families whose children would benefit more from social capital created less of it: Low-SES parents were less engaged with the school in terms of volunteering, parent-teacher association (PTA) membership, and helping with homework. Domina (2005) also applied these models to studies of behavior problems and found that parental social capital had protective effects.

Consistent with our focus on inequality, it is important to note that race often appears only as a control variable in analyses of the effects of capital at home and at school (e.g., Carbonaro, 2006). When race is explicitly included in analyses of social capital effects, it typically takes the form of predicting racial gaps in achievement or behavior problems. Only a few studies investigate whether students from different ethnic backgrounds have access to different kinds of family social capital or if they create it differently. For example, Smith, Denton, Faris, and Regnerus (2002) demonstrated differences in church attendance and affiliation across racial groups; church attendance has been used an indicator of family social capital in previous research. Richardson (2009), who studied the supportive role of African American uncles, argued that extended family structures among minority families contain more adults with whom youths can build social capital.

Similarly, full consideration of school-based capital requires an appreciation of school-level disparities in such assets on the basis of race and ethnicity. Some studies suggest that status as a racial or ethnic minority shapes the social experience of school, thus influencing feelings of school cohesion and academic engagement (see Johnson et al., 2001). In addition, racial and ethnic segregation in schools persists and has consequences for educational attainment (Goldsmith, 2009). Segregation disadvantages students by limiting stores of valuable social capital: Students in predominantly minority schools lack

social relationships with advantaged Whites. Alternatively, students exhibit greater academic engagement and attachment when they attend schools with high concentrations of students who are of the same race or ethnicity as themselves (Johnson et al., 2001). Ream (2005) encouraged greater sensitivity to inter- and intraethnic variation in how moves may disrupt social capital accumulation, with possible implications for academic achievement. Furthermore, research on race, capital, and educational outcomes suggested that non-White students receive lower returns to social capital (Perna & Titus, 2005). Thus, race and ethnicity matter for academic outcomes at both the individual and the school levels. In summary, researchers have made a start in detecting boosting, compensating, and threshold effects on child and adolescent academic outcomes. Much work remains to be done to provide a comprehensive picture of these interactive effects. This should also include attention to racial variation in both student access and returns to capital at school.

Effects of Families and Schools on Social Outcomes

Additional work demonstrates that focusing on capital at home and at school is also useful in studying behavior problems, juvenile delinquency, and drug use. We begin with studies of social outcomes of younger children and continue to analyses of delinquency of older children. In doing so, we argue that social outcomes are important at any stage of development; as children mature, the specific outcomes most relevant to tapping social adjustment change.

Capital Effects on Child Social Adjustment

As with academic outcomes, researchers have studied how investment at home and at school additively affects child social outcomes, and a subset of investigations also portray interactive effects. Parcel and Dufur (2001b) examined the ways capital created in different contexts might work together to promote child adjustment, measured by avoiding behavior problems. Studying the effects of three kinds of capital—financial, human, and social—on behavior problems of 5- to 14-year-old children from the 1992/1994 NLSY79, findings showed that each type of capital influenced behavior problems, with family capital exerting stronger effects

than school capital. Investigating interactions, they also found several boosting effects, as well as threshold effects. They found, however, even greater numbers of compensating effects. For example, higher levels of social capital in the form of child church attendance blunted the negative effects of family size and low birth weight. Also, when principals reported low school social capital in the form of many school social problems, children were better adjusted when their parents monitored their children's locations, a form of social capital at home. In addition, when children attended public schools rather than private schools, they were better adjusted when mothers had higher levels of human capital in terms of maternal mental abilities.

Dufur et al. (2008) used structural equation modeling to examine child behavioral problems as a function of social capital at home and at school. Analyzing behavior problems among 5- to 14-year-old children with the NLSY79, confirmatory factor analyses provided an overall summary measure, again suggesting that family social capital had more influence on behavior problems than did school social capital. They also demonstrated that there were two separate forms of social capital, one in the family and one at school, and that distinguishing between those types of capital can help us better understand the protective effects families and schools can have on negative behaviors. This study is important because the confirmatory factor analytic models allow us to examine whether and to what extent individual indicators reflect a concept that we have labeled as social capital, as well as to uncover how the structure of this construct is configured in relation to other concepts. Thus, the findings help us to shed light on some of the recent debates that have surrounded the measurement of social capital.

Vandewater and Lansford (2005) also studied the effects of social capital at home and at school on adolescent internalizing and externalizing problems. Measures tapping social capital at home included family warmth, mother-adolescent conflict, and mother distress; measures of school stress included theft at school, threats at school, and feelings about school. They also tapped financial and human capital at home using indicators including income-to-need ratio, worry about bills, and maternal education. They found that SES influenced internalizing and externalizing problems through its effects on school stress, family warmth, and conflict, thus

broadening the understanding of the causal paths through which aspects of capital are influential.

Several studies have provided evidence regarding whether there is interaction between capital at home and at school. For example, Meehan, Hughes, and Cavell (2003) studied characteristics of relationships at home, such as parental harsh discipline and conflict, as well as at school, such as relationship quality with teachers, to predict aggression among 140 aggressive second- and third-grade children. Regression analyses suggested that supportive child-teacher relationships reduced aggression, more so for Hispanic and African American children than for White children. In addition, poor child-parent relationships did not moderate the child-teacher relationship effect. Although not framed in terms of social capital theory, they concluded that teachers should work to foster positive relationships with aggressive children, particularly minority children who appeared to benefit most from this support.

Hoglund and Leadbeater (2004) analyzed the additive and interactive effects of school and family-based capital among 432 first-grade children across 44 classrooms in 17 schools on social competence, emotional, and behavioral problems. Predictors included school-based social and financial capital, such as victimization at school, concentrations of peer prosocial behavior, and proportion receiving income assistance, as well as family-based human capital, such as mother's education. They also inferred reduction in social capital by tapping residential moves, which some have argued decrease social capital, as we discuss herein. They found that social capital at school predicted increased social competence; low school financial capital had the opposite effect. Students who moved often and who attended disadvantaged schools experienced greater increases in problem behaviors. Frequent moves and low maternal human capital produced increases in emotional problems, but only when children were in classrooms with low concentrations of prosocial behavior. In other words, there was a significant interaction between social capital at school and capital at home, suggesting that prosocial school environments may have compensated for the effects of low levels of home-based social and human capital. Interestingly, they found that school disadvantage was only a significant predictor of behavior problems and social competence when family-based capital

and classroom-based variables were included in the model, which suggests that family- and classroom-based factors operated as suppressors (i.e., as compensating effects). They suggested that disadvantaged schools contributed to behavior problems because they both concentrated children who modeled aggressive behavior for one another and provided fewer resources for dealing with such problems.

Finally, Rodgers and Rose (2002) looked at the cross-sectional relationship between marital transitions and adolescent well-being. They studied whether social capital at home and at school moderated the effects of marital transitions, as tapped by family structure. Parental monitoring and school attachment, reflecting social capital, had strong main effects on externalizing problems in the direction predicted. Clearly, capital at home and at school interact in their effects on child social outcomes, but we remain in the early stages of having a comprehensive picture of these processes.

Families, Schools, and Delinquency

Recently, criminologists have both implicitly and explicitly incorporated social capital into their examinations of delinquency. Indeed, constituent elements of social capital—social ties, social control, collective efficacy, and mutual trust—form the basic building blocks of major criminological theories (Kubrin & Weitzer, 2003). McCarthy, Hagan, and Martin (2002) posited that the social capital perspective provides an umbrella for integrating multiple criminological theories. These elements of social capital function as both individual and collective resources in the delinquency literature; social bond and microlevel strain theories use social capital as an individual resource, and social disorganization and macrolevel strain theories treat it as a school- or community-level asset. Despite attention to families, analyses of school-based capital—social, human, or financial—are rare. Also, although researchers often include financial and human capital at home in their models, they typically do so only as controls. Nonetheless, several studies take both schools and families seriously. Using NLSY79 data, Luster and Oh (2001) found that parental monitoring and respect for mothers were strong predictors of handgun carrying among male adolescents. Social capital at school—in this case, a threatening or positive school

context—failed to influence this particular form of delinquent behavior in their more rigorous statistical tests. Other researchers interested in independent effects of capital, however, have identified an effect of school-based capital on delinquency. Booth, Farrell, and Varano (2008) found support for a school-based effect in a cross-sectional study of 1,366 high school students. In particular, elements of school climate and school involvement emerged as important sources of variation in both serious delinquency and risky adolescent behavior. Furthermore, they failed to find a connection between social capital at home, as measured by attachment to parents, and risky behavior; parental attachment was significant only for boys when modeling serious delinquency. Similarly, using a sample of 808 adolescents from the Seattle Social Development Project, Chung, Hill, Hawkins, Gilchrist, and Nagin (2002) found that school bonding decreased minor and serious delinquency, whereas parental attachment and family management did not.

In contrast, Dornbusch, Erickson, Laird, and Wong (2001) found that both family- and school-based social capital, measured as parental attachment and school connectedness, were associated with the frequency and intensity of delinquent behavior among youth in the Add Health study irrespective of gender, ethnicity, or community disadvantage. Similarly, in a study of at-risk Hispanic adolescents, Schwartz and colleagues (2009) found evidence that both school- and family-based social capital influenced conduct problems. Their indicators of family-based capital, which they call family functioning, included family cohesion, support, involvement, and communication; school-based capital indicators included school bonding, classmate support, and teacher support. Wright and Fitzpatrick (2006) and Meadows (2007) also found evidence for the independent and significant influence of family- and school-based social capital on delinquent behavior using Add Health data.

Social capital, though typically conceptualized as a positive and valuable asset, may also take the form of negative or inferior social capital. Because norms are a form of social capital (Coleman, 1988), transmission of negative norms can lead to negative behaviors. Unnever, Colvin, and Cullen (2004) examined the effects of coercive home and school environments on delinquent behavior of middle school students.

Coercion represented the presence of negative social capital rather than simply the absence of beneficial social capital. They identified delinquency-producing effects of negative social capital in multiple domains, including home, school, and neighborhood; positive parental and school bonds decreased delinquency. Also, with social capital included, financial capital at home became nonsignificant. Thus, recent findings that reveal the relative importance of family- and school-based capital are mixed, with some suggesting that school characteristics are more salient than family factors, others suggesting the reverse, and still more finding that both sources of capital are important for understanding delinquent outcomes. Furthermore, not all types of capital at home and at school are equally predictive of delinquency (Salmi and Kivivuori, 2006).

Some researchers assess the direct and indirect effects of capital in multiple domains. For example, in examining the effects of preschool participation on delinquency among 1,404 adolescents in the Chicago Longitudinal Study, Reynolds, Ou, and Topitzes (2004) found that school and family support were associated with delinquent behavior and mediated the long-term effects of preschool intervention. Attendance at magnet schools, school commitment, and parental participation in school during middle childhood decreased the likelihood of arrest by age 18. In addition, parental neglect during childhood—the absence of social capital—was indirectly linked to later delinquency. Using National Survey of Families and Households (NSFH) data, Vandewater and Lansford (2005) found that financial capital at home operated indirectly through altered social contexts, including school stress and within-family conflict, to influence externalizing behaviors. Thus, decreased financial capital has negative consequences for behavior through its detrimental impact on school- and family-based social capital.

Researchers also have begun to employ multi-level analysis to identify individual- and school-level predictors of delinquency, a strategy that helps detect interactive effects across contexts. Hoffmann and Dufur (2008) used data from the NELS and Add Health to evaluate whether school capital compensates for a lack of family capital in preventing juvenile delinquency. Results showed that high-quality schools partly substituted for poor parental attachment and low parental involvement in school, with

the compensating effects especially strong for low-achieving youths. Brezina, Piquero, and Mazerolle (2001) examined school- and individual-level variation in aggression using Youth in Transition survey data. School size, reflecting a dilution of capital, and school-wide norms favoring aggression stood out as predictors, regardless of individual students' approval of aggression. Similarly, Harris, Duncan, and Boisjoly (2002) identified the effects of school climate on risky behaviors including delinquency using Add Health data. Their results suggested that schoolwide conditions, including aggregate educational expectations, were stronger than individual-level predictors such as human capital at home in the explanation of adolescent risky behavior. In summary, as with younger children, burgeoning research suggests both additive and interactive capital effects on adolescent social outcomes. Families continue to be a salient source of influence for adolescents in addition to effects of school academic and social environments. We still know too little, however, regarding the interplay of resources from home and school as these youths mature.

Context Mobility

As noted in several studies described herein and derived from Coleman's (1990) arguments that geographical mobility disrupts the ties that neighbors form with one another, some researchers have used studies of family geographical mobility to infer the role of social capital in predicting child and adolescent well-being. Movers must reestablish ties in another neighborhood, as their departure from the original location weakens, at least marginally, the networks to which everyone in that location has access. Some studies suggest that there are no notable disruptions in capital processes following a move. For example, South, Haynie, and Bose (2005) examined the association between residential moving and onset of adolescent sexual activity. Proposed mediating variables included family social capital and parental involvement in school. Contrary to expectations, social capital did not account for differences in sexual activity onset between movers and non-movers; instead, it appeared to be a function of peer group composition.

DeLuca and Dayton (2009) provided an insightful review of how changes in child and

adolescent school and/or neighborhood context may change the resources children can access as they mature. They found that children who changed neighborhoods had improved surroundings but that better neighborhood characteristics did not translate into measurable and sustained gains in educational outcomes, perhaps because among families that did move, most characteristics of those families remained the same. Effects on social outcomes appeared to be more detectable but, again, were not substantial. Voucher programs in which children and adolescents change schools may have some positive effects on educational outcomes, but not all studies demonstrated those effects, making it difficult to conclude definitively that voucher programs promote child educational well-being. These findings suggest the importance of family characteristics for producing child outcomes, even when there are opportunities to change other important social contexts such as neighborhoods and/or schools.

Similarly, Pettit and McLanahan (2003) found that, though moving was disruptive for children, there was both positive and negative selection in moving. That is, the less advantaged who moved had difficulty establishing new social ties because of their initial disadvantages, whereas the more advantaged who moved to middle-class neighborhoods experienced only minor disruptive effects. Gruman, Harachi, Abbott, Catalano, and Fleming (2008) used growth curve analysis to investigate the effects of school mobility on school engagement among elementary school children. Controlling for family financial capital with family income, they found that school social capital had positive effects on growth trajectories, particularly among children who lost social capital because of high levels of school mobility.

Indirectly, then, these studies reinforce the importance of family characteristics for promoting child and adolescent well-being. However, they also reinforce points made by Mouw (2006) regarding the endogeneity problem that plagues many studies of social capital effects. Specifically, he argued that, given the tendency for individuals to place themselves in contexts with others like themselves, it can be difficult to untangle the effects of such selection from the capital characteristics themselves. Although his review focused on social networks as social capital, his general point is relevant for our thinking, as well.

*Financial and Human Capital at Home
and at School*

There are long and substantial histories of studying the effects of financial and human capital at home and at school on child outcomes (Grubb, 2009). Such analyses continue traditions of looking at whether money matters in schools, and how elements of family human and financial capital set the trajectory for children's academic and social success; as such, they directly inform thinking regarding the role of families and schools producing and ameliorating inequality. We have focused on the more recent surge of social capital analyses. In this section, we cover studies of human and financial capital more selectively. In addition, analyses focusing substantially on human and financial capital often use measures reflecting social capital, even if researchers do not explicitly use the concept.

In *The Money Myth*, Grubb (2009) argued that to improve educational outcomes, money (financial capital at school) was necessary but not sufficient (NBNS). He argued that we must move beyond analyses of the effects of simple resources (e.g., pupil-to-teacher ratio) on student outcomes to the study of compound (e.g., types of teacher experience), complex (e.g., teaching techniques) and abstract (e.g., school climate) resources because money that did not improve some of these latter resources was often wasted (Grubb, 2009, p. 42).

Grubb's (2009) analyses suggested that not all school resources had the same type of impact on students, with some resources promoting progress through school but not learning, and that parental capital effects may be more consequential for some student outcomes than for others. Although Grubb discussed financial capital explicitly, many of his variables, particularly those tapping complex and abstract resources, reflected social capital and predicted student outcomes. Although Grubb (2009) briefly argued that family and school resources did not interact in their effects on student outcomes and that school resource effects might be stronger than family resource effects, his work underscored the importance of viewing both families and schools as critical contexts for investment in student outcomes and the importance of specifying which student outcomes are most affected by which combinations of resources at home and at school. He also favored policies that boosted families as well as schools, noting that policies

to fix either one or the other institution will be ineffective (Grubb, 2008).

In addition, economists have also analyzed how family financial, human, and social capital can promote child well-being. Heckman (2008) summarized a wealth of literature that championed the importance of families in avoiding such outcomes as high school dropout, crime, teenage pregnancy, and ill health. He argued that ability gaps develop early; that family environments, on average, have deteriorated over the past 40 years; and that the gap between middle-class and disadvantaged families has widened. He suggested that family environments of young children were major predictors of later success and that the quality of parenting, what we call social capital, was what counted, not necessarily family economic resources. In addition, early interventions were more efficacious and efficient in promoting schooling and health generally, whereas later interventions, such as improved pupil-to-teacher ratios, job training, adult literacy programs and police expenditures, had weaker economic returns. Thus, although the concept of social capital was not named in his review, his evidence was strongly on the side of aspects of parental human and social capital as most consequential for reducing economic disadvantage; remediation of children's school resources, obviously operating later in the child's life, will be less efficient in promoting optimal child well-being.

In related work, Farkas and Hibel (2008) found that a variety of family resources—financial, human, and social—were critical to helping children be both academically and socially ready to begin schooling. Reynolds et al. (2004) also demonstrated the importance of early intervention in promoting educational attainment and reducing the likelihood of juvenile arrest, arguing for the positive role of both high-quality schooling and parental support in promoting positive outcomes.

*Beyond Families and Schools: Neighborhoods,
Genes, and . . . ?*

Although studies of capital at home and at school are the primary focus of this review, Bronfenbrenner's (1979, 1989) framework identified multiple settings relevant to child and youth development. At the same time, there is a strong tradition in sociology of looking at the effects of neighborhoods on the lives of their inhabitants,

and we have already noted the importance of neighborhoods in analyses of delinquency (see also Pebley & Sastry, 2004).

It is encouraging that several studies investigate the effects of families, schools, and neighborhoods on child or adolescent outcomes, although they tend to emphasize additive rather than interactive effects. Ainsworth (2002) analyzed data from 13,196 10th graders from the 1988 NELS matched to 1990 census data by zip code. He found that living in a neighborhood with high-SES residents was an important predictor of educational attainment independent of several family and school capital controls, but that mediating factors including school atmosphere, educational expectations, and whether students' friends were dropping out explained 40% of the effect. Although some interpretations did not rely on social capital and he did not report any statistical interactions, the study seriously considered the relative impacts of neighborhoods, families, and schools on adolescent educational attainment.

Roscigno, Tomaskovic-Devey, and Crowley (2006) also used NELS linked to Common Core data to study how differences in rural, urban, and suburban location led to family and school differences in both test score achievement and dropping out of school. They argued that families and schools were embedded in places that were more or less resource rich. In addition, they distinguished between family or school resources and the investments those institutions may make. Although low resources likely lead to low investment, higher resources may not automatically lead to higher investments. For example, counties experiencing significant out-migration of labor may not invest in schooling because those educated there are likely to leave to work elsewhere. They demonstrated that inner-city and rural disadvantages in family and school resources led to lower investment in schooling, thus partially explaining lower test scores and increased dropouts in those locales. The authors tested for interactions across resources and found only two small such effects. In summary, their study provides compelling evidence that there is a causal chain of contexts that link neighborhoods to schools and families, with family and school resources being a partial function of community context.

Cook, Herman, Phillips, and Settersten (2002) produced family, school, peer group, and neighborhood data from 12,398 middle school

students between 1990 and 1995 in Prince George's County, Maryland. Studying both academic and social outcomes, they found that, although measures of capital across contexts were positively related, the relationships were not very strong, which suggests that measurement of one context cannot substitute for another—or as we have phrased it, that matching of characteristics by contexts was not strong. In addition, taken together, the effects from characteristics of the several contexts were substantial, though additive and not interactive. Most recently, Goldsmith (2009) found that, in the presence of numerous controls for capital at home, concentrations of African Americans and Latinos in schools but not in zip code areas was associated with lower educational attainment over time. As a group, these studies suggest variation in the relative strength of neighborhood and school effects; more work is needed to evaluate the relative importance of contexts on various child and adolescent outcomes.

There has also been increasing interest in the effects of genes on behavior. Many relevant studies have been reviewed elsewhere (Horowitz & Neiderhiser, forthcoming), and Nisbett (2009) has argued strongly for the interplay between genes and environments (for a critique of Nisbett's work, see Lee, 2009). We highlight two studies that contribute to our thinking about families and schools as contexts for student achievement. Using Add Health data, Shanahan, Vaisey, Erickson, and Smolen (2008) found that TaqIA risk, or dopamine receptor type 2 (gene *DRD2*), decreased the likelihood of college enrollment for both African American and White boys. They found that an environmental contingency, which they termed *social capital*—a combination of high parental SES, high parental involvement at school, and high-quality schools—compensated for this genetic risk. However, boys with TaqIA risk were unlikely to have access to this form of capital. Although school characteristics did not play a major role in their analyses, they advanced important arguments about how genetic context may interact with family context to affect social outcomes. More in line with our focus on both families and schools, Shanahan, Erickson, Vaisey, and Smolen (2007) found that boys with TaqIA risk were less likely to have mentors at school than were boys without this risk, but when they did, mentors helped compensate for the risk by promoting continuation of schooling

beyond high school. The two studies illustrate the importance of taking seriously the genetic level of analysis in the study of capital effects on child and adolescent outcomes.

Directions for Future Research

Researchers have clearly demonstrated that the contexts in which children and adolescents develop are relevant for their well-being. However, the specific contexts they deem important vary by intellectual tradition. By definition, family scholars believe families are important, but they often neglect school effects, thus potentially overattributing child outcomes to family characteristics. Although education researchers acknowledge the importance of families in their conceptual arguments, detailed attention to the measurement of family structure and capital is often lacking. Delinquency research illustrates that both family- and school-based social capital are salient for understanding behavior. Nevertheless, schools generally remain absent from the delinquency literature, whereas neighborhoods, peers, and families have a long legacy of empirical study. Failure to consider school characteristics in the production of delinquency may lead researchers to overstate neighborhood effects.

We believe that researchers across these different traditions have much to learn from one another. If we take the goal of accumulation of findings seriously, in the years ahead, there may be diminished returns to studies that focus on the effects of one institution at the exclusion of another, assuming that both are theoretically relevant. Considering the studies that have analyzed both capital effects at home and at school, there is some evidence that home effects are stronger than school effects (Parcel & Dufur, 2001a, 2001b, 2009). This finding echoes traditional school effects literature produced in earlier decades. We note, however, that it is not necessary to directly measure capital at home and at school to derive inferences about the relative power of the respective institutions. Downey, von Hippel, and Broh (2004); Downey, von Hippel, and Hughes (2008); and Alexander, Entwistle, and Olson (2007) studied the rates at which students learn both during the school year and during the summer months. They concluded that learning occurred at reasonable rates during the academic year but that learning gaps increased during the summer months. These findings suggest that when school is not in

session, family resource inequality is influential in increasing achievement gaps among children; this conclusion also echoes Heckman's (2008) summary regarding the powerful role of families in producing unequal outcomes among children. These studies did not focus on measuring family and school investment as such, but the strategy of comparing rates of learning in the summer and the academic year nonetheless provides important inferences regarding the respective power of schools and families to influence learning outcomes. Thus, the findings demonstrate that the strategy of directly measuring capital at home and at school is not unique in its ability to detect the relative power of institutions in promoting child and adolescent well-being. However, measuring rates of learning at different times does not, by itself, allow us to understand which various dimensions of investment by schools and families are responsible for learning effects.

In addition, such studies, as well as those that measure only the characteristics of one institution or that measure the second only with weakly measured controls, may fail to detect statistical interaction between or among resources from families and schools, assuming that such interaction is present in the population. As of now, many investigations fail to investigate such interactions, and findings to date do not enable us to conclude whether boosting, threshold, or compensating effects predominate. This is an important direction for future research, and its success will depend, in part, on investigators' willingness to test hypotheses that take more than one institution seriously in analyses of social outcomes and their willingness to theorize about how resources from that institution may interact with resources from another. Increasing use of multilevel analysis will facilitate testing of such hypotheses because, as noted earlier, this method can detect interactions across contexts. At the same time, such research will also depend on data availability. When large investments in new data are made, the production of data with independent variables from multiple contexts needs to be a high priority. In addition, researchers need to make sure that poor measurement of key indicators does not thwart good intentions to measure multiple dimensions of multiple contexts. We are hopeful that the future will see appropriate attention devoted to quality of measurement.

Another important direction for future research will be to uncover the causal paths through which capital in one institution may

affect capital in another, thus forming a more elaborate causal chain of effects on child outcomes. For example, because children and adolescents spend a great deal of time at school, neighborhood effects among youths may operate through differential school conditions (see Pong & Hao, 2007). In addition, community and neighborhood characteristics may affect schools' abilities to make investments in youths (Roscigno et al., 2006). This is a direction for research that is complementary to our focus on measuring multiple forms of capital at home and at school and assessing both their additive and interactive effects. It is also consistent with increased recent emphasis on the importance of longitudinal research on child and adolescent academic and social outcomes, as well as theoretical treatments that connect Bronfenbrenner's (1979, 1989) arguments on multiple contexts with longitudinal models in life course research (e.g., Elder & Shanahan, 2006).

The studies we have reviewed here were almost entirely nonexperimental. Many have argued that such studies do not permit us to establish causality. Rutter (2007) provided a detailed discussion of how several quasi-experimental designs allow researchers to rule out at least some alternative explanations for effects beyond what is possible with nonexperimental studies; unfortunately, the issues addressed in this review are typically not ones that can be addressed via experiments. It is encouraging, then, that researchers have used other strategies to strengthen causal inferences. Several used longitudinal modeling, such as growth curve analyses, in studies of capital effects on child and adolescent outcomes (e.g., Cheadle, 2008; Domina, 2005). In addition, Crosnoe (2009) used propensity scores and robustness indices to strengthen his causal inferences in a study of the effects of family-school communication effects on adolescent math placement. Thus, when experimentation is not possible, analysis of these issues will require the use of longitudinal data as well as, often, the use of longitudinal modeling.

The role of race and ethnicity as moderators of investment at home and at school has also been underresearched. To take seriously the role of race and ethnicity in the scholarship on capital at home and at school, researchers must acknowledge potential race- and ethnicity-based differential returns on similar levels of capital. They must also pay attention to the influence

of racial and ethnic composition of schools as predictors of school- and individual-level variation in both social capital and academic and social outcomes. In addition to improving the understanding of the conditional influence of family- and school-based capital on adolescents' well-being, this will draw the attention of policy makers to the role of persistent school segregation in reproducing inequality. To move forward, researchers must move beyond examinations of just African American and White students to include Latino and other minority populations (Cook et al., 2002; Guilamo-Ramos et al., 2009). The large, nationally representative surveys typically used in the literature on capital and child outcomes are valuable because they oversample minority populations. Given the availability of these resources, researchers should be treating race and ethnicity both additively and interactively in their analyses. Such analyses would show how race conditions capital effects on child and adolescent outcomes.

We also believe that the future will bring an increased focus to additional additive and interactive analyses that include genes, families, schools, and neighborhoods as determinants of child social and academic well-being. Although genes can be categorized as human capital that children inherit from biological parents, analyses of the effects of genes on academic and social outcomes brings in another level of context from Bronfenbrenner's (1979, 1989) framework, one that goes well beyond traditional analyses of human capital that use measures such as years of education, experience, and/or health. The models that scholars concerned with genetic effects analyze take interactions seriously, looking for the social conditions in which genes are either activated or suppressed. They are, therefore, analogous to those we have reviewed that show how capital across institutions can interact to affect child outcomes.

Finally, the extent to which researchers have used a capital framework in analyses that do take multiple contexts seriously varies greatly. Recently, there have been an increasing number of studies that have used social capital theory to guide analyses. Additional studies, however, use measures that fit within a social capital framework without identifying them as such. For example, the delinquency literature, although guided explicitly by criminological theory, often only implicitly examines social capital theory (although see Salmi & Kivivuori,

2006; Wright, Cullen, & Miller, 2001). As McCarthy et al. (2002) noted, social capital theory might serve as an umbrella under which numerous criminological perspectives could be unified both within criminology and across other traditions that study the same academic and other social outcomes. Grubb's (2009) work is also a case in point; it used a wealth of indicators reflecting social capital at home and at school without tying the findings to social capital theory.

We will continue to debate how to best measure social capital in the years ahead. To be sure, there is plenty of room within and across fields for investigators to use several theories and approaches to guide research. For example, not everyone will agree that unifying disparate measures under the larger umbrella of capital is advantageous (Furstenberg, 2005). Although analysis of covariance strategies can be used to assess the extent to which measures are either related or disparate (Dufur, et al., 2008), this strategy is not always empirically feasible, and/or it may conflict with other important research goals. However, if, again, we take accumulation of findings seriously, using a common theoretical perspective may be helpful. Such an approach has the potential to promote parsimony by unifying what might otherwise be viewed as very different theories and may encourage researchers from different subfields, such as delinquency, family and education, to engage in more serious conversation with one another. It also has the potential to relate studies of peer networks to the studies we have included.

We conclude with some brief comments on policy. For decades, schools have been assigned many tasks beyond teaching academic basics, including preparing citizens for democracy; integrating immigrants into U.S. culture; and more recently, ameliorating social inequality. Our review has suggested that, as an institution, families may be more important than schools in creating and exacerbating such inequality, although additional research is needed. No Child Left Behind (NCLB) and similar legislation, however, have placed significant responsibility on schools. Perhaps pessimistically, Cheadle (2008) suggested that schools might always be asked to compensate for inequalities arising from family life, regardless of the effectiveness of such interventions. Some have argued that only especially motivated families may be prepared to promote the upward mobility of their children,

and thus schools need to play a major role. At the same time, there are many examples of families throughout history who have been especially motivated to promote child well-being. The debate regarding which interventions should be the responsibility of the school and which the family will continue. Clearly, both institutions are critical, as are combinations of resources from each.

Two additional policy directions are noteworthy. First, some have argued that year-round schooling may be helpful to children in reducing the summer learning gap. A meta-analysis by Cooper, Valentine, Charlton, and Melson (2003) found that this strategy was especially helpful to children from disadvantaged neighborhoods. In addition, they found that year-round schooling worked best for younger children, before learning gaps had grown large and solidified. These findings are consistent with Heckman's (2008) arguments regarding the importance of early intervention to reduce inequality in learning outcomes, but they also point to an important role for schools in reducing learning inequality that originates outside of schools. Implementing year-round schooling would require parental cooperation, thus increasing social capital between families and schools. Second, some states have developed programs to assist with both parental and child literacy, as well as parenting skills. For example, California has constructed Even Start Family Literacy Program (<http://www.cde.ca.gov/sp/cd/op/evenstart.asp>), on the basis of the reasoning that literacy improvements for both parents and children will strengthen child and adolescent achievement in the long run by using school capital to increase not just child human capital but parental human capital as well. Taken together, these interventions are potentially important directions for policy to pursue over time in making better use of capital at home as well as at school. In addition, because we have found that capital at school is consequential for social as well as academic outcomes, these policy directions may pay dividends in promoting social adjustment as well as in increasing academic achievement.

NOTE

We appreciate helpful comments by Robert Crosnoe, Douglas Downey, Frank Furstenberg, W. Norton Grubb, and David Demo on an earlier draft. The remaining errors are our own.

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