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***INEQUALITY IN TRANSITION?
EDUCATIONAL STRATIFICATION
AND GERMAN UNIFICATION***

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Abstract

This research examines educational stratification cross-nationally through the context of German division and unity. Drawing on representative German Social Survey (ALLBUS) data from 1991–1998 on cohorts schooled in the 1980s and 1990s, the analysis explores educational inequality at the secondary-school level with respect to social origins and gender in four settings: the late state socialist German Democratic Republic, the immediate pre-unification Federal Republic of Germany, and the two halves of a now-united Germany. The pre-unification settings differ structurally—in the extent and timing of educational differentiation—and ideologically. Post-unification eastern Germany is a case of sudden, top-down structural reform, with a high degree of cultural continuity and continuity of teaching personnel. The study finds that women’s disadvantage in educational attainment has disappeared at the secondary level; indeed, men now face a disadvantage at this level. However, no major changes have occurred with respect to social origins. The children of workers and less educated parents were extremely disadvantaged in both East and West Germany prior to unification, surprisingly perhaps even more so in East Germany. Despite dramatic reform and expansion of the university-preparatory curriculum in eastern states since unification, inequality in educational attainment remains stable. Interestingly, the children of small-scale proprietors were particularly advantaged under German state socialism, and in eastern states in the 1990s they maintain a substantial but more moderate advantage over working-class peers. The paper concludes with a discussion of possible underlying reasons for the lack of variation in the parameters of educational inequality in the face of such varied and changing institutions and ideologies.

I. Introduction

Change swept through Eastern Europe in the late 1980s and early 1990s, culminating in the fall of the Berlin Wall and the collapse of communist regimes throughout the region. Unlike other countries in the region, the German Democratic Republic (GDR) experienced neither a change in government within its borders nor newfound independence. Rather, within one year of the communist government's fall, East Germany ceased to exist as a separate state and joined—in name and government—the Federal Republic of Germany (FRG).

Researchers of stratification and inequality find rich material for comparative work in the years framing hurried unification. The amelioration of social and economic inequality comprised the ideological core of state socialism in East Germany and the rest of Eastern Europe. In contrast, the FRG belonged to the block of advanced capitalist societies of Western Europe, where state mediation of free market inequalities was much more limited. These disparate strategies present several questions. Did social stratification and resulting inequalities before 1990 reflect the seemingly drastic differences between the two Germanys? Further, how did the structural transformation of unification affect inequality, particularly in East Germany?

Selective university-preparatory education was a key feature of both the East and West German secondary-school systems prior to unification, as it was in many other countries. Almost everyone attended some secondary school, but far fewer attained the *Abitur*, the credential required for entrance to the university. Thus, social stratification in these countries began with educational stratification at the secondary-school level, because it was the first point in the life course at which credentials—closely related to further educational and occupational attainment—signified differences between individuals in a widely recognizable way. We will see that the two countries had very different methods of differentiating those who pursued the *Abitur* curriculum from those who did not. Further, these methods changed dramatically in eastern Germany upon unification. Using recent data from the German Social Survey (ALLBUS¹), this research explores the contours of educational inequality in the transition from a divided to a united Germany. Specifically, it compares the effects of social origins and gender on educational attainment at the secondary level in four contexts: the late state socialist GDR, the immediate pre-unification FRG,

¹ *Allgemeine Bevölkerungsumfrage der Sozialwissenschaften.*

and the two halves of a now-united Germany. The data track both national/regional differences (eastern and western Germany) and changes over the course of unification. These comparisons in the German context inform broader discussions of education, inequality, and social change.

II. Why the German case?

Using cross-national research, social scientists have tried to establish relationships between educational structures and educational stratification, but they inevitably encounter the reality that societies differ in many ways. For example, Blossfeld and Shavit (1993, p. 11) identify the “organizational form of the school systems [including] the degree of ‘tracking’” as one of several key dimensions along which the 13 nations in their comparative study differ. Other dimensions include the level and timing of industrialization, the political system, the structure of distributive systems, and educational attendance rates (Blossfeld and Shavit 1993, pp. 10–11). The former GDR and FRG also differed along a number of very important dimensions, perhaps the most obvious being political and economic. However, the two Germanys had comparable secondary-school credentials and a largely common history. Precisely because the two systems merged, it is important to assess the similarities and differences in educational inequality immediately before unification. Upon unification, there was a high degree of cultural continuity, continuity with respect to teaching personnel within eastern Germany, and an obvious point of reference—western Germany.

In contrast to many other cases of educational reform, external pressures to conform to the school system of western Germany propelled educational reforms in eastern Germany. Reform was not in response to the goals of persons inside the previously existing structures. Thus, we can analytically separate the goals of former GDR citizens and the structural changes that accompanied unification.

In addition, reform of educational structures often proceeds incrementally. For example, Lucas (1999), in his analysis of the dismantling of formal tracking in American high schools, notes that this shift can generally be pinned to a decade (1965–1975), but that historical documentation is incomplete and the mechanism for the shift is unclear. Unlike this reform in American schools, the structural change in eastern Germany upon unification happened between two academic years. For all of these reasons (structural variation within a single society, external impetus for reform,

and the rapid speed at which change occurred), the period immediately before and after German unification presents a singular opportunity to examine educational stratification.

III. Education and inequality in multiple German contexts

A. East German state socialism

As a self-proclaimed “worker and peasant state,” the GDR had placed the principle of providing economic, political, and social resources to those from previously disadvantaged groups at the core of its official agenda. And, even more than in other European socialist societies, the GDR and the SED (Socialist Unity Party of Germany) recognized the state bureaucracy as the means to this end (Connelly 2000, pp. 284–285). Equalizing resources was integral to the state socialist project: collectivizing agriculture and industry, providing universal social services from health care to child care, and flattening the distribution of income.² However, certain inequalities of condition were never targets of such universalizing policies. Educational institutions became an obvious means of advancing those from previously disadvantaged groups, but the government was committed to universalizing outcomes only up to the lower secondary-school level. With respect to the most advanced secondary and post-secondary institutions, government strategy was designed to equalize *opportunity* for, or to give preferred access to, those from disadvantaged backgrounds through a quota system, but not to equalize overall outcomes. As in other state socialist societies, education at these upper levels in the GDR remained a scarce resource (Solga 1997; Mateju 1993; Szelényi and Aschaffenburg 1993; Heyns and Bialecki 1993; Gerber and Hout 1995).³ In the postwar transition to communism, the SED regime did indeed invest much energy into the transformation of schools and universities, and specifically into providing

² State socialist societies in Eastern and Central Europe were generally successful in attaining all of these goals, with some exceptions. Poland, for example, was fairly unsuccessful in collectivizing agriculture (Erikson and Goldthorpe 1987). With respect to income distribution, state socialist societies were the most equal in Europe through the early 1970s, at which time most of them, including the GDR, stopped reporting such statistics (*Compendium* 1991). However, a recent study by Speder and Habich (1999) indicates that upon unification, East Germany was indeed more equal than West Germany with respect to income.

³ In all of these countries (the GDR, Czechoslovakia, Hungary, Poland and Russia, by author respectively), the education system differentiated students for secondary school, generally after comprehensive education through eighth grade. Bottlenecks occurred sometimes most severely in the transition to secondary schools (e.g., in the GDR and Czechoslovakia) and sometimes in the transition to higher education (e.g., in Russia). In any case, places in the highest secondary and/or higher education institutions were scarce, and only ten to 25 percent of any given cohort made both the transition to an academic secondary school and the subsequent transition to higher education.

opportunity for disadvantaged youth. However, in the later years of the so-called “scientific-technical revolution” at the height of the Cold War, other issues and goals eventually forced even the GDR’s official commitment to equal opportunity into the background.

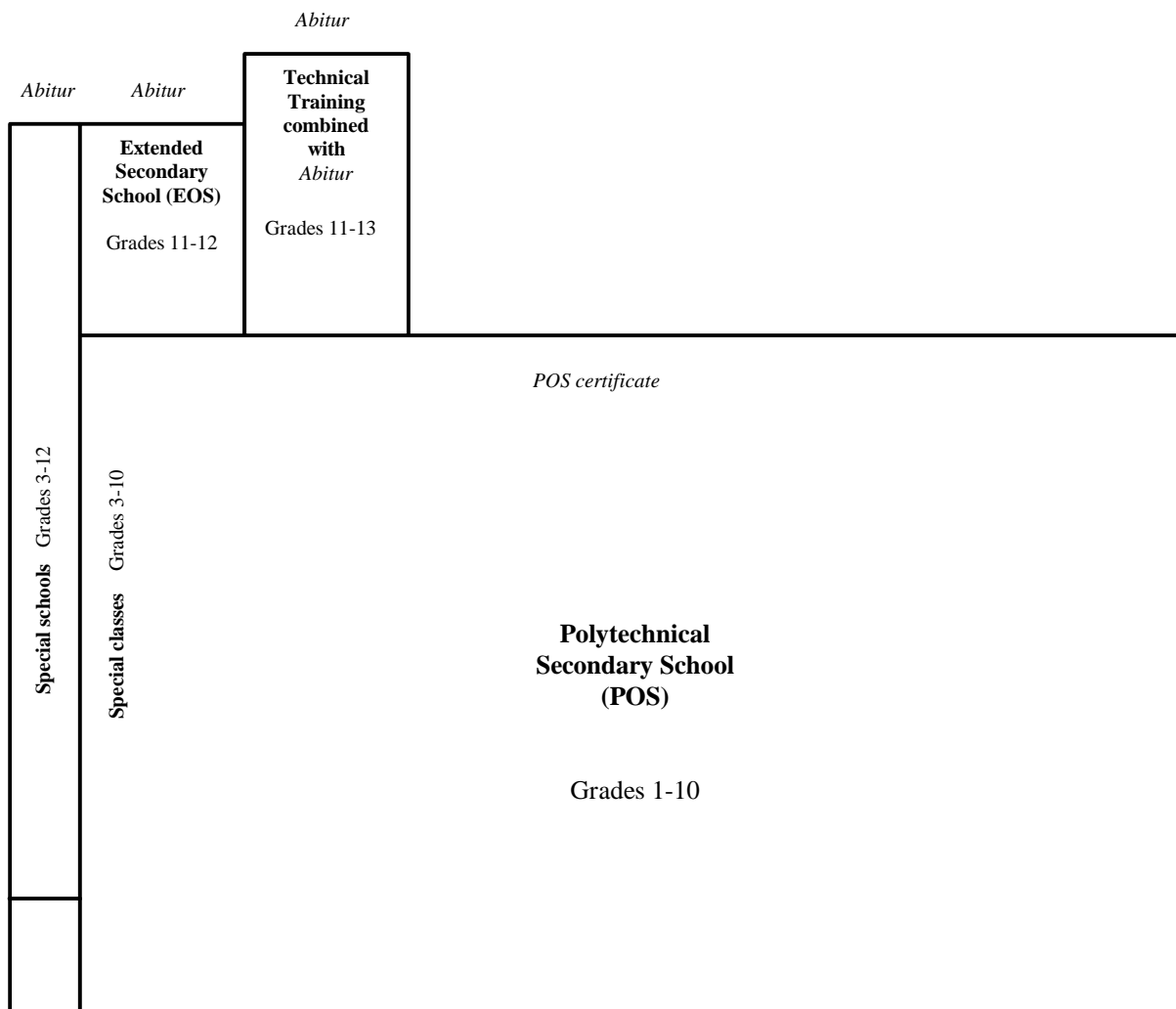
In the early postwar years, educational institutions provided the opportunity for a break with the past, especially the immediate memory of National Socialism. Not only could schools and universities promote ideological change, but they could provide avenues for social mobility and the creation of a new socialist elite. The leadership in the Soviet zone of Germany seized this opportunity to reshape educational institutions in the Soviet image. In fact, the removal of former Nazi students and professors facilitated the Sovietization of East German universities and, much more than in other Eastern European states, allowed universities to produce an intelligentsia loyal to the new socialist government (Connelly 2000). Similarly, primary and secondary schools removed the vast majority (75–80 percent) of the teaching staff after the war, and recruited new teachers from primarily working-class backgrounds, thereby laying the foundation for a staff loyal to the new government (Geißler 1983).

The traditional tripartite system, the cornerstone of German education since the 19th century, differentiated children at an early age into separate schools, depending on future aspirations. This system remained largely unchanged in western Germany after the war and is discussed in more detail below. In 1946, the leadership of the eastern Soviet zone passed the *Law for Democratization of the German School*,⁴ which for the first time in German history established non-differentiated eight-year comprehensive schools, part of a new “unity school system.” In 1959, another bill⁵ extended these comprehensive schools through tenth grade. This goal of universal eight- and ten-year schools was not immediately attainable, especially in rural areas (Zymek 1997), but by later decades the certificate from the new ten-year polytechnical comprehensive school (POS) had become almost universal.

⁴ *Gesetz zur Demokratisierung der deutschen Schule* (Baske and Engelbert, eds., 1966)

⁵ *Gesetz über die sozialistische Entwicklung des Schulwesens in der Deutschen Demokratischen Republik*, *ibid.*

Figure 1: The school system in the GDR



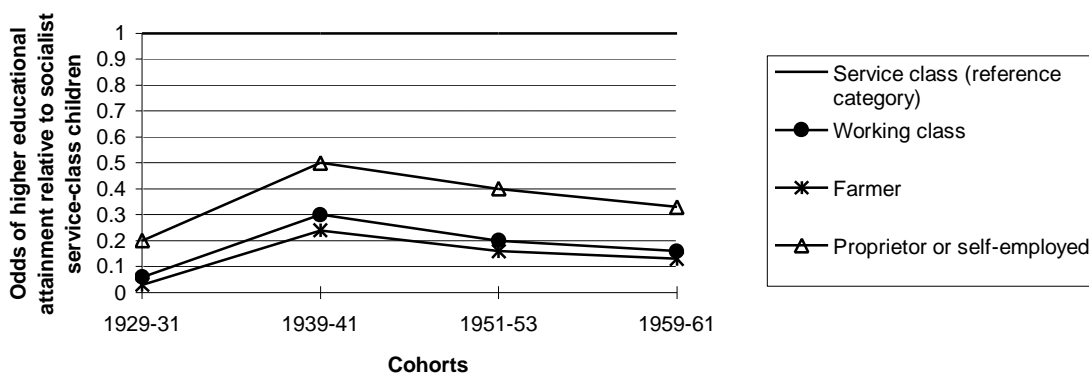
Competition for entrance to the next level of education stood in stark contrast to nearly universalized schooling at the POS level. Only a highly select group of university-bound students entered the extended high school (EOS).⁶ Students were chosen for the EOS on the basis of grades and “political attitudes,” i.e., loyalty to the SED regime (Mintrop and Weiler 1994). In addition to the EOS, “special” schools and classes also became an official part of the “unity school system,” selecting at a young age a small group of students deemed especially talented and offering them a university-preparatory curriculum along with concentrated instruction in a

⁶ Generally, less than ten percent of a given cohort attended the EOS (Schreier 1996, p. 290).

particular subject area.⁷ Although it is unclear exactly how many students attended such schools and classes, those who did were extremely successful academically (Schreier 1996, p. 121).⁸ East German students who otherwise would not have earned university admissions could opt to do so while simultaneously pursuing a technical trade.⁹ Although the GDR had made a break with the traditional German school system, the traditional *Abitur* still signified top academic achievement and was the ticket to the university.

In a post-unification study using data on former GDR citizens, Solga (1997) finds that trends in educational inequality based on social origins reflect these modifications to the GDR's education system in the postwar decades. During the early years of state socialism, the goal of improving educational opportunity for all citizens, but especially for children from disadvantaged backgrounds, was largely successful. A huge increase in the proportion of children finishing the POS—from less than ten percent for people born around 1930 to more than 70 percent for those born just 30 years later—was accompanied through the early 1950s birth cohort by a steady increase in the overall proportion of children attaining the *Abitur*.

Figure 2: Educational Attainment by Father's Occupation, GDR, Cohorts 1929-1961



Source: Solga 1997
See footnote 10 for methodological notes.

⁷ This development became official with a 1965 bill, *Gesetz über das einheitliche sozialistische Bildungssystem* (Baske and Engelbert, eds., 1966).

⁸ Figures for special school and class enrollment range anywhere from one percent (Schreier 1996, p. 291) to five percent (Geißler 1983, p. 762) of each cohort.

⁹ About four to five percent of each cohort pursued this *Berufsausbildung mit Abitur* in the 1980s (Schreier 1996, p. 290).

During the first decade after the GDR's founding, children from disadvantaged backgrounds improved their odds of achieving prestigious educational credentials relative to children of socialist service-class origins.¹⁰ Among those born around 1940, working-class children's odds of high educational attainment were three times worse than those of socialist service-class children. This compares to the case of working-class children born around 1930, whose odds had been over ten times worse. The level of inequality was certainly not negligible, even at the end of this first increasingly equal decade. The children of farmers faced a disadvantage that continued to be slightly worse than that of working-class children—almost 20 times worse than service-class children for those born around 1930 and about five times worse for those born around 1940. We can probably attribute much of the improvement of workers' and farmers' children's odds to directed efforts by the state. In particular, political affiliation and class background were included along with achievement as criteria for entry into university-preparatory schools and universities.

Children of small-scale proprietors and the self-employed also experienced improved odds of high educational attainment, from five times worse than socialist service-class children for those born around 1930 to only two times worse for those born around 1940. One might expect this group to be increasingly marginalized economically and socially in an economy dominated more and more by collectively- and state-owned production. On the contrary, however, children from these origins started out more privileged than the children of workers and farmers after the war, and they benefited just as much as other disadvantaged groups from the equalizing forces in place during the GDR's first decade. For purposes of the discussion below, note that socialist

¹⁰ Solga compares those with more-than-mandatory schooling to those with only mandatory schooling. Because the law mandating the ten-year POS curriculum for all students went into effect in 1959, "more than mandatory" means the *Mittlere Reife*/POS certificate or higher for the older cohorts and *Abitur* for the younger cohorts. (*Mittlere Reife* refers to the *Realschule* certificate of the tripartite [West German] system, which in years of schooling is comparable to the POS certificate.) Taking this into account, the results are all the more striking; inequality in attaining even the ten-year certificate was so extreme for the first cohort in the study (1929–1931).

Solga's occupational categorizations include: (1) socialist service class (bureaucrats, managers, doctors, teachers, engineers); (2) small-scale proprietors and self-employed persons (artisans, small-scale private production, independent farmers after complete collectivization); (3) farmers (collective or independent before complete collectivization); socialist working class (routine white-collar workers, skilled, semiskilled and unskilled manual workers); and (4) "other" (heads of agricultural collectives and members of artisans' collectives). The final, "other" category is not included in analyses of educational inequality. The socialist service class is Solga's reference category, and children from all other backgrounds are relatively disadvantaged. When I refer to children from disadvantaged backgrounds, then, I mean all children except those of socialist service-class origins. See Solga (1994 and 1997) for more on the operationalization of class.

service-class children maintained a considerable advantage over all other groups of children, even the relatively successful children of small-scale proprietors and the self-employed.

For those born after the early 1940s, educational inequality between the socialist service class and other classes steadily increased.¹¹ This rising inequality corresponds to the increasing selectivity of the EOS. Whereas in the 1960s, approximately every fifth POS student continued on to the EOS, by the GDR's last years, this figure had decreased to every tenth student.¹² In the GDR's later years, admission to the EOS was increasingly achievement-based, and in a society that had failed to do away with other social inequalities, it is not surprising that these procedures led to class-based advantage. Geißler (1983) notes four specific factors that led to growing inequality in the GDR's educational system of the later decades: (1) the existence of the "special" schools and classes; (2) a rule whereby students from privileged backgrounds could attain "worker" status for quota purposes by pursuing technical training along with the *Abitur*; (3) the declining importance of the class background criterion for admission to selective institutions in favor of achievement; and (4) the continued use of political loyalty as an admissions criterion, which after a so-called elite "exchange" in the early decades favored the loyal new socialist elite and its children.

Solga's results are consistent with studies of educational attainment in several other state socialist nations. These studies show that, despite high levels of educational expansion in some cases, inequality of educational opportunity remained remarkably stable. Mateju (1993), Szelényi and Aschaffenburg (1993), Heyns and Bialecki (1993), and Gerber and Hout (1995) find for Czechoslovakia, Hungary, Poland, and Russia, respectively, little decrease in educational inequality under state socialist regimes and in some cases quite the opposite. In the Czechoslovakian case, educational inequality under state socialism rose to levels even higher than in the pre-socialist period (Mateju 1993). In the Russian case, educational stratification at the university level became more extreme over successive birth cohorts despite—or perhaps because of—expansion at the secondary level (Gerber and Hout 1995). Thus, despite official class-based quotas, inequalities in educational attainment with respect to family background at best remained relatively stable over time in the socialist period and at worst became even more extreme.

¹¹ The last birth cohort in Solga's study is 1959–61, individuals who would have attended secondary school in the 1970s.

¹² My own calculation, based on figures from Köhler and Schreier (1990, p. 131).

Blossfeld and Shavit (1993) outline a “socialist transformation hypothesis,” which suggests that, in state socialist societies, social origins become more important for educational outcomes after an initial decrease in educational inequality. This appears to be partially true for the GDR, as we saw above (Solga 1997), as well as for Czechoslovakia (Mateju 1993) and Russia (Gerber and Hout 1995). However, in Hungary (Szelényi and Aschaffenburg 1993) and Poland (Heyns and Bialecki 1993) there was no decrease in inequality even in these early years.

B. West Germany

Unlike East Germany, the FRG proclaimed itself the legal successor of the German Reich, a peculiar proclamation in light of the Reich’s ultimate form (Glaeser 2000, p. 199). As this sense of continuity might suggest, denazification of education in West Germany involved only the ideological content of the curriculum, and not school structures. Indeed, the traditional tripartite system, the cornerstone of West German secondary education, remained completely intact after the war and resisted any fundamental reform.¹³ Especially in the early postwar decades, the GDR had reason to argue, as it did, that West Germany’s break with its (fascist) past had been incomplete (Glaeser 2000, p. 100). The social composition of university students in the two countries is striking: 53 percent of the GDR’s university students in the mid-1950s were of working-class origins, compared to only four percent in the FRG at that same time (Hearnden 1974).¹⁴ Students no longer paid tuition for secondary school in the FRG, however, and could receive financial aid at the university. These financial reforms in education, which also occurred in the GDR, soon led to overall higher enrollments (Anweiler 1990), but as scholars of educational stratification have shown, educational expansion does not necessarily lead to more educational equality (Shavit and Blossfeld, eds. 1994).

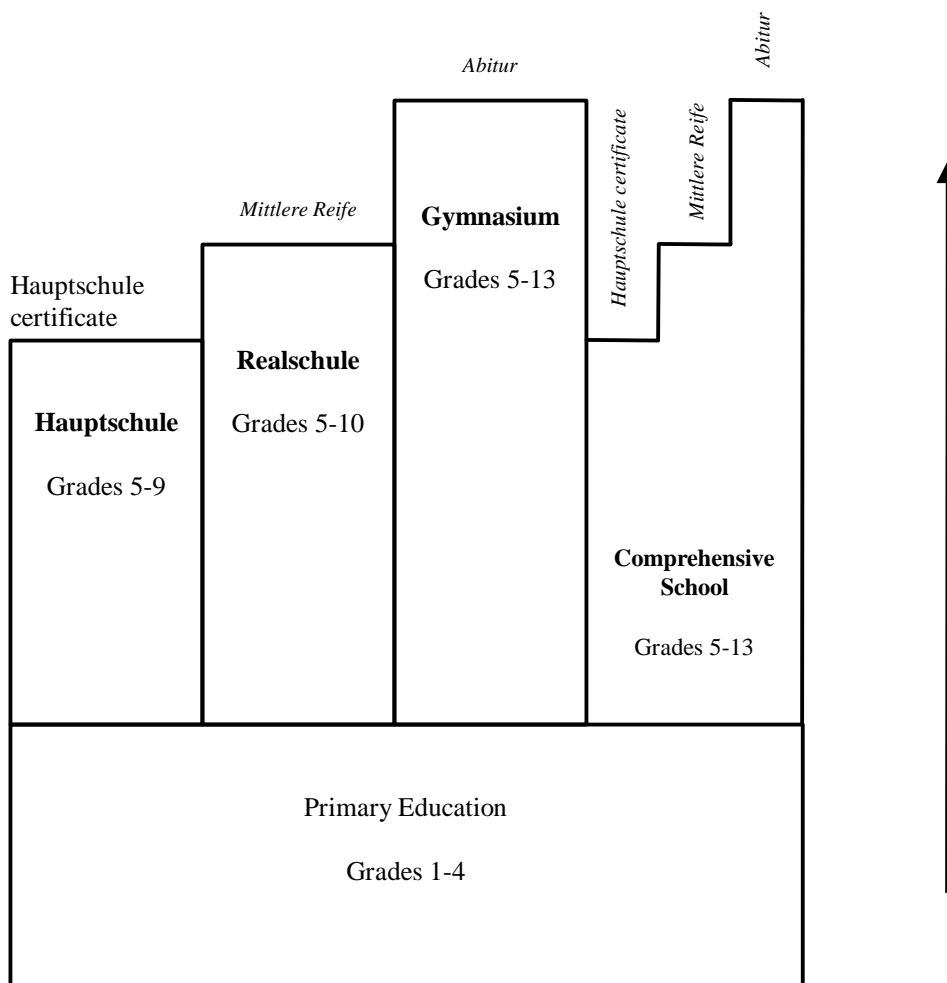
While West Germany’s school system was organized federally, rather than centrally as in the GDR, many elements of the system were quite similar across states. The Hamburg Treaty of 1964, drafted by the eleven federal Ministers of Education, limited states to particular types of

¹³ See Robinsohn and Kuhlmann ([1967] 1992) for more on the causes of non-reform in the early postwar years.

¹⁴ These figures might overestimate the difference between the two countries, because of misleading definitions of “working class” in the GDR, discussed above. However, evidence (Geißler 1983; Solga 1997) does suggest that “objectively” working-class individuals fared relatively well in the GDR’s early years. Working-class children’s chances of university attendance were lower than those of their more privileged peers. Based on their large overall

schools and required them to recognize secondary leaving certificates from other states (Rust and Rust 1995, pp. 32–34). The West German system differentiates children after fourth grade into one of three schools: the academic *Gymnasium*, the intermediate *Realschule*, or the lower secondary *Hauptschule*.¹⁵ In the 1960s, some states introduced comprehensive schools in which

Figure 3: The school system in the FRG



numbers, however, working-class children could well have comprised a large proportion of universities' student bodies.

¹⁵ The only exception to this in terms of timing was West Berlin, which differentiated children after sixth grade.

all three tracks are housed under one roof. Although the internal differentiation in comprehensive schools is certainly less rigid than the between-schools differentiation of the tripartite system, comprehensive schools nonetheless maintain relatively early and credential-specific differentiation. Only the *Gymnasium* and the academic track of the comprehensive school grant the *Abitur*.

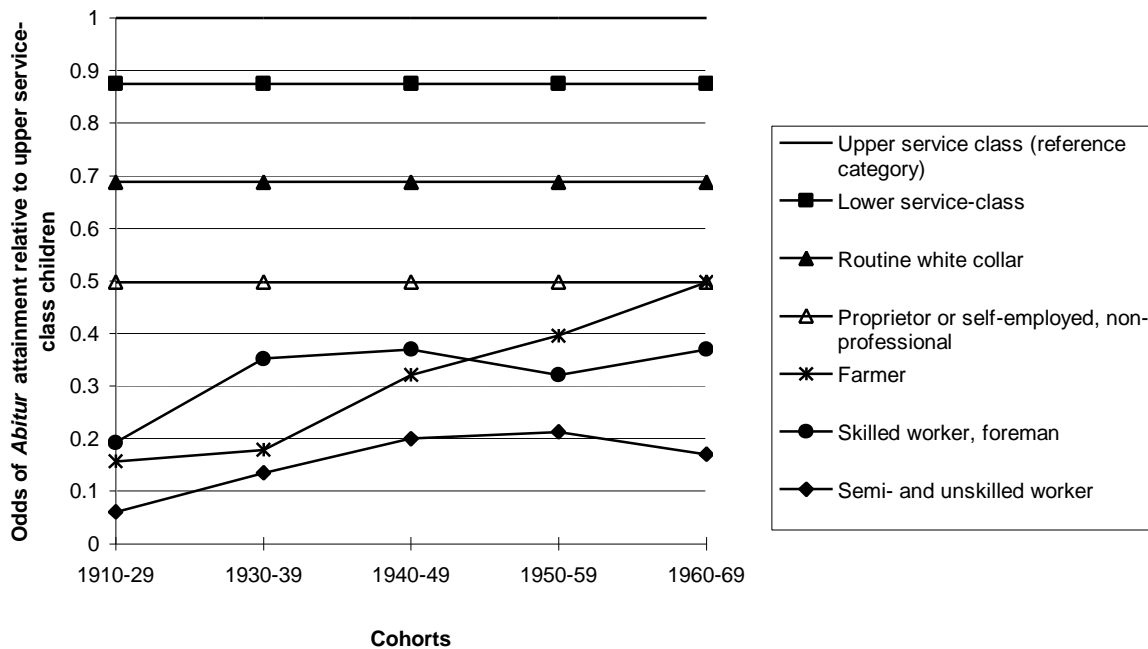
Not the postwar transformation, but rather the social upheaval of the late 1960s and early 1970s, especially the student movement, focused the FRG's attention on social inequalities embedded in the education system (Mitter [1986] 1992; Mintrop and Weiler 1994). Despite attempts at educational reform—the generally unsuccessful campaign for comprehensive schools, for example—the traditional structure of West German schools remained unchanged.¹⁶ Educational expansion at all levels in the 1970s and 1980s led to other more pressing problems, such as job placement for swelling numbers of university graduates (Blossfeld 1993, p. 51). For the pre-unification FRG, there is mixed evidence about inequality in educational attainment by social origins. Müller and Haun (1994) examine such inequality at various levels in the educational system, as measured by nationally representative data. Their results show that the children of farmers and workers (skilled and unskilled) generally faced shrinking disadvantage in *Abitur* attainment over the FRG's history when compared to upper service-class children.¹⁷ However, in later decades (for students born in the 1950s and 1960s), inequality between the

¹⁶ For more on the introduction of the comprehensive school in Germany and other Western European countries, see Leschinsky and Mayer, eds. (1990). It is important to note that the popularity of comprehensive schools has varied considerably among western German states. While this school type is negligible in some states (e.g., Bavaria and Baden-Württemberg), it is quite popular in others, enrolling as many as a quarter of all secondary students (e.g., Nordrhein-Westfalen, Berlin, Hamburg). See Leschinsky and Mayer, eds. (1990) and Spangenberg and Weishaupt (1999) for more information.

¹⁷ Müller and Haun use a modification of the Goldthorpe class schema which includes: (1) upper service class, I; (2) lower service class, II; (3) routine white-collar workers, III; (4) petty bourgeoisie IV and V; (5) farmers, VI; (6) foreman and skilled workers, VII and VIII and (7) unskilled workers, IX and X. See Trometer (1993) for a description of original Goldthorpe categories. While I include the Roman numerals of original Goldthorpe categories, Müller and Haun did not provide these in their article, and so these are my best guesses of their re-categorization based on the descriptions they do provide. See below for a discussion of my operationalization of class, also based on the Goldthorpe schema. It is important to note that Müller and Haun control for father's education, father's occupational prestige, and other independent variables when looking at the effects of class, and they do not report parameters for simpler models. It is thus difficult to compare these results with Solga's for the GDR or to my own, even though we could compare class categories to some extent.

I focus first on Müller and Haun's findings about overall *Abitur* attainment reported on p. 31 (i.e., those that attained *Abitur* in a cohort vs. total persons in that cohort) because these results are somewhat more comparable to Solga's and to my own. The data sets used in these models also include fairly young cohorts (those born in the 1960s), unlike the microcensus data they discuss earlier in the article.

Figure 4: *Abitur* Attainment and Father's Occupation, FRG, Cohorts 1910-1969



Source: Müller and Haun, 1993
See footnote 17 for methodological notes.

children of workers and upper service-class children again began to increase, while the relative odds of farmers' children attaining the *Abitur* continued to improve. The level of inequality did not drop to its immediate postwar levels for the cohorts in this study, but it is unclear from these data whether the trend of increasing inequality continued into the 1980s. For children from all other occupational class origins, including lower service-class children and children of routine white-collar workers, proprietors, and the non-professional self-employed, there were *no changes* in odds of *Abitur* attainment relative to upper service-class children over this study's time frame.

Looking at overall *Abitur* attainment in the FRG masks more nuanced trends for particular transitions (e.g., from the *Hauptschule* to the *Realschule*).¹⁸ Müller and Haun's results further show that working-class children's disadvantage in educational attainment was, at least in the earlier postwar decades, most severe in the transition to the *Realschule*. That is, of those who

¹⁸ These authors, in addition to looking at overall *Abitur* attainment, use a method that Mare (1980) proposed, which models a series of transitions with logistic regression (e.g., from entering secondary school to at least attaining the *Hauptschule* certificate, from attaining at least the *Hauptschule* certificate to at least *Mittlere Reife*, etc.).

finished at least the *Hauptschule*, class-based inequality in *Mittlere Reife* attainment was more extreme than subsequent class-based inequality in *Abitur* attainment among all those who attained at least the *Mittlere Reife*.

Over time, however, working-class children's odds of attaining the *Mittlere Reife* steadily increased relative to peers of upper service-class origins, while their relative odds of earning the *Abitur* decreased. In fact, the disadvantage of working-class youth became very similar for the two transitions. This trend of increasing inequality in the transition to the *Abitur* curriculum was so marked that for the 1960s cohorts, the children of unskilled workers who completed the *Mittlere Reife* again faced almost exactly the same disadvantage in going on to complete the *Abitur* curriculum as had working-class children in the 1940s. After initial educational expansion for children from all classes, decreasing class-specific selectivity at one level (the transition to the *Realschule*) was associated with increasing selectivity at the next level (the transition to *Gymnasium*). The net result was, as we saw above, that working-class children often faced increasing overall disadvantage in later decades. For children from the lower service class, the petty bourgeoisie, and routine white-collar backgrounds, there were no changes in either *Mittlere Reife* or *Abitur* attainment during these decades. Farmers' children experienced decreasing disadvantage in attaining the *Mittlere Reife*, but no changes in subsequent *Abitur* attainment rates.

Müller and Haun choose to emphasize decreasing inequality at the *Realschule* level over time and contrast their own findings to studies that suggest stability in levels of educational inequality. However, their own evidence of overall educational inequality at the secondary level is mixed. Blossfeld (1993) uses a different operationalization of social origins—socioeconomic prestige values—to look at educational inequality over a similar time period in the FRG. Using this measure, he finds no changes in the effects of social origins on any educational transitions.¹⁹

These descriptions of school structures and educational inequality show that, in practice, the East and West German systems had much in common. Although the SED label “unity school system” might suggest that the GDR's system was more egalitarian, both school systems involved a complex process of differentiation. The GDR certainly made great strides in developing an alternative to the traditional tripartite structure. However, by restricting access to upper

¹⁹ Again, Müller and Haun *control for* occupational prestige when they look at class effects on educational attainment. Because they do not report all parameters from the models they use, it is unclear precisely how their results compare to Blossfeld's.

secondary school and allowing loopholes such as the “special” schools, this alternative school system introduced new forms of competition over the most prestigious educational credentials—which were still a scarce resource. And indeed, when we look at actual levels of class-based inequality, we also find many similarities. Educational inequality certainly existed—persisted—in the FRG and GDR, as well as in other state socialist countries. Both the FRG and GDR also experienced increased inequality in recent decades, after some success at advancing the attainment of workers’ and farmers’ children earlier on. In the GDR, success occurred in the immediate postwar years, in support of Blossfeld and Shavit’s (1993) “socialist transformation hypothesis” described above. In the FRG, inequality also decreased, if anything, during the immediate postwar years, and trends fluctuated in later decades.

This and other research on both capitalist and state socialist societies has thus documented fairly “persistent inequality” over the 20th century in spite of a variety of educational reforms (Shavit and Blossfeld, eds. 1993; Solga 1997; Müller and Haun 1994; Gerber and Hout 1995). The two exceptions to this trend in Shavit and Blossfeld’s (eds. 1993) volume—Sweden and the Netherlands—suggest that only advanced welfare states have been successful at significantly reducing educational inequality. Building on these previous studies, my research explicitly compares the extent of educational inequality in the two Germanys in the last years of division—a comparison that has never been direct and a period not included in previous studies. For methodological reasons, including different class schemes and different sets of independent variables, direct comparisons between East and West Germany are impossible using previous studies. Thus, the first question this research will address is: given the GDR’s explicit goal of—but varying commitment to—providing opportunity to persons of disadvantaged social origins, how did educational stratification there compare to that in the FRG in the final years of the two countries’ division? Such a comparison is a prerequisite for understanding what happened upon unification.

C. German unification

The second major focus of this project is the transition of German unification. Given the accession of the GDR to the FRG, how did processes of educational stratification respond to the dramatic changes in eastern German society? These changes include both those internal to educational

institutions and those in the larger economy and society. As with most other aspects of unification, East-West influence was ultimately one-sided in the process of educational reform: the East adopted the western system.²⁰ In the 1991–92 academic year, one year after political unification, students in the new eastern states began attending schools that structurally resembled those of their West German counterparts.²¹ The German context provides an example of extremely sudden top-down reform and—for this and other reasons discussed in more detail above—has the potential to greatly enhance previous conclusions about educational stratification.

Unification affected different educational institutions in the East in different ways. In structural appearance, secondary schools changed most. Although two of the three West German school types were often conflated before adoption by eastern states, these states did officially begin to differentiate students much earlier than tenth grade.²² Even comprehensive schools, which enroll a significant number of students in some states (e.g., Berlin and Brandenburg), differentiate students earlier than was the case in the GDR and grant curriculum-specific leaving certificates. Secondary schools retained approximately 90 percent of their personnel upon unification, unlike universities, which brought in a huge number of faculty members from western states (Rust and Rust 1995). In terms of school personnel, then, the post-communism transition was marked by more continuity than the postwar transition to communism.

Although different states have adopted slightly different policies, the process of educational differentiation has generally become more overtly parent-influenced than it was in the GDR. Some new eastern states (e.g., Thüringen) have adopted a policy that requires an elementary school's recommendation for the *Gymnasium*, while other states (e.g., Brandenburg) give parents full control over school choice (Mintrop and Weiler 1994). Even in states such as

²⁰ See Fishman (1993; 1995) and Meier (1995) for discussions of how this process evolved. In general, although some early attempts were made after the fall of the Wall to truly reform the GDR's school system, they were quickly abandoned as it became clear how quickly political unification was to occur. Interestingly, the majority of East Germans were in favor of eliminating the ideological content of the curriculum but retaining school structures, which leads both of these authors to conclude that the transition in schools was markedly undemocratic.

²¹ It is interesting to note that changes in educational structures occurred even more quickly than other major aspects of unification. Admittedly a more involved project, the privatization of some 15,000 state-owned firms in the former GDR by the *Treuhandanstalt*, an institution created for this sole purpose, was completed at the end of 1994, after a still amazingly short five years (Windorf 1996).

²² The states of Saxony and Thuringia have two school types: the *Gymnasium* and the *Mittelschule*, which combines *Realschule* and *Hauptschule* curricula; see Mintrop and Weiler (1994). In most cases, the eastern states chose to differentiate children after the fourth grade, as is done in most western states. Exceptions were Berlin and Brandenburg, which, in the West Berlin tradition, differentiate children after the sixth grade.

Thüringen, parents may contest the school's recommendation, requesting that their children take an entrance exam for the *Gymnasium* even if they did not receive a *Gymnasium* recommendation (Mintrop and Weiler 1994). Post-unification universities throughout Germany accept the *Abitur* from either the former West or the former East as satisfying admission requirements, and post-unification schools in East and West also continue to grant the *Abitur*, signifying completion of a university-preparatory curriculum.

Eleven years after the fall of the Wall, ten years after the hurried unification of the two countries, and nine years after the fundamental school reforms, there is certainly much that we have yet to learn about the effects of the reforms on the mechanisms and significance of educational credentialing. In particular, very little research has been conducted on educational inequality since unification, and none using nationally representative data sets comparable to the previous empirical studies discussed above.²³ This study will focus on filling in these gaps in our knowledge.

IV. Data and methods

There is thus far no explicitly comparative work on East and West Germany that examines educational attainment with respect to students' social origins. This paper will examine a sample of persons that includes those who graduated from secondary school both before and after unification and in both eastern and western states of Germany. I use the German ALLBUS, the equivalent of the American General Social Survey, to look specifically at the relationship between *Abitur* attainment and family background across time (i.e., pre- and post-unification) and across states (i.e., East and West).

Both descriptive statistics and logistic regression models help describe trends in educational attainment in the various German contexts. The dependent variable is the type of leaving certificate the respondent received in secondary school. Because of its role in accessing university education, the *Abitur* is an important prerequisite for reaching elite positions in German

²³ Research on educational differentiation since unification has been conducted for two eastern states: [eastern] Berlin and Brandenburg; see Merckens (1999) and Merckens, Wessel, Dohle, and Claßen (1997). This research attests to inequalities in educational opportunities along the dimensions of class, "cultural capital," and other factors, but makes an implicit comparison between pre- and post-unification eastern states without any comparable information on the immediate pre-unification situation. Further, the sample is neither random nor representative,

society relative to other leaving certificates. Although the importance of the *Abitur* for occupational placement and income was arguably very different in the two Germanys and before and after unification, I choose to focus on the process by which only certain youths were, and are, able to attain the *Abitur* in the first place, recognizing that secondary-school attainment is only one phase in the life course. As an educational credential, the *Abitur* from these various contexts has one fairly universal meaning—it entitles its holder to university admissions. I combine all non-*Abitur* leaving certificates into a single category. This is helpful in the East/West and pre-/post-unification comparison, because the GDR, where over 90 percent of students attained a POS certificate by the early 1980s, no longer had an equivalent to the FRG's *Hauptschule* certificate by the time the individuals in this sample were attending school (Köhler and Schreier 1990). Among younger cohorts, a significant proportion report still being in school. After looking at cohorts' attainment of various certificates over survey years and considering the fact that most *Realschule* and *Hauptschule* students finish school at age 15 or 16, I concluded that these mostly 18- and 19-year-old individuals who are still in school should be included with *Abitur* recipients.²⁴

I combine data from all ALLBUS survey years in which eastern respondents were included: 1991, 1992, 1994, 1996, and 1998. My sample includes 1965–1980 cohorts and is limited to German citizens. This limitation affects most notably Turkish “guest workers” and their families. For those non-citizens schooled outside of Germany, the comparisons in this study would make little sense. In addition, non-citizens live primarily in western Germany, while eastern Germany is ethnically more homogeneous. Examining ethnicity, citizenship, and educational chances in the context of western Germany seemed extraneous to the goals of this particular investigation.²⁵

I define the pre- and post-unification groupings according to the experiences of students in the East. Those individuals who had the opportunity for at least one year of secondary schooling in or after the 1991–92 academic year (i.e., those born in Aug. 1973 or later) are included in the post-unification category. If anything, this reduces pre- and post-unification differences and

but rather quite over-representative of children of well-educated parents. Thus, I rely on pre-unification studies that do use representative samples and turn then to my own results to describe what has happened since unification.

²⁴ This probably overestimates the proportion of *Abitur* recipients among younger respondents and is reason for future research as more time has elapsed since unification.

²⁵ Some prior research—see, for example, Leenen, Grosch, and Kreidt (1990)—highlights the unique challenges students of Turkish descent face in the [West] German school system when choosing a curricular path.

invites further research as information on younger cohorts becomes available. I exclude those who moved between East[ern] and West[ern] Germany before their 18th birthday, and in cases where the respondent moved as an adult, I recode the region variable to reflect where the respondent attended school rather than where the interview took place.²⁶

I examine several factors that may affect which students are able to attain the *Abitur*. First, I look at both father's and mother's secondary-school leaving certificate as a measure of what Bourdieu ([1983] 1986) calls institutionalized cultural capital. Bourdieu argues that this form of cultural capital can be transformed into certain behaviors and dispositions (embodied cultural capital) that certain parents pass on to their children. These behaviors subsequently help children gain prestigious credentials, perpetuating the intergenerational reproduction of social structure. For parents' education, I include all three secondary leaving certificates (*Abitur*, *Mittlere Reife*, and *Hauptschule* certificate), because among this generation, the *Hauptschule*—also called the *Volksschule*—certificate was still very common even in the GDR. While it would also be desirable to look at parents' post-secondary education, this information is not available for these survey years.

Aside from parents' education, I examine the respondent's father's occupational class and its effects on *Abitur* attainment, using a modified version of the Goldthorpe class schema.²⁷ The issue of course arises of how to operationalize “class” in societies with such different economic systems. Whereas economic privilege in a state socialist society was arguably the result of political proximity to the state bureaucracy, in the FRG wealth and privilege were distributed largely through a privatized economy.²⁸ I base my analysis on the Goldthorpe schema for two reasons. First, it incorporates factors such as autonomy, authority, and career chances that arguably apply

²⁶ Information on whether respondents' moved between East and West Germany was not available for the 1996 and 1998 surveys, but so few people in my sample reported moving in other waves (1.9 percent in 1991, 3.2 percent in 1992, and 1.4 percent in 1994) that the bias introduced by this omission—even if regional mobility has increased somewhat—is probably quite minimal.

²⁷ I use seven categories, based on the original eleven-category Goldthorpe scale that Trometer (1993) applies to the ALLBUS data. Roman numerals refer to original Goldthorpe categories.

(1) out of labor force/out of household; (2) professionals, including self-employed professionals, I and II; (3) managers, I and II; (4) non-professional proprietors, self-employed, and independent farmers, IV, V, and VI; (5) technicians, foremen, and routine white-collar workers, III, VII, and XI; (6) skilled workers, VIII; and (7) semi- and unskilled industrial and agricultural workers, IX and X.

²⁸ Solga (1994) develops a detailed operationalization of “class position” in the state socialist GDR based on the principle of proximity to the state bureaucracy. She used a modification of this schema in the article on educational inequality that I discussed extensively above.

to both capitalist and state socialist societies, and it has been used in practice to compare an array of industrialized nations.²⁹ Using this standard class schema also allows comparisons to other stratification and mobility research.

There are several types of resources beyond those from parents' education for which occupation might serve as a proxy. First, and probably most obvious, are economic resources. Schooling in all contexts required no fees. However, participating in the *Abitur* curriculum involves usually at least two additional years of secondary school, and children from households with less income to spare may have more pressure to graduate earlier with a non-*Abitur* certificate and begin working. Other factors related to one's parents' occupation, such as political loyalty in the GDR, might also have greatly affected educational attainment. Solga (1994) has shown that political loyalty, often a criterion for privileges such as children's selection into prestigious educational institutions, was much more common in the socialist service classes than in the working classes of GDR society. Therefore, it might be the case that similar effects of occupation are actually related to different aspects of occupation; i.e., that economic aspects are more important in the FRG, and "political loyalty" effects more important in the GDR. Thus, occupational class serves in this analysis as a potential proxy for both economic and social/political capital (Bourdieu [1983] 1986).

I also include gender in the analysis of *Abitur* attainment. Although similar parental characteristics could affect men and women differently, I am not able to examine the interaction of gender and the other independent variables I have described for reasons of sample size. Thus, I include only changes in the relative *Abitur* attainment of men and women in the four contexts.

As a final note, the level of missing data in this sample is quite high. A full 30 percent of the cases do not include information about the respondent's father's occupation that is detailed enough to construct the class variable. The proportion of missing data is similarly high for all regions of analysis. The cases with missing occupation data are almost identical to the other cases with respect to distributions of *Abitur* students, parents' education, and regions. Further, the effects of region, gender, and parents' education on *Abitur* attainment are almost identical whether these cases with missing occupation data are included or not. While the level of missing

²⁹ The schema was originally developed for Britain by Goldthorpe and Llewellyn (1977) and has gone through several modifications since then. See Erikson and Goldthorpe (1987; 1993) for some more recent applications.

data might bias the marginal distributions of fathers' occupations, I have no evidence to suggest that my logistic regression results would be dramatically different were information on occupation available for all cases.

V. Findings: *Abitur* attainment and social origins

Perhaps the most striking aspect of average *Abitur* attainment in the four contexts is the huge increase in the proportion of students with *Abitur* in eastern Germany since unification: the rate has almost doubled. This dramatic increase stands in contrast to a much more moderate 30 percent increase in the West, and the educational and economic changes of unification would at first glance seem an obvious explanation for this difference. However, as we will observe when

Table 1: *Abitur* Attainment in Four German Contexts

	%	Men	Women	All
Pre-unification FRG (n=1039)	30.3	27.2	28.9	
Post-unification W. FRG (n=261)	31.2	44.7	37.5	
GDR (n=547)	20.4	14.0	17.2	
Post-unification E. FRG (n=116)	29.0	37.0	32.8	

Source: ALLBUS, 1991-1998

Pre-unification cohorts born 1965-July 1973, post-unification cohorts born Aug. 1973-1980.

we include social origins variables in the analysis, a previous rise in the educational attainment of parents' generations under communism means that, within any given social origins category, *Abitur* attainment rates are not significantly different before and after unification. In other words, an upgrading of social origins seems to drive the observed educational expansion. This finding is not unique and is the first component of the "maximally maintained inequality" hypothesis developed by Raftery and Hout (1993).³⁰

Of course, in a command system such as the GDR's, the demand for education created by such an upgrading of social origins need not lead to educational expansion. Rather, competition over scarce slots in prestigious schools might increase, as we saw over the course of the GDR's history. It is plausible that both the increase in parental education and the relaxing of *Abitur* curriculum admissions procedures that accompanied unification are responsible for the increase in

³⁰ Raftery and Hout further suggest that when an upgrading of social origins drives expansion, underlying parameters of intergenerational reproduction remain constant over time. This and other implications of "maximally maintained inequality" are discussed in more detail below.

students' *Abitur* attainment. Better-educated parents are probably more likely to want their children to pursue the *Abitur* curriculum, but the school system must also allow for increased numbers of *Abitur* students in order for attainment rates to rise.

Both eastern and western Germany have shown a trend of increasing *Abitur* attainment among women. Whereas before unification women were at something of a disadvantage, the opposite is now true in both parts of Germany. Interestingly, women were at an even greater disadvantage in the GDR, given the overall lower levels of *Abitur* attainment, than they were in the FRG. Both women's disadvantage in the GDR and the turnaround in eastern Germany since unification with respect to educational attainment and gender prove to be statistically significant. Women's disadvantage in the pre-unification period and their advantage in the post-unification period are of smaller magnitude and statistically insignificant in western Germany. This reversal of the gender gap in educational attainment has occurred in other countries as well. In all ten studies in Shavit and Blossfeld's volume (eds. 1994) that included both men and women, the gender gap closed, and in four—Poland, the United States, West Germany, and Sweden—the gender gap was reversed in favor of women (Blossfeld and Shavit 1994, p. 21).

A. East and West Germany before unification

Comparing East and West Germany in the years leading up to the GDR's collapse, the only marked, and not surprising, differences in the distribution of fathers' occupations are that the proportion of proprietors was much smaller in East Germany, and the proportion of skilled

Table 2: *Abitur* Attainment and Father's Occupation

	Out of labor force or out of household		Professional, including self-employed		Manager		Proprietor, non-professional		Technician/foreman/routine white collar		Skilled manual worker		Semi- or unskilled manual worker	
	%	of n	%	of n	%	of n	%	of n	%	of n	%	of n	%	of n
Pre-unification FRG (n=1039)	28.3	92	52.0	246	54.3	35	25.3	150	27.3	165	12.7	244	12.1	107
Post-unification W. FRG (n=261)	40.0	25	67.6	74	42.9	21	33.3	33	28.1	32	11.7	60	12.5	16
GDR (n=547)	13.0	54	35.3	116	32.5	40	31.6	19	16.0	75	6.8	190	3.8	53
Post-unification E. FRG (n=116)	0.0	10	50.0	26	42.9	7	57.1	7	33.3	15	27.9	43	12.5	8

Source: ALLBUS, 1991-1998

Pre-unification cohorts born 1965-July 1973, post-unification cohorts born Aug. 1973-1980.

Table 3: Abitur Attainment and Parents' Education

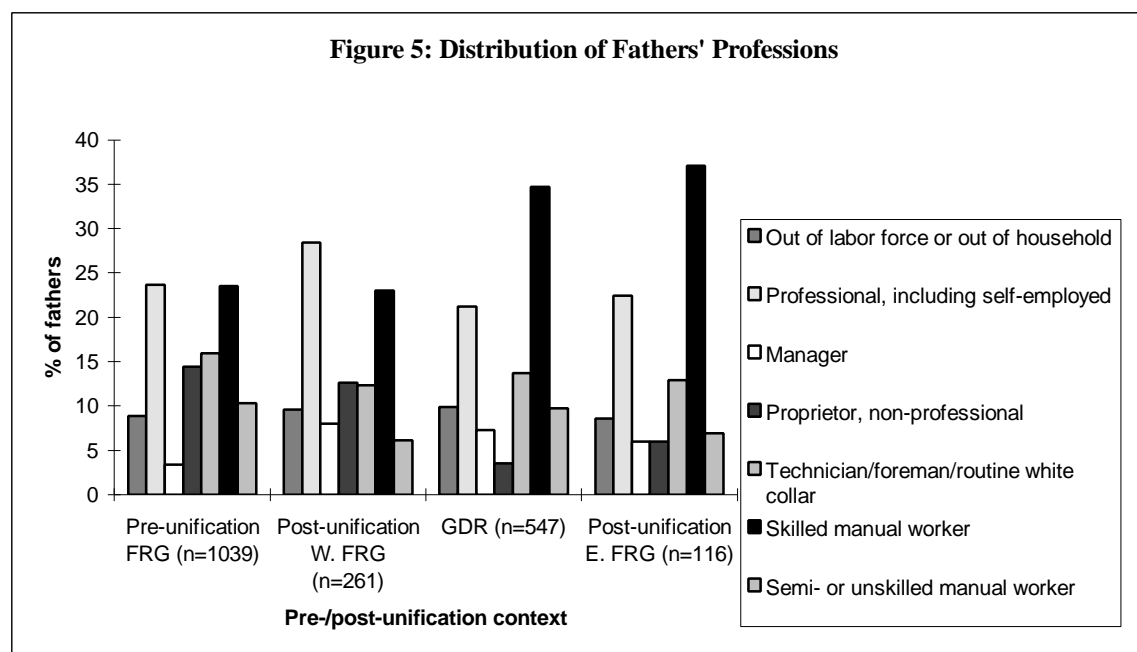
	Both Abitur		1 Abitur, 1 < Abitur		Both MR		1 MR, 1 < MR		Both HS or less	
	%	of n	%	of n	%	of n	%	of n	%	of n
Pre-unification FRG (n=1039)	77.6	49	58.2	98	54.2	107	38.8	134	14.6	651
Post-unification W. FRG (n=261)	84.6	26	73.5	34	50.0	30	28.1	32	19.4	139
GDR (n=547)	64.3	28	38.1	63	20.5	127	17.5	80	4.8	249
Post-unification E. FRG (n=116)	57.1	7	58.8	17	39.6	48	17.6	17	7.4	27

Source: ALLBUS, 1991-1998

Pre-unification cohorts born 1965-July 1973, post-unification cohorts born Aug. 1973-1980.

MR = *Mittlere Reife*, HS = *Hauptschule* certificate

workers was much lower in West Germany. Given proprietors' presumably somewhat precarious situation under state socialism, the educational attainment of individuals from this class background is quite interesting. The children of proprietors in the FRG had an advantage over working-class children that was only about half that of the children of professionals and managers. In the GDR, on the other hand, the few children from this class background maintained an advantage over working-class children that was very similar to the advantage of professionals and managers. Further, while this difference between the two countries in the attainment of proprietors' children only borders on statistical significance when we observe the

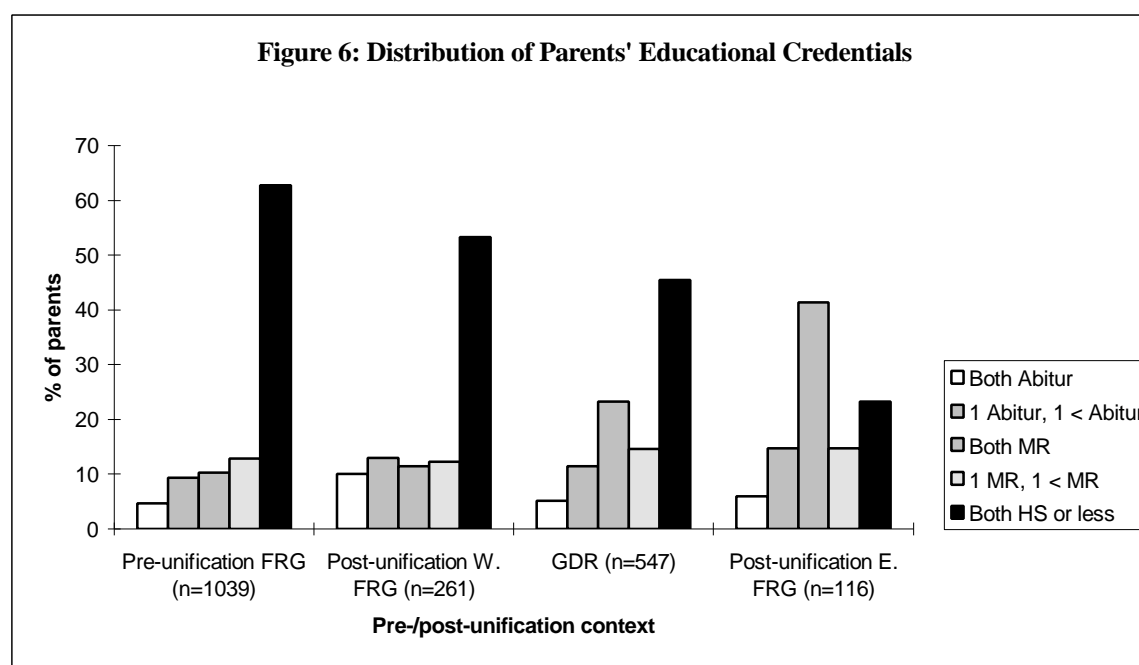


Source: ALLBUS, 1991-1998

Pre-unification cohorts born 1965-July 1973, post-unification cohorts born Aug. 1973-1980.

effects of occupation alone, it becomes highly significant once parents' education is also controlled. In other words, especially given their modest level of education (slightly lower than that of skilled workers), proprietors in the late GDR were extremely successful in promoting their children's *Abitur* attainment.

Also of interest is the finding that, as a general trend, the children of workers, both skilled and unskilled, were if anything more disadvantaged in the GDR than in the FRG. Children of skilled workers attained the *Abitur* at rates similar to unskilled workers in the FRG (twelve to thirteen percent), and their advantaged counterparts, the children of professionals and managers, were over four times more likely to attain the *Abitur*. In the GDR, the advantaged children of professionals, managers, and proprietors had rates of *Abitur* attainment that were four to five times those of skilled workers and *eight to nine times* those of unskilled workers. Based on this data, workers in general and unskilled workers in particular faced a greater disadvantage in the GDR than in the FRG. However, the differences between the two societies, except for the case of proprietors discussed above, are statistically insignificant. In any case, we must conclude that the state socialist GDR in its final years was quite unsuccessful in promoting the *Abitur*



Source: ALLBUS, 1991-1998

Pre-unification cohorts born 1965-July 1973, post-unification cohorts born Aug. 1973-1980.

Table 4: Logistic Regression Models Predicting Likelihood of *Abitur* Attainment, East/West Comparisons

	<i>Pre-unification</i> Parameter Estimate			<i>Post-unification</i> Parameter Estimate		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
West	0.68	1.21	1.21	-1.08	1.10	0.26
Father's Occupation						
Out of labor force/out of household	0.71		0.64	-6.25		-6.30
Professional, including self-employed	2.01		1.12	0.95		0.21
Manager	1.88		0.87	0.66		-0.02
Proprietor, non-professional	1.84		2.02	1.24		0.88
Technician/foreman/routine white collar	0.95		0.84	0.26		-0.12
Unskilled worker	-0.62		-0.15	-1.00		-0.85
Parents' Education						
Both <i>Abitur</i>		3.57	3.05		2.81	2.96
1 <i>Abitur</i> , 1 < <i>Abitur</i>		2.50	2.10		2.88	2.56
Both MR		1.62	1.45		2.10	2.01
1 MR, 1 < MR		1.43	1.24		0.99	1.02
Female			-0.44			0.64
West/Father's Occupation						
Interaction effect						
Out of labor force/out of household	0.29		0.06	7.87		7.55
Professional, including self-employed	0.00		-0.36	1.81		1.48
Manager	0.22		-0.02	1.08		0.80
Proprietor, non-professional	-0.99		-1.63	0.09		0.00
Technician/foreman/routine white collar	-0.01		-0.19	0.83		1.32
Unskilled worker	0.57		0.20	1.08		0.97
West/Parents' Education						
Interaction effect						
Both <i>Abitur</i>		-0.56	-0.45		0.31	-0.57
1 <i>Abitur</i> , 1 < <i>Abitur</i>		-0.40	-0.37		-0.44	-0.73
Both MR		0.31	0.20		-0.68	-0.91
1 MR, 1 < MR		-0.12	-0.15		-0.50	-0.73
West/Female Interaction effect			0.35			-0.20
Constant	-2.61	-2.98	-3.28	-0.95	-2.53	-2.67
Chi-square	207.36	305.77	336.99	70.87	87.76	113.21
-2 Log Likelihood	1570.85	1472.44	1441.22	422.13	405.24	379.79
df	13	9	23	13	9	23
N	1586	1586	1586	377	377	377

Source: ALLBUS, 1991-1998

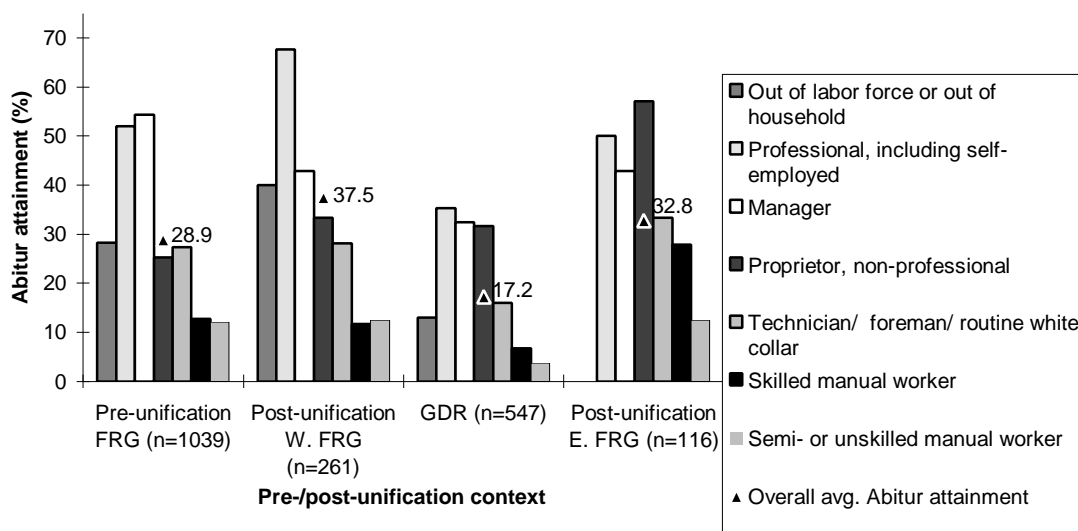
Pre-unification cohorts born 1965-July 1973, post-unification cohorts born Aug. 1973-1980.

The excluded categories are: East, skilled worker, both parents *Hauptschule* certificate or less, and male.

Parameter estimates in bold are significant at the 0.05 level. Estimates in italics are significant at the 0.10 level.

MR = *Mittlere Reife*, HS = *Hauptschule* certificate

Figure 7: *Abitur* Attainment by Father's Profession



Source: ALLBUS, 1991-1998

Pre-unification cohorts born 1965-July 1973, post-unification cohorts born Aug. 1973-1980.

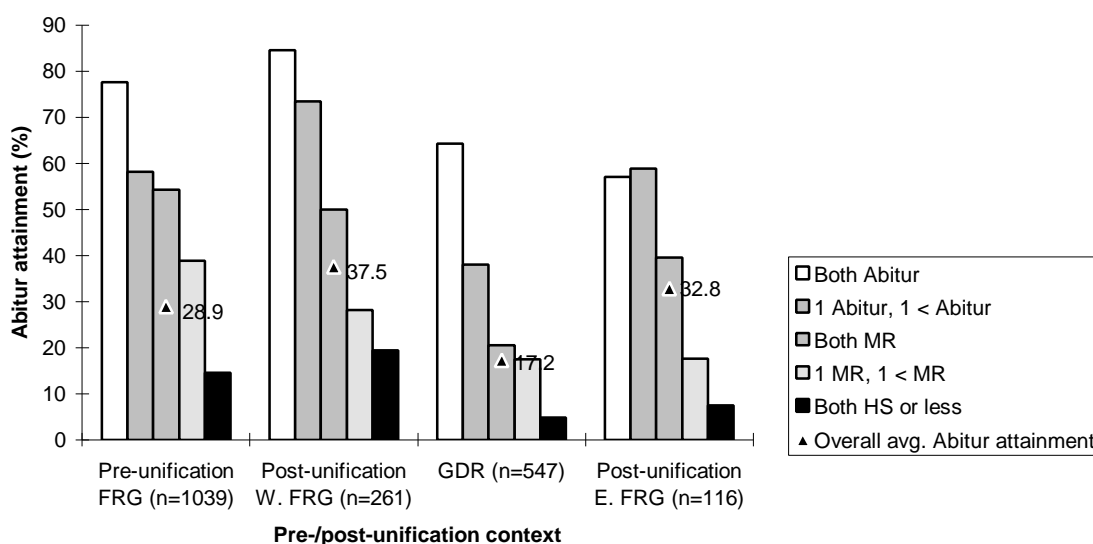
attainment of working-class children. If anything, it was less successful than the advanced capitalist FRG in this endeavor.

These patterns also hold true when we turn to the relationship between parents' education and children's *Abitur* attainment. Formally, parents were somewhat better educated in the GDR. Considerably more children in the GDR were from families in which both parents had the *Mittlere Reife* or a similar diploma, consistent with the GDR's plan of making the POS "unity" school the norm.

Huge differences in the *Abitur* attainment rates between the children of more- and less-educated parents existed in both countries. These differences were if anything more extreme in the GDR, but the differences between countries are statistically insignificant, both when considering education alone and in conjunction with other independent variables. In the East, children of two *Abitur* recipients had chances of *Abitur* attainment that were over 13 times the chances of students with the least educated parents, compared to about five times higher in the West. In all other categories of parental education as well, GDR parents with more than the minimal education

were, given overall lower levels of *Abitur* attainment, relatively more successful than their counterparts in the FRG at promoting their children's *Abitur* attainment.

Figure 8: *Abitur* Attainment by Parents' Education



Source: ALLBUS, 1991-1998
Pre-unification cohorts born 1965-July 1973, post-unification cohorts born Aug. 1973-1980.

Thus, with respect to social origins along the dimensions of class and parental education, these data show, at the very least, quite similar patterns of educational inequality in the two Germanys in the years leading up to unification. Indeed, the GDR distributed its most prestigious secondary-school credentials somewhat more unequally than the FRG. The case of proprietors' children represents the most significant and most interesting example of the surprising trend of educational inequality under late East German state socialism.

B. A united Germany

In order to contextualize any changes in patterns of educational stratification since unification, one must note what has happened to the distributions of parental characteristics. Most likely as a result of the widespread privatization in the East that has accompanied economic unification, the proportion of fathers who are small-scale proprietors has risen there, from 3.5 to six percent.³¹

³¹ Because my occupational class categorizations do not differentiate between professionals, managers, and workers in the public and private sectors, privatization is not immediately obvious when looking at other class categories.

Table 5: Logistic Regression Models Predicting Likelihood of *Abitur* Attainment, Pre-/Post-Unification Comparisons

	<i>Western Germany</i> Parameter Estimate			<i>Eastern Germany</i> Parameter Estimate		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Post-unification	-0.10	0.34	-0.35	1.66	0.46	0.62
Father's Occupation						
Out of labor force/out of household	1.00		0.70	0.71		0.64
Professional, including self-employed	2.01		0.75	2.01		1.12
Manager	2.10		0.86	1.88		0.87
Proprietor, non-professional	0.85		0.39	1.84		2.02
Technician/foreman/routine white collar	0.95		0.65	0.95		0.84
Unskilled worker	-0.05		0.05	-0.63		-0.16
Parents' Education						
Both <i>Abitur</i>		3.01	2.60		3.57	3.06
1 <i>Abitur</i> , 1 < <i>Abitur</i>		2.10	1.73		2.50	2.10
Both MR		1.94	1.65		1.62	1.45
1 MR, 1 < MR		1.31	1.09		1.43	1.24
Female			-0.09			-0.44
Post-unification/Father's Occupation						
Interaction effect						
Out of labor force/out of household	0.62		0.55	-6.96		-6.94
Professional, including self-employed	0.75		0.94	-1.06		-0.91
Manager	-0.36		-0.07	-1.22		-0.89
Proprietor, non-professional	0.48		0.49	-0.60		-1.14
Technician/foreman/routine white collar	0.14		0.55	-0.70		-0.96
Unskilled worker	0.13		0.07	-0.37		-0.69
Post-unification/Parents' Education						
Interaction effect						
Both <i>Abitur</i>		0.12	-0.21		-0.76	-0.10
1 <i>Abitur</i> , 1 < <i>Abitur</i>		0.35	0.10		0.39	0.45
Both MR		-0.51	-0.54		0.48	0.56
1 MR, 1 < MR		-0.83	-0.81		-0.45	-0.23
Post-unification/Female						
Interaction effect			0.54			1.08
Constant	-1.93	-1.77	-2.07	-2.61	-2.98	-3.29
Chi-square	184.12	270.39	297.93	86.34	115.36	144.50
-2 Log Likelihood	1417.46	1331.18	1303.65	575.52	546.51	517.37
df	13	9	23	13	9	23
N	1300	1300	1300	663	663	663

Source: ALLBUS, 1991-1998

Pre-unification cohorts born 1965-July 1973, post-unification cohorts born Aug. 1973-1980.

The excluded categories are: Pre-unification, skilled worker, both parents *Hauptschule* certificate or less, and male.

Parameter estimates in bold are significant at the 0.05 level. Estimates in italics are significant at the 0.10 level.

MR = *Mittlere Reife*, HS = *Hauptschule* certificate

Still, the proportion of fathers who are proprietors in eastern states is only about half that in western states. In western Germany, the proportion of professionals and managers has risen, and

the proportions of all other occupational classes, including proprietors, have decreased. Eastern Germany has also seen a slight rise in the proportions of professionals and skilled workers, while the proportions of managers, technicians, and unskilled workers have decreased.

The most sizable changes in parental characteristics were in the distribution of educational credentials. Children are increasingly from better-educated families, especially in the states of the former GDR. Although even in the pre-unification cohorts, eastern parents had higher overall levels of educational attainment, East-West differences between parents became even more dramatic for children who have been in secondary school since unification. Among eastern respondents, the largest group reports both parents having the *Mittlere Reife*/POS certificate. Only about 20 percent of children are still from families in which both parents have only the *Hauptschule* certificate or less, compared to 55 percent in western Germany. Overall, parents of western cohorts educated after unification were slightly better educated than western parents had been in the 1980s, but the changes were much less dramatic than they were in the East. As discussed above, once this huge change in the educational qualifications of eastern parents is taken into account, no statistically significant difference remains between the levels of children's *Abitur* attainment before and after unification. That is, eastern students finishing secondary school after unification are more likely to attain *Abitur*, but their parents are also proportionally more educated.

Despite the structural changes in eastern schools, educational expansion, and the dramatic economic and cultural changes in East German society, educational inequality with respect to family background has remained fairly stable over the course of unification in both the East and the West. In the East, the children of workers, especially skilled workers, have if anything gained in their *Abitur* attainment rates relative to all more advantaged groups. However, the gap between the children of skilled and unskilled workers has increased somewhat. The only marginally statistically significant change is the decrease in the advantage of the professionals' children over skilled workers' children. But once parents' education is included in the analysis, the change is no longer significant, because working-class fathers have increased their levels of education more than professional fathers have. As noted above, small-scale proprietors in the GDR, unlike western proprietors, were as successful as other advantaged classes (professionals and managers) at promoting their children's *Abitur* attainment. This became even truer after unification. In fact,

the children of proprietors, though a small group, are in post-unification eastern Germany the single most successful group in attaining the *Abitur*. However, their rates of *Abitur* attainment have not risen as much as the rates of workers' children.

Finally, the children of fathers who are out of the labor force or out of the household face extreme disadvantage with respect to *Abitur* attainment in the post-unification East. In the other three contexts in the analysis, such students have about average *Abitur* attainment, but in this case, none (of ten) pursued an *Abitur* curriculum. The students in this category in the post-unification East are, much more than in other contexts, from one-parent families or families that face unemployment. As these two situations are arguably more detrimental to student achievement than, say, having a retired father, I hesitate to make any broad generalizations based on my small sample size in these categories.³²

Eastern students whose parents have any education beyond the minimum *Hauptschule* maintain an advantage over students from the least educated families before and after unification. The most educationally advantaged families, in which both parents have the *Abitur*, are relatively less successful at promoting the *Abitur* attainment of their children after unification than they were before. This is also true for families in which only one parent has the *Mittlere Reife*. On the other hand, families in which both parents have the *Mittlere Reife* have become relatively more advantaged, as have families with one *Abitur* parent. However, none of these changes are statistically significant, and we must conclude that inequality in *Abitur* attainment with respect to parental education has remained stable.

We therefore observe few significant changes in the effects of social origins on *Abitur* attainment in eastern Germany, where we would most expect change. What has happened in western Germany over the same time period? First, the small increase in average *Abitur* attainment can, as in eastern Germany, be attributed to changes in parental characteristics.

³² Becker and Nietfeld (1999) have shown that within the post-unification East, unemployment is detrimental to children's chances of *Abitur* attainment, but they conclude that the actual occupation of a child's parents is more important than their current employment status. The occupation of unemployed fathers is unfortunately not available in ALLBUS. Unemployment levels remain significantly higher in eastern Germany, a fact not reflected in my final sample, perhaps because of survey participation bias, women's (i.e., mothers') overrepresentation among the unemployed, or the age group of this parents' generation (see Vogel 1999). In the future, it would be fruitful to extend Becker and Nietfeld's analysis to include unemployment effects on children's education in western Germany as well, because looking at eastern Germany alone, it is difficult to determine how much changes specific to eastern Germany (including the magnitude of unemployment there) have affected the meaning of unemployment for children's education.

Further, educational inequality has become slightly more extreme when looking at students from most occupational class backgrounds. The exception to this trend is that the advantage that managers' children maintain over working-class children has decreased. This seems to be due, at least in part, to the fact that managers are on average not as well educated as they were before unification.

Looking at the relationship between parents' education and children's education over time in western Germany, we find that inequality has remained relatively stable; if anything, especially at the lower end of the spectrum, inequality decreased somewhat. In particular, the advantage of having one or both parents with the *Mittlere Reife* as opposed to both parents with only the *Hauptschule* certificate or less has decreased. From a slightly different perspective, it seems that parents' *Abitur* education is increasingly a characteristic that distinguishes children who are successful in attaining the *Abitur*.

Thus, the evidence suggests that processes of educational stratification, much the same in the two Germanys when they were still divided, remain very similar in the two halves of a united Germany in the 1990s. Average *Abitur* attainment is only slightly higher in western Germany than in eastern Germany. However, once the different distributions of parental characteristics are accounted for, particularly the tendency for western fathers to have higher-status professional and managerial jobs than their eastern counterparts, this differential in children's educational attainment disappears. Because workers' children in the East gained more in their *Abitur* attainment since unification than children of other class backgrounds, educational inequality with respect to father's profession is slightly more extreme in the West. However, the opposite is true for parents' education. That is, discrepancies between children of parents with more and less education are larger in the East than in the West. But, as is the case with many of the other comparisons in this study, the evidence is not strong enough to conclude that social background-based selection for the *Abitur* curriculum truly operates differently in the two regions.

In the words of Shavit and Blossfeld (1993) in their landmark cross-national collection of studies in educational stratification, this comparative study of eastern and western Germany over the course of unification must also come to the general conclusion of "persistent inequality." While inequality has not persisted for women—with respect to gender, trends of educational attainment favoring men have reversed—inequality based on social origins shows no definite signs

of diminishing. As in the studies in Shavit and Blossfeld's volume, differences in ideological institutions seem to have affected the processes of educational stratification very little. The GDR was at least as unsuccessful at promoting working-class children's educational attainment in its final years as the FRG. In terms of educational inequality, the GDR does indeed seem to have become as much a society of class privilege as its capitalist neighbor. Beyond this, unification and the expansion of the *Abitur* curriculum that accompanied it also failed to improve substantially the relative educational chances of students from disadvantaged backgrounds.

VI. Three puzzles

While it was clear from previous research that significant inequalities in educational attainment existed in both East and West Germany, the similarities we find in the 1980s are nonetheless remarkable. How is it possible that the contours of educational inequality were so similar in East and West Germany? On the other hand, a second important finding—the peculiar success of proprietors' children in the GDR—also requires explanation. Finally, given very similar inequalities in the 1980s, when school structures were clearly different, it is not entirely surprising that no significant changes in inequalities occurred upon unification. However, eastern schools did experience an institutional adjustment to the western model. How did individuals negotiate the new system in such a way that the processes of educational stratification appears so stable? These puzzles will be the focus of the remaining discussion.

A. Distinct inequalities in East and West?

Raftery and Hout's (1993) hypothesis of maximally maintained inequality suggests that educational inequality will decrease only when the demand for a given credential is saturated for upper classes, and educational expansion continues beyond this point of saturation. Related to this idea, Mateju (1993) argues that neither the redistribution of existing opportunities (e.g., through administrative controls) nor the overall increase in opportunities (e.g., through educational expansion) will, without the other, lead to increasing equality (p. 253).

My evidence seems to support these claims. At the upper secondary level, the FRG pursued a strategy of allowing educational expansion without the goal of universal *Abitur* attainment and without attempts to change fundamentally the allocation of opportunity. The

GDR, on the other hand, pursued a strategy of controlling the allocation of educational opportunity without allowing an increase in the proportion of *Abitur* recipients. Neither strategy proved successful in increasing equality. Targeted allocation controls in the GDR no doubt failed in part because the children of well-educated parents with high status occupations faced a substantial threat of downward mobility, and this threat provided an incentive to subvert the system. As culturally committed as the GDR may have been to reducing class-based inequalities in educational attainment, institutional support for such a goal was limited (Szelényi 1998).³³ Several previously mentioned loopholes in the allocation controls are of particular relevance: special schools that differentiated students at an early age; the process of attaining “working class” status through short-term, blue-collar work; and the classification of Party members’ children as “working class” for quota purposes. Previous research (Solga 1997) as well as my own findings suggest that these and perhaps other loopholes indeed limited the success of attempts to equalize educational opportunity in the GDR.

One might have expected that, in a society in which the working class was central to state ideology and enjoyed relative material comfort, there would have been less incentive than in a capitalist society to pursue academic credentials leading to professional jobs. In other words, was the prospect of a working-class job so threatening for children of well-educated and high status parents that they would go to great lengths to take advantage of loopholes in the system? And would working-class children have reason to aspire to non-working-class jobs? As Lenski (1994, p. 56) illustrates with several telling examples, the unequal distribution of political power in communist societies often meant the extremely unequal distribution of material resources, such as luxury homes and goods. Material incentives to enter positions in the state bureaucracy were certainly strong, whether or not income inequality per se was operative. However, we also have reason to believe that such positions lost their attractiveness for some of the population, perhaps because Party loyalty was required of incumbents to these positions.³⁴ Over the years, fewer and fewer people pursued higher education leading to professional and management positions (Mayer and Solga 1994, p. 206). These two processes are not contradictory, however, and both would

³³ See Szelényi (1998) for a further discussion of this distinction between “cultural commitment” on the one hand and “institutional support” on the other in the context of socialist Hungary. She argues that there was strong cultural commitment to but weak institutional support for class-based reform, while the opposite was true for gender-based reform.

lead to the results of high intergenerational reproduction in education and occupation we observe in the GDR. Persons whose parents were in upper positions may have recognized the incentives to entering such positions, while persons of working-class backgrounds may have been more skeptical professing loyalty to the SED.

In any case, we see that state socialist inequalities emerged according to a unique logic. Drawing on Weber and Bourdieu, Eyal, Szélenyi, and Townsley (1998) have used the idea of an alternative power structure in state socialist societies in developing a theory of stratification systems and forms of capital. They have suggested that state socialist societies—and inequalities in these societies—were based primarily on rank order, as opposed to “class” in an economic sense. Social capital, often in the form of political loyalties, became the primary asset with which citizens acquired privilege and power. Along with social capital, however, cultural capital in the form of educational credentials helped to secure high positions in these societies. High academic qualifications (by regime design) often signified a high degree of political loyalty, as political loyalty was a criterion for selection into educational institutions. In capitalist societies, on the other hand, economic capital is the single most important form of capital, while cultural capital, as in state socialist societies, plays a mediating, legitimating role (Bourdieu [1983] 1986; Eyal, Szélenyi, and Townsley 1998).

My pre-unification analysis suggests that these two presumably quite different systems of stratification produced remarkably similar levels of educational inequality. Not only was educational inequality similarly persistent over time, as previous studies have shown (Müller and Haun 1994; Solga 1997), but the actual parameters of inequality were very similar by the 1980s. As discussed above, class as operationalized here might capture primarily economic capital in the West German context, while indicating social and especially political capital in the East German context. It is plausible that class had very different meanings in East and West Germany; it affected one’s income less in East Germany; and/or it was less related to loyalty to the government in West Germany.³⁵ And yet, looking at the results of this analysis, it is clear that

³⁴ See Solga (1994) for rates of Party loyalty among various occupational groups.

³⁵ I would expect occupational class to measure some combination of resources available in families. It is undoubtedly related to social and economic capital in both societies to some extent. However, using the theoretical framework of Eyal, Szélenyi, and Townsley (1998), we would expect social capital to be more dominant in state socialist societies and economic capital to be more dominant in capitalist societies. The fact that occupation and political loyalty were closely related in the GDR (Solga 1997) and the fact that there was more variability in

class was similarly predictive of educational outcomes. This suggests that economic and social/political capital, given the appropriate systems of stratification (Eyal, Széleányi, and Townsley 1998), can be similarly powerful in structuring and sustaining educational inequality.

The theory of the dominance of social capital in communist societies is not fundamentally opposed to previous theorists' ideas of a "bureaucratic caste" (Trotsky 1937) or a "new class" (Djilas 1957) among the ranks of Party elites. Trotsky (1937) predicted early on that the state bureaucracy will become the "sole privileged and commanding stratum in the Soviet society" (p. 249). As Eyal, Széleányi, and Townsley (1998, p. 28) point out, Djilas's (1957) innovation with his "new class" theory was primarily in outlining for the first time how the state bureaucracy's interests were opposed to those of the rest of the population.

Whether the socialist elite formed a new "class," as Djilas suggests, or an "estate," as Eyal, Széleányi, and Townsley suggest, its power rested much more on access to social and political resources than on private ownership, as in capitalist societies. Control over economic resources, inasmuch as they played a role, was linked to political power.³⁶ The explicitly comparative framework of this project helps in assessing recent claims that contradictions between an ideology of egalitarianism and the reality of an unequal society contributed to state socialism's downfall (e.g., Djilas 1998; Mayer and Solga 1994). With respect to educational attainment, class or status privileges were every bit as severe in the GDR in the final stages of state socialism as they were in the FRG, and the SED therefore had little support for its claims that the socialist project represented a more egalitarian alternative. The mechanisms of educational stratification may well have been different in the two societies, and this section has explored these possibilities. The results of the process, however, were very much the same.³⁷

income in general in the FRG (*Compendium* 1991) suggest that this theory applies to the East and West German contexts.

³⁶ Even for those who remained in the small private sector, this appears to have been the case in the GDR, as we will discuss more below.

³⁷ Some evidence suggests that inequality was even more severe in the GDR than in the FRG. My data show that social origins may actually have had stronger effects in the GDR. I have de-emphasized these comparisons, because they are statistically insignificant except in the case of small-scale proprietors. It is also clear that in the GDR, those of working-class backgrounds faced increasingly difficult barriers to entering upper-level jobs (Solga 1994; Mayer and Solga 1994). In part, this was because access to upper positions was increasingly mediated by the attainment of prestigious educational credentials, and working class children, as we have seen, faced huge disadvantages in this sphere (Solga 1997). In the FRG, the intergenerational reproduction of the class structure was actually somewhat weaker than in the GDR, primarily because educational credentials were a poorer predictor of entrance to upper occupational positions (Mayer and Solga 1994). Intergenerational effects unmediated by

Thus, contradictions between an egalitarian ideology and an unequal society certainly existed in the GDR; whether this was related to the collapse of state socialism invites further research.

Despite social and political factors in the GDR and despite parental involvement in curriculum decisions in both countries, achievement continued to play an important role in education attainment. After an initial phase during which social and political factors were heavily weighted along with achievement in selection to upper secondary schools, the GDR turned to a selection process that gave primary weight to achievement by the 1970s (Geißler 1983). In the FRG, the teacher's and school's recommendation of a secondary-school type for a student rested almost solely on achievement. In all likelihood, parents' education predicted children's educational attainment better than occupational class as I operationalized it here, because the "embodied cultural capital" reproduced in families was closely linked to academic achievement and attainment (Bourdieu [1983] 1986). Indeed, Bourdieu ([1983] 1986) argues, "the transmission of cultural capital is no doubt the best hidden form of hereditary transmission of capital" (p. 246); "ability or talent is itself the product of an investment of time and cultural capital" (p. 244). Part of the socialist project in education was to provide academically enriching after-school activities for children from all backgrounds, with the goal of equalizing the cultural resources children brought with them from their families (Waterkamp 1990). However, the findings presented here suggest that such attempts were not able to counteract the effects of learning within families, families that were, in terms of educational resources from parents, still unequal.

B. Private enterprise in the socialist GDR: marginalization or privilege?

We observe one fascinating difference in the class background effects on educational attainment in East and West Germany prior to unification: the children of small-scale proprietors, a glaring exception in an otherwise socialized economy, were amazingly successful in East Germany. Although the GDR, like other state socialist countries, had nationalized most production in its early decades, a small group of citizens remained self-employed throughout its 40-year history.

education were not strong enough to compensate for the weak education-occupation link. In addition, the link between secondary and higher education may have been weaker in the FRG. In any case, there seems to be sufficient evidence to conclude that the GDR was, in terms of mobility, not successful in becoming a more equal society than its western neighbor.

Understanding their position in East German society helps to explain why their children were so successful academically when compared to their counterparts in West Germany.

Until the early 1970s, the private and semiprivate sectors remained significant components of the GDR's economy, at 17 percent of non-agricultural production (Kornai 1992, p. 84) and eleven percent of all production (Kopstein 1997, p. 77).³⁸ In this respect, the GDR was less successful than either Poland or Hungary at nationalizing production in the non-agricultural sectors in these early decades (Kornai 1992, p. 84).³⁹ If anything, both government officials and later analysts understood that it was largely these small, flexible firms that allowed the East German economy to remain even marginally competitive in the international arena (Kopstein 1997). However, abandoning the 1960s reforms of the Ulbricht administration and with a commitment to re-Sovietization of the East German economy, the GDR regime under Honecker fully nationalized the remaining semiprivate firms in 1971 and 1972, reducing this sector to half its previous size (Åslund 1985; Kopstein 1997).

Thereafter, a small number of persons—five to ten percent of the labor force—remained self-employed in the artisanal trades, other small-scale production, and services (Åslund 1985, p. 247). My finding that about 3.5 percent of individuals who were schooled in the GDR had fathers in the category of small-scale proprietors is basically consistent with this figure. These fathers had occupations such as tailor, carpenter, hotelkeeper, and mechanic, and they had on average less formal education than small-scale proprietors in the FRG at the time.

Because of chronic shortages in the socialist economy, the government, especially after 1976, actively encouraged small private enterprises.⁴⁰ In the late 1970s, small enterprises began receiving both state credits and assistance from socialized enterprises (Åslund 1985, p. 202). As a result, the desirability of some occupations in this sector was quite high, and applicants who successfully procured a license often had personal connections and paid bribes to local inspectors (Åslund 1985, p. 202). Thus, those who became small-scale proprietors in the 1980s were in all

³⁸ Åslund (1985) points out, however, that the GDR had experienced several waves of relative tightening and relaxing of policies toward the private sector. The mass nationalization of 1971–2 was the last in a series of time periods that were hostile to the private sector.

³⁹ However, both Poland and Hungary had higher rates of independent farming in agricultural production. See Szelényi (1988) and Goldthorpe and Erikson (1983) for perspectives and figures on small-scale private agricultural production.

likelihood politically well-connected, a characteristic that would in itself be beneficial with respect to children's educational attainment. Kornai (1992) claims that small-scale proprietors often experience more privilege under socialism than under capitalism precisely because they are a "foreign body" in an economic environment of chronic shortage (p. 434).

Whether because they were an already fairly selective group of persons politically, or because they experienced particular privileges through their economic activity, proprietors in the GDR were not marginalized as we might expect in a socialized economy. On the contrary, their children had quite a privileged position in the late GDR. Small proprietors in the FRG, on the other hand, did not operate in a system where such political connections were all-important, nor were they a "foreign body" in the FRG's otherwise largely privatized economy. As a result, they did not experience the same advantages that their counterparts in the GDR did; neither, according to my analysis, did their children.

C. Inequality in the post-communist transition

Why do we not observe more changes in educational stratification since unification? The answer to this question may lie in pre-unification similarities. While East and West Germany had different school systems, these systems were similar in several fundamental ways. Both involved a selective university-preparatory curriculum. Both had a specific credential associated with completion of the university-preparatory curriculum. And both operated in such a way that the resources signified by social origins played an important role in determining educational outcomes.

Returning to the idea that inequality in educational attainment stems in large part from the reproduction of cultural inequalities within families, we have little reason to believe that the changes of unification would have affected this process to any great degree. Before and after unification, we would expect that children's learning in families would greatly affect their academic performance and thus their educational attainment. It is other aspects of the process that appear to have changed more dramatically at first glance. All children in eastern Germany now enter specific schools at an early age. However, special schools undermined the officially undifferentiated school system in the GDR. Parents now have a more open role in influencing

⁴⁰ The title of the decision of Feb. 17, 1976 was "for the promotion of private retail trade shops, catering establishments and handicraft enterprises for repairs, services and immediate supply work in the interest of the further improvement of supplies for the population" (Åslund 1985, p. 199).

curriculum decisions, but some parents may have had considerable unofficial influence in the GDR. In short, processes of educational stratification do not seem to have changed much since unification for many of the same reasons that educational stratification seems to have operated so similarly in the GDR and FRG prior to unification.

The data do suggest that the effects of occupational class are weaker in post-communist eastern Germany than they were in the GDR. Although the difference is statistically insignificant, it may be that eastern parents, unfamiliar with the new school system, are universally less adept at navigating it than some advantaged parents were in navigating the GDR's school system. In other words, the fact that the system is new to all decreases the effects of group-specific resources. Alternatively, actual resources could be more equal. Some evidence suggests that income inequality remains lower in the former GDR than in western states (Speder and Habich 1999), and political power presumably lost its value after the fall of the communist government. Thus, families possess somewhat more equal resources in the transition period. These trends could certainly change with time and will also become clearer as additional data with more cases become available.

VII. Conclusion

Fundamental similarities between the institutional contexts in this analysis affected educational inequalities more than did striking economic, social, and cultural differences. By the 1980s, at least, the GDR seems to have developed in such a way that, despite different mechanisms of stratification, outcomes were very similar to those in the FRG. More specifically, if socialist inequalities were more social and political, they nonetheless resembled the economic inequalities of capitalism in their intergenerational effects. The shock of unification also failed to change the parameters of educational inequality in any significant way. These similarities in educational stratification suggest that the reproduction of cultural capital within families indeed remained the "best hidden and socially most determinant educational investment" (Bourdieu [1983] 1986, p. 244). Even the seemingly radical socialist experiments of the 20th century failed to reduce educational inequalities drastically and permanently.

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