

Scholarly Culture and Occupational Success in 31 Societies

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Abstract

Prior research shows that coming from a book-oriented family is a great advantage for children's education, especially for the "ordinary success" of children from disadvantaged families. Focusing on the next career stage, our multi-level analysis (58,944 respondents in 31 societies) shows that it furthers children's later occupational career even more than parents' education or occupation, especially in developing nations where there is a small additional advantage beyond the educational gains. This evidence supports the scholarly culture hypothesis that book-oriented socialization provides a "toolkit" of competencies, skills, and knowledge (Kohn, Spaeth). It is not consistent with elite closure/cultural capital theories that elites use cultural signals to

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recognize members and hoard advantages by discriminating on the basis of culture (Bourdieu, Goblots).

Keywords

occupational status – books – scholarly culture – cultural capital – development/modernization – Bourdieu – cross-national comparison – status attainment

Introduction

Who gets ahead? Sociologists have pursued the answer to this question eagerly, and with a great deal of success. Researchers in the Blau-Duncan paradigm have established that parents' education and father's occupation have substantial, distinct effects on how far their offspring get in the educational system, but by no means determine it. In turn, one's own education is the dominant, but not the sole, influence on one's occupational attainment. These findings hold in all countries in which the issues have been examined.

More recently, researchers have been exploring a wider range of parental resources and assessing their influences on social mobility and status attainment. An especially notable finding here is that scholarly culture – a home rich in books and in which leisure involves reading – enhances both educational attainment and test scores throughout the world – not only in countries that embrace a bourgeois high culture but also in those that have violently tried to extirpate it – and, so far back as survey data can take us – throughout history (de Graaf, de Graaf, and Kraaykamp 2000; de Graaf 1988; Evans, Kelley, and Sikora 2014; Evans, Kelley, Sikora, and Treiman 2010; Marks, Cresswell, and Ainley 2006; Park 2008). Moreover, the effects are particularly strong for children from disadvantaged homes and are indicative of getting further ahead in mass education rather than elite recruitment: The relationship is linear in the log rather than the upward concave quadratic implied by elite recruitment both in educational attainment (Evans, Kelley, Sikora, and Treiman 2010) and in test scores (Andersen and Jæger 2014; Evans, Kelley, and Sikora 2014).

Given these effects on education, this paper examines the influence of scholarly culture in the parental home, both direct and indirect, on the next stage in the attainment process – occupation. The indirect effect of central interest is through education, net of parents' social class and parents' education, in a broad array of countries across a wide spectrum of economic development. Whether there is a residual direct effect is also of interest as indicating either

cognitive resources not absorbed into the education system or post-education gatekeeper actions.

To investigate these issues, we use the World Inequality Study which pools data from several major national and international projects in the 1990s, all based on representative national samples. This collection of surveys on 31 societies¹ and 58,944 cases gives us a wide international perspective ranging from poor places (Philippines, rural China) to the rich countries of Northwestern Europe and its overseas extensions.²

Prior Theory and Evidence

Beginning from a largely materialist foundation, quantitative research on social mobility underwent an important paradigm shift incorporating the influence of parents' education. That opened the possibility that the inheritance of inequality involves not just material aspects, but, instead, that culture may play an independent role.

As used in this paper, "culture" refers to ways of life: routine practices and preferences that are engaged with material objects – books, in this case – and with associated activities – reading, talking about books, using knowledge.

Theory: Scholarly Culture

Within the cultural tradition, two broad themes have emerged: a *scholarly culture* theory focusing on culture as a "toolkit" of competencies, flexibility/ resili-

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- 1 We treat East and West Germany as separate 'societies', because of their very different post-war histories and because most of the labor force as of the mid-1990s began their careers before re-unification. China specialists have strongly divergent views about the degree of separation of urban and rural China during the Communist period, when the relevant cohorts were starting their careers. We have opted for a middle ground. In the analysis of each society separately, we present both (1) results for urban-born and rural-born Chinese separately (e.g. Unger, 1982) and also (2) combined (e.g. Wu and Treiman 2007). The multi-level analysis allows the effect of home library size (and other influences in the model) to differ between the two groups. In South Africa, we allow the effects to differ among Asian, Coloured, Black and White groups because of the recent legacy of almost separate economies under apartheid. On this reckoning, there are 31 separate 'societies' in the 26 separate national jurisdictions in our data.
 - 2 Into these individual level data we have merged contextual level data on economic development (GDP when respondent was 15 and beginning to make school/career decisions) and political context (whether Communist or not when respondent was 15). This enabled us to investigate degree to which the effects of cultural background vary with economic development and among diverse institutional systems.

ience, and funds of knowledge (Evans, Kelley, Sikora, and Treiman 2010; Miller, Kohn, and Schooler 1985; Pearlin and Kohn 1966; Spaeth 1976; Spaeth 1979) and an *elite closure* /*cultural capital*³ theory focusing on elites hoarding advantages by using cultural signals to recognize elite members and to exclude others, in short, discrimination on the basis of culture (Bourdieu 1984; Goblot 1925 [1973]). These are middle-range theories in Merton's sense: Their generality is limited to a specific domain, but within that domain they imply multiple specific, testable hypotheses. Are education, wealth, and privilege passed on from generation to generation through the provision of extra skills and abilities that substantively contribute to success at school and enhance productivity in the workplace, as the scholarly culture theory suggests? Or does social reproduction occur through status groups practicing discrimination on the basis of culture?

Prior research has focused on education (attainment or performance) as the outcome, so we will necessarily draw on that foundation. However, this paper focuses on scholarly culture's impact on the next stage in the attainment process: occupational attainment, so our hypotheses focus on that. Our first purpose is to discover whether there is a total effect of scholarly culture in all the 31 societies for which we have the requisite data (a good representation internationally except for Africa and the Muslim countries). We then examine how much of the effect operates *indirectly* through offspring's educational attainment, and how much operates *directly* net of that and other factors. Table 1 summarizes the arguments and we sketch them verbally below.

The Scholarly Culture Hypothesis

The general scholarly culture hypothesis is that socialization in book-oriented homes generates generalized cognitive capacities/ resources – “complexity” (Kohn, Slomczynski, Janicka, Khmelko, Mach, Paniotto, Zaborowski, Gutierrez, and Heyman 1997; Miller, Kohn, and Schooler 1985), or a “toolkit” (Swidler 1986) – which are useful in problem solving in a wide array of topics and issues (Pearlin and Kohn 1966; Spaeth 1976; Teachman 1987). Books in the home are both a physical resource and an indicator of a cognitively complex lifestyle that enhances intellectual skills in ways directly useful in school, improving academic performance (Crook 1997b; Dronkers 1992). This approach suggests

3 “Cultural capital”, in the traditional definition of “capital” would mean that culture is a durable, human-created (as opposed to natural) resource that generates value/ rewards. That could apply to either theory (since the definition does not specify the mechanism generating the rewards). Some scholars have tried to reclaim the term for a substantive link (e.g. de Graaf et al. 2000). But as the term has mostly been used, it has too strong an association with a theory of cultural signaling as a mechanism for elite closure to be reclaimed to the more general use (Goldthorpe 2007).

TABLE 1 *Culture and status attainment: Theories, testable implications, results*

General hypotheses and specific tests	Preferred theory: Scholarly culture (Kohn, Spaeth)	Alternative theory: Elite closure/discrimination (Bourdieu, Goblots)
A: Basic thesis:	Cognitive skills acquired through socialization in the family lead to better performance in school and greater productivity in the workplace	Established elites and their gatekeepers in schools, business, and government discriminate in favor of children from elite families
B: General claim: Offspring of cultured families will get better jobs than people from equally educated, high status but less bookish families; books matter especially to the less cultured	Yes, because scholarly homes endow children with valuable cognitive skills.	Yes, because “high culture” signals children’s elite membership to gatekeepers in schools, business, and government.
H1a: Testable implication: parents’ home library size has a positive total effect on their children’s occupational status. (Eq. 1; Table 2 col. 1; Figure 2 Panel A)	Yes, because home libraries are a key indicator of scholarly culture. [Prediction supported]	Yes, because home libraries are part of high culture and therefore signal elite membership. [Prediction supported]
H1b: Testable implication: the effect of parents’ home library size on their children’s occupational status is curvilinear, steepest at first and then leveling out. (Figure 3, Panel B)	Yes, because even a few books make a very substantial skill/complexity gain, compared to none. Each additional book adds fewer skill as libraries get large. The effect should be approximately loglinear. [Prediction supported]	No, because elite membership signaling involves extensive knowledge of high culture, so additional books at the bottom will have little impact, but large libraries will. The effect should be approximately a step function. [Prediction falsified]

General hypotheses and specific tests	Preferred theory: Scholarly culture (Kohn, Spaeth)	Alternative theory: Elite closure/discrimination (Bourdieu, Goblott)
<p>H1c: Testable implication: Arts spectatorship has little or no effect on children's education, school performance, or occupational status. (Table 2 col. 6, 7 and 8)</p>	<p>Little or no effect because arts spectatorship is not an aspect of scholarly culture. [Prediction supported]</p>	<p>Arts spectatorship is part of high culture and therefore signals elite membership to gatekeepers just as much as books do. [Prediction falsified]</p>
<p>C: General claim: Offspring of bookish families get better jobs mainly because scholarly culture provides cognitive skills that enhance academic performance.</p>	<p>Yes, especially in advanced societies where skills needed in the workplace are largely acquired in schools and universities.</p>	<p>No, they get more education and better jobs because gatekeepers discriminate in their favor.</p>
<p>H2: Testable implication: Large home libraries increase children's occupational status mainly indirectly by enhancing their formal education. (Eq. 2; Table 2 col. 2; Figure 2 Panel B)</p>	<p>Yes. [Prediction supported]</p>	<p>Alt a. (Weak elite closure version: Education gatekeepers only): Yes. Teachers do all the gatekeeping. [Prediction supported]</p>
<p>D: General claim: Scholarly culture enhances occupational attainment everywhere, (i) even where national political elites do not favor the bourgeoisie and (ii) even for oppressed groups under hostile regimes – both situations where a helping hand for fellow members of the elite is ruled out.</p>	<p>Yes everywhere, since the skills needed to succeed in education are much the same everywhere.</p>	<p>Alt. b. (Strong elite closure version: Many gatekeepers): No, direct effects are large, because elites in business and government favor of the elite's children [Prediction falsified] It matters only where a bourgeois elite dominates schools, business, and government and is willing to discriminate in favor of children from cultured homes. Therefore mainly in Western Europe and its overseas extensions.</p>

TABLE 1 *Culture and status attainment: Theories, testable implications, results (cont.)*

General hypotheses and specific tests	Preferred theory: Scholarly culture (Kohn, Spaeth)	Alternative theory: Elite closure/discrimination (Bourdieu, Goblot)
<p>H3: Testable implications: The books effect will be observed in all nations and all historical periods. (Table 3)</p> <p>E: General claim: Advanced societies' strong educational institutions and social support systems can offset scholarly culture deficits. Students in developing societies lack such support, so are more vulnerable. Hence there is a negative interaction of scholarly culture with development.</p>	<p>Yes, books matter even under Communism and for ethnic minorities under Apartheid in South Africa. [Predictions supported]</p> <p>Yes.</p>	<p>No effect under Communism (the elite did not favor the bourgeoisie) or under Apartheid (the elite did not favor minorities). [Predictions falsified]</p> <p>No. Elite membership is what matters, regardless of the strength of educational and social support systems.</p>
<p>H4: Testable implications: The home library effect on occupational status and education will be smaller in advanced societies than in developing societies (Table 2 cols. 3,4 & 5; Fig 4, Panel A; Table 3)</p>	<p>Yes, there is negative interaction of books with GDP per capita. [Prediction supported]</p>	<p>No, the effects will be the same or even larger in advanced societies, because the elite particularistic ties are replaced by "universalistic" signals [Predictions falsified]</p>
<p>H5: Testable implications: The occupational and educational advantages of living in an advanced society will be greatest for children with few books (Table 2 cols. 3 & 5; Figure 4, Panel A; Table 3)</p>	<p>Yes, advanced societies compensate for disadvantages for uncultured families but that is mostly redundant for cultured families. [Prediction supported]</p>	<p>No. Regardless of social context, the elite helps children from elite families but not those from uncultured families. [Predictions falsified]</p>
<p>H6: Testable implications: The direct effect of home library size on occupational status will disappear in the</p>	<p>Yes, since in advanced societies the complex skills needed in the workplace are acquired</p>	<p>Alt a. (Weak elite closure version: Education gatekeepers only): Yes. Teachers do all the gatekeeping. [Prediction supported]</p>

General hypotheses and specific tests	Preferred theory: Scholarly culture (Kohn, Spaeth)	Alternative theory: Elite closure/discrimination (Bourdieu, Goblots)
most developed societies (Table 2 col 4; Fig 4 Panel B)	through formal education. [Prediction supported]	Alt. b. (Strong elite closure version: Many gatekeepers): No, because of elites in business and government are gatekeepers [Prediction falsified]
F: Summary of predictive success:	8 right, none wrong (100%)	Weak vsn: 3 right, 5 wrong (38%) Strong vsn.: 1 right, 7 wrong (13%)

that a substantive connection between scholarly resources and performance in school accounts for much of culture's effect on educational attainment (Bidwell 1989; Farkas 1996; Teachman, Paasch, and Carver 1997).

Prior Research on Education

Research on scholarly culture's role in status attainment has largely focused on its impact on education. Beginning with a handful of mostly rich market-oriented countries, studies uniformly revealed that scholarly culture in the home (as indicated, for example, by the number of books in the home library, the frequency of reading serious books by parents and by children, children taking extended-learning classes outside school, etc.) enhances children's educational attainment, net of father's occupational status, urban/rural residence, number of siblings, and other control variables (Aschaffenburg and Maas 1997; Crook 1997a; de Graaf, de Graaf, and Kraaykamp 2000; de Graaf 1986; DiMaggio 1982; Xu and Hampden-Thompson 2012). Analyses of Communist countries, where many citizens were voracious readers (Wnuk-Lipinski 1983), made the important discovery that the effect was evident there as well (Ganzeboom and Nieuwbeerta 1999; Ganzeboom, de Graaf, and Robert 1990; Robert 1991b). Hence, the effect could *not* be attributed to capitalism's specific institutional arrangements (Meyer, Ramirez, Frank, and Schofer 2007) nor its specific elite subterfuges. More recently, the effect of books in the home on educational attainment has been found to hold more broadly – in 31 countries at a variety of levels of development, with diverse institutional histories, and going back

in time to cohorts coming of age in the late 1940s (Evans, Kelley, Sikora, and Treiman 2010) and also to hold for performance on standardized externally marked tests where impressing the teacher is not a possibility (Andersen and Jæger 2014; Evans, Kelley, and Sikora 2014).

Implications for Occupational Status

The scholarly culture argument posits that books and other aspects of scholarly culture in the family of origin have total effects on subsequent occupational attainment (Hypothesis H1a), and that these effects are steepest at first and then level out (Hypothesis H1b: curvilinearity). Moreover, Beaux-Arts culture/ arts spectatorship does not affect occupational attainment (Hypothesis H1c). See Table 1 Panel B. Moreover, the scholarly culture argument holds that this advantage comes about for a particular reason and therefore in a particular way: primarily through *schools* (H2; Table 1 Panel C). Furthermore, the skills needed to succeed in education are much the same throughout the world, so this is true in all nations (H3; Table 1 Panel D).

Context dependent effects? How does this vary with socioeconomic development? Education is increasingly readily available. Home libraries still facilitate learning and education: Bookworms who yearn for the groves of academe can simply stroll in and drink as much as they like from the fountains of learning. Education really adds value: People who achieve a given level of education, regardless of how they got there, have toolkits that are in a similar range of value to employers. Thus, in advanced societies, home library size in the family of origin will continue to have a substantial effect on later occupational attainment, but that effect will be largely indirect through education. The direct effect will only be a small, declining fraction of the total. By contrast, in developing societies, students are more vulnerable to accidents of history and to random events deflecting their educational trajectories. Hence, on average, more of the skills and capabilities generated by the home library will not be translated into education. That, in turn, will make the effect of home library size greater in developing societies; to be greatest for children with few books; and to be mainly indirect in advanced societies (Hypotheses H4, H5, and H6; Table 1 Panel E.)

Beware an Important Mis-attribution

Early on in this research tradition, some scholars following the signaling/ hoarding / cultural capital argument for elite closure (Bourdieu 1984) performed analyses that, by fiat, conflated arts spectatorship culture⁴ with

4 There does not seem to be a good word or phrase in English that neatly encompasses public high culture arts consumption: going to art galleries and museums, attending concerts of

scholarly culture (Aschaffenburg and Maas 1997; DiMaggio 1982). Nonetheless, all analyses with enough indicators find that reading-related items and “cultural capital” arts-spectatorship items load on separate factors and their correlations with criterion variables differ (e.g. Crook 1997b; de Graaf and de Graaf 2001; de Graaf, de Graaf, and Kraaykamp 2000; Sullivan 2001). There is substantial inheritance of each cultural tradition, but it is *within* dimensions rather than between them (Evans and Kelley 2002; Evans, Kelley, Sikora, and Treiman 2010; Georg 2004). Where separate effects are allowed, scholarly culture has a large effect on education, but arts-spectatorship culture has little or no effect (Crook 1997a; de Graaf, de Graaf, and Kraaykamp 2000; Evans and Kelley 2002) see also the compelling summaries in (Goldthorpe 2007; Kingston 2001; Tzanakis 2011). Those analyses that, contrary to the evidence, shoehorned scholarly culture indicators into a general “high culture” index with arts spectatorship items have mis-attributed the effect of scholarly culture to an imaginary unified “high culture” and have incorrectly interpreted the results they discover as supporting the elite closure interpretation, when what they really found was a scholarly culture effect disguised by the methodological error.

Alternative Theory: Elite Closure/Cultural Capital

Research in the “cultural capital” or elite closure approach (whatever Bourdieu’s original intentions)⁵ defines culture in approximately the same way as the scholarly culture hypothesis, but proposes a different mechanism translating culture into inequality. In this view, participation in the scholarly culture

classical music, plays, ballet, opera, and the like. Prior research has used both “high culture” and “beaux arts culture”, but neither is satisfactory. “High culture” is too broad (potentially encompassing many things irrelevant to elite signaling). “Beaux arts culture” in its broad usage includes both the visual arts and the performing arts, as is appropriate to this dimension, but it fails to emphasize a key element: *public* spectatorship. These forms of art spectatorship are strongly linked among themselves; there is clearly an arts spectatorship domain of high culture. But an odd (and underexplored) aspect of arts activity is that actual participation in the beaux arts at home by playing or listening to classical music or by participating in amateur theater or play-reading groups or by painting or sculpting or viewing painting and sculpture in illustrated books or online are very weakly correlated with the public spectatorship group of activities (Evans, Kelley Sikora and Treiman 2010). Accordingly, we prefer the “arts spectatorship” term as having the correct scope (the arts, rather than high culture more generally) and highlighting the distinctive public consumption aspect.

- 5 Curio, a distinguished Roman senator, referred to Julius Caesar as “Every man’s woman and every woman’s man.” (Suetonius, 121). So it is also with Bourdieu’s writings about cultural capital: They are open to a very broad array of interpretations (Lamont and Lareau 1988). We focus on the stratification-related interpretation which has played the major role in a lively stream of research in the status attainment tradition (Kingston 2001); it has been dubbed the “domesticated” version (Goldthorpe 2007).

endows young people with membership signals that gatekeepers in education, business, and governmental bureaucracies use to control access to hoarded elite advantages, discriminating in favor of children from elite families (Lareau and Weininger 2003 and see the clear exposition in Saha 2015). More generally, research on status construction has demonstrated the power of arbitrary signals in the generation and maintenance of hierarchies (Ridgeway, Boyle, Kuipers, and Robinson 1998; Ridgeway, Li, Erickson, Backor, and Tinkler 2009); elite closure theory and research build on this general finding to develop a specific hypothesis about “high culture” as set of membership signals.⁶ In elite closure/ cultural capital theory, cultural capital consists of “... institutionalized, i.e., widely shared, high status cultural signals (attitudes, preferences, formal knowledge, behaviors, goods and credentials) used for social and cultural exclusion” (Lamont and Lareau 1988: 156). The research literature on “domesticated” cultural capital (Goldthorpe 2007) consistently emphasizes the use of cultural capital in boundary maintenance (Crook 1997a: Chapter 1; Kingston 2001; van de Werfhorst 2010) – bonding within groups and “... barriers to the less privileged and less sophisticated.” (Kingston 2000: 125).

Thus, elite closure/ cultural capital theory proposes different mechanisms linking parents’ culture and their children’s occupational status (summarized in the last column of Table 1). Specifically, the advantages that offspring of cultured families have will be *both* in education and in hiring and promotion – perhaps especially in the workplace because hiring is done largely by private firms under the control of the economic elite, where criteria are murky and subject to discretion.

Context Dependent Effects?

The elite closure tradition has not explicitly addressed the issue of the universality or specificity of “high culture” signaling, but it is a reasonable extension of the general logic of the argument to expect that because different elites have different agendas, and because membership signals are essentially arbitrary, the signals used in a particular society surely would have an elective affinity with the traditions and politics of its ruling elite. An established, conservative elite in Bourdieu’s France might want to favor the offspring of prosperous, well educated, high status families. But a Communist elite in rural China in the 1960s would have quite different preferences (Meyer, Ramirez, Frank, and Schofer 2007: 212; Unger 1982), specifically preferences for the children of

6 The question is not whether elites seek to hoard advantages but whether they successfully use scholarly culture signals as a hoarding mechanism.

peasants, industrial workers, and apparatchiks. Moreover, the dominance of kinship ties as determinants of elite membership in most developing nations has long been recognized, (Toennies 1887 [1961]; Wirth 1938), so it is unlikely that “high culture” signals would carry much weight.

With socioeconomic development, particularistic attachments to kin fade. Insofar as they do, closure mechanisms can be expected to shift from a kinship basis to a shared “high culture” basis.

We thus have one shared prediction, with both scholarly culture and elite closure arguments predicting that parents’ culture matters (H1a for both; H2 for scholarly culture and H2 weak for elite closure) in contrast to materialist approaches. But the two perspectives differ dramatically as to how and why the advantage comes about, in what types of nations it is to be found, and how it is affected by economic development (Table 1, Hypotheses H1b, H1c, H2 to H6).

We turn now to the evidence.

Data

The World Inequality Study blends survey data from several major international comparative survey projects using large, representative cross-sectional national samples. The surveys include key education and family background measures and many of them include our indicator of scholarly culture, home library size. Pooling them is a massive undertaking because some of the early surveys have father’s occupation coded into country-specific codes which then needed to be recoded into ISCO, because country-specific codes for education needed to be checked against the estimates (provided by each survey house) of the equivalent years of education, and because idiosyncratic undocumented deviations from each project’s survey template need to be discovered.⁷ The early stages of the project were supported by the Australian Research Council⁸ and it is maintained and extended at the International Survey Center (www.international-survey.org).

All surveys included in the World Inequality Study are based on probability samples of a quality sufficient to allow legitimate inference to the national population, or, at least, to that portion of it which is fairly fluent

7 For example, the British ISSP survey truncates year of educational attainment at 14 years, although 15 years would be standard for a university graduate there.

8 Research Infrastructure and Equipment Facility (REIF) grant # R00002808 to the University of Melbourne).

in the dominant language. The subset of the database used here consists of those surveys including a measure of home library size: the International Survey of Economic Attitudes (ISEA), the 1998 edition of International Social Survey Programme (ISSP), Social Stratification in Eastern Europe Project, and an important survey extending the horizon of the database to South Africa. These include ISEA (International Survey of Economic Attitudes) Round-2 surveys conducted in the middle 1990s in Australia, Bulgaria, Finland, Hungary, the Netherlands, and Poland (Kelley, Zagorski, Evans, Ervasti, Ganzeboom, Gijsberts, Kangas, Robert, and Zlatkov 1998); the ISSP (International Social Survey Programme) Social Inequality/ Ideology of Inequality, Round-3 surveys conducted by participating research groups in 1998–2000 in 24 nations. The pooled raw data file is readily available (Jagodinski and Uher 2001). The Social Stratification in Eastern Europe surveys provide data from the middle 1990s for the Czech Republic, Hungary, Poland, Russia, and Slovakia (Treiman 1994). We also include an individual country survey for China, because its radical institutional reforms during the Communist period make it of particular interest: the “Life Histories and Social Change in Contemporary China” survey (Treiman and et al 1996), and a survey of South Africa (Treiman, Moano, and Schlemmer 1996), because it allows us to examine occupational attainment under some of the most exclusionary institutional arrangements that have ever existed.

Replication and Extension

A data file with all the variables used in this analysis will be freely available on the authors’ website www.international-survey.org in a form convenient for re-analysis, together with a clearly documented Stata command file detailing all the analyses in this paper.

Missing Data

There are, of course, missing data in all these surveys. In order to make use of all the information that respondents provide, we imputed missing data separately for each society, following the general approach of King et al, in practice a regression-based technique plus a random component to preserve the variance (Honaker, Joseph, King, Scheve, and Singh 2003; King, Honaker, Joseph, and Scheve 2001). These and related IM procedures have desirable properties when data are missing at random (MAR), as is reasonable to assume here, and also perform well in simulations (Allison 2000; Schafer 1997). Given the large samples, King et al’s attractive software was impractical so we used *MICE* (Royston 2004), choosing options to make it estimate models similar to King’s. In light of the large sample size we have, for simplicity, analyzed a single imputed data set rather than averaging results from multiple data sets. Stata 13

now provides alternative ways to deal with missing data; in practice they lead to identical conclusions.

Measurement

Scholarly Culture: Number of Books in the Parents' Home

To tap parents' scholarly culture, we use the single available measure: the number of books in the parental home, otherwise known as home library size. Following pioneering work in the Netherlands (de Graaf 1986), research in Australia, Britain, and the Netherlands finds that in all the rich, developed nations where the matter has been tested, home library size is highly correlated with other aspects of scholarly culture, including how often parents read "serious novels or poetry"; read science, mathematics or technology; read "other serious books like history or biography"; and went to the library; and, moreover, that it is correlated with, but clearly distinct from, arts spectatorship/ cultural capital involving attendance at drama, museums, and classical music and dance performances (e.g. Crook 1997b; de Graaf, de Graaf, and Kraaykamp 2000; Evans, Kelley, Sikora, and Treiman 2010). Furthermore, the number of books in the parents' home when respondent was an early adolescent is conceptually central, highly correlated with other aspects of scholarly culture; is distinct from other parenting dimensions of culture/habitus such as arts spectatorship; applies to a wide variety of cultures, not just modern Western societies; and has been widely used in international studies of educational achievement (e.g. Bodovski and Farkas 2008; Chiu and Kho 2005; Crook 1997b; de Graaf, de Graaf, and Kraaykamp 2000; Farkas and Hibbel 2007; Hindman and Morrison 2012; Park 2008; Woessmann and Fuchs 2004; Zimdars, Sullivan, and Heath 2009). Moreover, a panel study in Australia showed that home library size can be reliably reported by respondents decades after they left their parents' homes, with a test-retest reliability of 0.76 (Evans, Kelley, Sikora, and Treiman 2010).

In most of the surveys, the question on the number of books in the parents' home was located in a module of retrospective questions about childhood and adolescence; it usually followed items on mother's and father's education and father's occupation when respondent was young.⁹ In the diverse array of countries in this dataset, the individual respondents come from homes with a wide variety of home library sizes:

9 The reference time was most often when respondent was age 14; in some nations it was age 15 or 16 according to local conventions.

About how many books were there around your family's house when you were 14 years old?	
None	8
1 or 2	7
Around 10	14
Around 20	16
Around 50	20
Around 100	16
Around 200	10
Around 500	6
1,000 or more	3
(Total)	100%
(Mean)	112
(Cases)	58,944
Test-retest reliability	
over 5 years (Australia)	0.76

Thus, the distribution of home library sizes is roughly mound-shaped and symmetrical when considered on a log scale, and prior research found a linear relationship between the natural log of home library size and years of education completed (Evans, Kelley, Sikora, and Treiman 2010), so we began with that specification for the effect on occupational status and confirmed in exploratory analyses that it is appropriate (see Table 2, note 1).

As noted above, prior research, albeit usually on one country at time, has found that parents' stratification position and home library size are correlated, but distinct. This is also evident in our data. For example, societies where the mean home library size was 50 or less have mean parental educational attainments ranging from under 2 years (rural China) to over 7 years (Cyprus, Philippines).

Moreover, an important consideration when assessing whether two variables are alternative measures for one underlying concept is whether they have the same correlations with criterion variables (e.g. Treiman 2009). In the case at hand, turning to the individual-level data (Table 4 in the Appendix), we reject the claim that home library size and parents' education are such alternatives, because home library size has substantially lower correlations than does parents' education with parents' stratification position as indicated by father's occupational status (.41 vs .55) and by father's supervisory responsibility (.29 vs .37). Moreover, home library size has a weaker correlation with

national socioeconomic development (as indicated by GDP per capita) than does parents' education (.23 vs .36).

Occupational Status

To measure occupational status, we use Kelley's Worldwide Status Scores. These are based on the Treiman categorization of ISCO occupations into 14 substantively coherent groups (Treiman 1977) and scored using a canonical correlation procedure.¹⁰ Details are in (Kelley 1990: Appendix). The scale is regularly used in cross-national research (e.g. Breznau 2010; Kelley and Evans 1995; Sikora 2005) and in practice leads to results very similar to Duncan SEI scores in the US and Treiman-Ganzeboom ISEI scores in other nations (e.g. in Evans, Kelley, Sikora, and Treiman 2010: Table A7).

Years of Education

Education was measured by questions appropriate to each nation and then recoded by the original investigators into equivalent years of formal education (Jagodinski and Uher 2001; Treiman 1994; Treiman and et al 1996). Additional, country-specific information on degrees and other qualifications is available for some nations. Following procedures of the international education coding section of the Australian Bureau of Statistics, the WIS has sometimes readjusted the original investigators' scores to be more internationally comparable (Sikora 2003) (see also Buchmann 2002; Marks 2004).

Socioeconomic Development

Home library size is by no means a proxy for socio-economic development. For example, the mean home library size is between 100 and 150 books for countries ranging in levels of development from Russia to Hungary to Japan to the USA and the individual level correlation is only .23 (Table 4 in the Appendix). Later, we will see that home library size and per capita GDP, our measure of socioeconomic development (World Bank 2012), both have distinct effects on occupational status.

10 Some recent research suggests that a two-dimensional representation is better than a one-dimensional representation of the occupational status space for the US (Hauser and Warren 1997), but, unfortunately, the new scores are only available for the US, so we cannot use them here even if (as is arguable) the general point were accepted. It seems likely that if the new indices were available, scholarly culture would tend to influence access to the education-oriented dimension more than the monetarily rewarding dimension, but that remains a matter for future research.

Control Variables

Variables' rationales: To obtain as pure an estimate as possible of the effects of scholarly culture on occupational attainment, we need to control as many potentially confounding influences as possible. Because an obvious concern is that scholarly culture could be merely a proxy for class, it is important to control as thoroughly as possible for parents' class. Accordingly, we use a powerful and flexible formulation that allows diverse elements of class to have separate effects (Robinson and Kelley 1979). It includes stratification elements from the classical Blau-Duncan model of attainment (parents' education, father's occupational status, gender), ownership elements from Marxist theory (father being petty bourgeois or having a larger business, rather than being an employee), and authority elements proposed by Dahrendorf (supervisory responsibility).

Variables' scoring: *Parents' education* is scored as years completed, *father's occupational status* is coded from the surveys' original ISCO or country-specific scores into the Worldwide Status Scores which range from 0 to 100 (Kelley 1990), *male* is a dichotomous variable with women scored 0 as the reference category and men scored 1, *father petty bourgeois* is scored 1 for solo self-employed fathers and zero for others, *father capitalist* is scored 1 for self-employed fathers with larger enterprises (note that employee fathers are scored zero on both these variables), *father supervisor* is scored 1 for fathers who supervise others at work and zero for fathers who do not.

Models and Methods

Models

To assess the theories, our models assess the effects of home library size on occupational attainment controlling for a variety of class-related variables and contextual characteristics. The total effects model is:

$$\begin{aligned} \text{OccupationalStatus} = & \\ & f(\ln\text{BooksInParentsHouse}, \text{ParentsEducation}, \\ & \text{FathersOccupationalStatus}, \text{FatherSoloSelfEmployed}, \text{FatherOwner}, \\ & \text{FatherSupervisor}, \text{Male}) \text{ Eq 1} \end{aligned}$$

The model estimating the direct effect, net of respondent's education is:

$$\begin{aligned} \text{OccupationalStatus} = & \\ & f(\ln\text{BooksInParentsHouse}, \text{ParentsEducation}, \\ & \text{FathersOccupationalStatus}, \text{FatherSoloSelfEmployed}, \text{FatherOwner}, \\ & \text{FatherSupervisor}, \text{Male}, \text{YearsEducation}) \text{ Eq 2} \end{aligned}$$

We also estimate country-by-country OLS analogues to the core model to check whether the home-library-size effect is found in every country in the study. To avoid putting undue pressure on the sometimes small national samples, in the country-specific analyses we include only the most important variables – specifically, those with coefficients of 0.10 or higher in the pooled analysis.

We estimate these models in the pooled analysis by multi-level random-effects variance components procedures in STATA 12, specifically xtreg (estimates of corresponding models with xtmixed are virtually identical). Multi-level estimates are better than OLS for the pooled analyses because they provide correct standard errors for our country-level variable, per capita GDP.

Variables Standardized to a Common Metric

The variables are “standardized to a common metric” (Joreskog and Sorbom 1993). Specifically, all variables are standardized in the pooled sample to mean 0 and standard deviation 1. So for the pooled analysis (Table 2, columns 1 and 2), they are the same as conventional standardized results. But then they are used unchanged in the country-by-country analysis of Table 3 where we report *metric* coefficients – so those results are not sensitive to differences between countries in standard deviations.

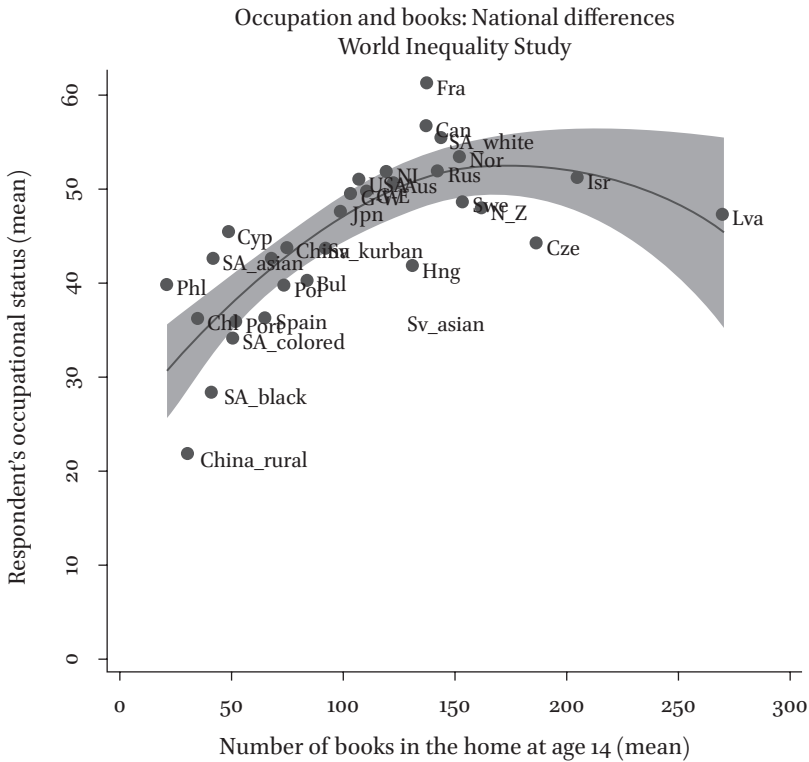
Magnitudes for these “standardized to a common metric” results are then comparable with each other (like standardized coefficients) and also comparable between countries and comparable with the pooled sample (unlike standardized coefficients). The advantage of this procedure is that it enables us to clearly see how important parents’ culture is (very important, indeed more important than any other single influence in our analysis); how it compares with the “usual suspects” of parents’ education and fathers’ occupation (a little more important); how all of these compare with Marxian and Dahrendorfian aspects of class (much more important); and how this varies among countries.

Results

Description

To begin, consider the relationship between the number of books in the home and occupational status at the country level (Figure 1). Countries full of bookworms, where the mean number of books in the home in the family of origin is high, are also countries whose denizens mostly attain higher status jobs. The relationship between these variables at the country level is curvilinear – climbing more steeply at first then levelling off. (We linearize it in the subsequent multi-level analysis by analyzing the natural log of number of books, as noted

in the Measurement section, above.) The slight downturn for countries with very large numbers of books suggested in Figure 1 is probably not real, depending heavily on the extreme and atypical Latvian results,¹¹ and not evident in the log specification used in the rest of the analysis.



95% confidence interval. Quadratic fit. Linear $r = .68$

FIGURE 1 *Number of books in the home at age 14 and adult occupational status (society means): National differences.*

11 Our inquiries suggest that the Latvian ISSP survey followed appropriate, standard protocols, so it is likely that this result merely reflects sampling variability rather than errors in data collection. Other Nordic countries (Norway, Sweden) are not exceptional. Preliminary results from the 2009 ISSP survey show Latvia with a number of books that very similar to Norway, Sweden, and Estonia, with all these countries among the highest in the world. Iceland is the highest. A log specification like that used in the present analysis linearizes the relation very satisfactorily. We are tempted to speculate about long, cold winters.

Hypothesis 1a: Culture Matters

In the total effects model (Eq. 1) for the pooled sample, parents' scholarly culture, measured by home library size, has a very substantial influence on their offspring's later occupational status (Figure 2 Panel A; Table 2 column 1). The "standardized to a common metric" effect is 0.20, larger than the effects of the well-known influences in this area: parents' education (0.14) and father's occupational status (0.13). It is also substantially larger than the effect of per capita GDP (0.08). This large effect of home library size is consistent with both scholarly culture and elite closure/discrimination theories. But it is strongly inconsistent with a traditional materialist model of social mobility.

The other control variables have little impact. Men get slightly lower status occupations. Ownership and authority, although central to Marx and Dahrendorf's definitions of class, are of little consequence for offspring's occupational status. Only supervisory authority has a statistically significant effect, and it is tiny, only a third to a quarter the size of the others.

Hypothesis 1b: Does a Little Culture Matter?

Scholarly culture theory predicts that as home library size expands from nothing to just a few, and then a few more, occupational status will increase very steeply. But as we reach large home library sizes, further gains are harder to come by, since each additional book provides fewer new skills and less new information, so the relationship flattens out (H1b). By contrast, elite closure theory suggests that the relationship should be fairly flat at the beginning, where there is no realistic possibility of elite entry. But then it should get much steeper, once elite entry is a possibility. Figure 3 shows the theory (Panel A) and the evidence (Panel B).

Worldwide, the evidence is strongly in favor of the scholarly culture theory. There is not even the remotest sign of the flat beginning followed by a steep rise as predicted by elite closure theory.

Hypothesis 2: Direct Discrimination or Indirect Consequences of Education?

When we augment Eq. 1 with respondent's education (Eq. 2), the familiar effect of education on occupational status is of course very large. Its standardized effect of 0.55 dwarfs all the other effects in the model, as is well known (e.g. Blau and Duncan 1967).

In this model, the remaining direct effect of home library size has shrunk from .20 to .04. This is very small, although still statistically significant. It suggests that there are a few skills conferred by reading that shine forth more

TABLE 2 *Effect of parents' culture and other variables on education, occupational status and performance in school: Multi-level regression coefficients (OLS in cols. 6 and 7). Various societies, 1972–2002. Theoretically important results shown highlighted in bold face. Unless shown in grey, all coefficients are significantly different from zero at $p < .01$, two-tailed.*

	Main effects (Standardized) [1] 31 societies		Interaction: GDP × Books (Variables in metric form) 31 societies			Additional controls: Beaux-Arts and parents' wealth [3] (Standardized)		
	Total effects on occupation	Direct effects on occupation	Total effects on occupation	Direct effects on occupation	Education (years)	Total effects Australia	Education	Performance in school 42 societies
	(1)	(2)	(3)	(4)	(5)	Occup. (6)	(7)	(8)
Books in parents' home	.20	.04	3.15	1.16	.71	.13	.23	.21
Parents' education (years)	.14	.01	.96	.07	.24	.00	.17	.08
Father's occupational status	.13	.09	13.48	7.66	1.24	.18	.15	.14
Father business owner	.00	.00	-.18	-.29	.08	.04	.06	–
Father petty-bourgeoisie	-.01	.01	-.38	-.08	-.23	.00	.02	–
Father supervisor	.03	.02	2.45	.87	.23	.06	.08	–
Male	-.01	-.04	-.67	-.203	.39	.03	.03	-.12
GDP (index, USA=1.0)	.08	.04	11.52	6.33	2.05	–	–	.27

	Main effects (Standardized) [1] 31 societies		Interaction: GDP × Books (Variables in metric form) 31 societies			Additional controls: Beaux-Arts and parents' wealth [3] (Standardized)		
	Total effects on occupation	Direct effects on occupation	Total effects on occupation	Direct effects on occupation	Education (years)	Total effects Australia	Performance in school 42 societies	
	(1)	(2)	(3)	(4)	(5)	Occup. (6)	Education (7)	(8)
Education (respondent)	–	.55	–	[4]	–	–	–	–
GDP × Books interaction	–	–	–0.9104	–0.9190	–0.2702	–	–	–
Beaux-Arts culture [2]	–	–	–	–	–	.03	.00	.05
Parents' wealth	–	–	–	–	–	–	–	.03
(constant)	.04	0.01	18.27	14.26	5.84	0.00	0.00	0.00
(rho)	.02	.02	.02	.02	.06	–	–	.10
(R-squared)	(20%)	(35%)	(20%)	(38%)	(38%)	(9%)	(22%)	(28%)
(Cases and nations)	58,944 in 31 societies	58,944 in 31 societies	58,944 in 31 societies	58,944 in 31 societies		3,826 Australia	4,421 Australia	196,113 in 42 societies

TABLE 2 *Effect of parents' culture and other variables on education, occupational status and performance in school (cont.)*

(Hypotheses tested)	Main effects (Standardized) [1] 31 societies		Interaction: GDP × Books (Variables in metric form) 31 societies			Additional controls: Beaux-Arts and parents' wealth [3] (Standardized)		
	Total effects on occupation (1)	Direct effects on occupation (2)	Total effects on occupation (3)	Direct effects on occupation (4)	Education (years) (5)	Total effects		Performance in school 42 societies
						Australia (6)	Education (7)	
	H1a	H2	H4 H5	H6		H1a H1c	H1c	H1c Wealth

Grayed out figures are not significantly different from zero at $p < .05$, two-tailed.

[1] Variables in Columns 1 and 2 are standardized in the pooled sample to mean 0 and standard deviation 1, hence metric and standardized coefficients are equal in this pooled analysis. The same variables are used unchanged in the country-by-country analysis of Table 3 where we report metric coefficients; magnitudes for these "standardized to a common metric" results are then comparable with each other (like standardized coefficients) and also comparable between countries and with this pooled sample (unlike standardized coefficients). See Joreskog and Sorbom 1993. The log specification of books in parents' home fits far better than a linear specification (R-square of 20% compared to 18.5%); specifying books with a linear and a quadratic term shows the effect is concave down, not concave up as the elite closure theory would predict.

[2] Available for Australia and PISA data only (columns 6, 7, and 8).

[3] International Social Science Survey/ Australia (columns 6 and 7) and PISA 2000 (column 8). PISA standardized effects from the corresponding OLS.

[4] Not shown: Effects of education (–.91), education squared (.23), GNP by education interaction (1.21), and GNP by education squared interaction (–.08). All are statistically significant at $p < .01$.

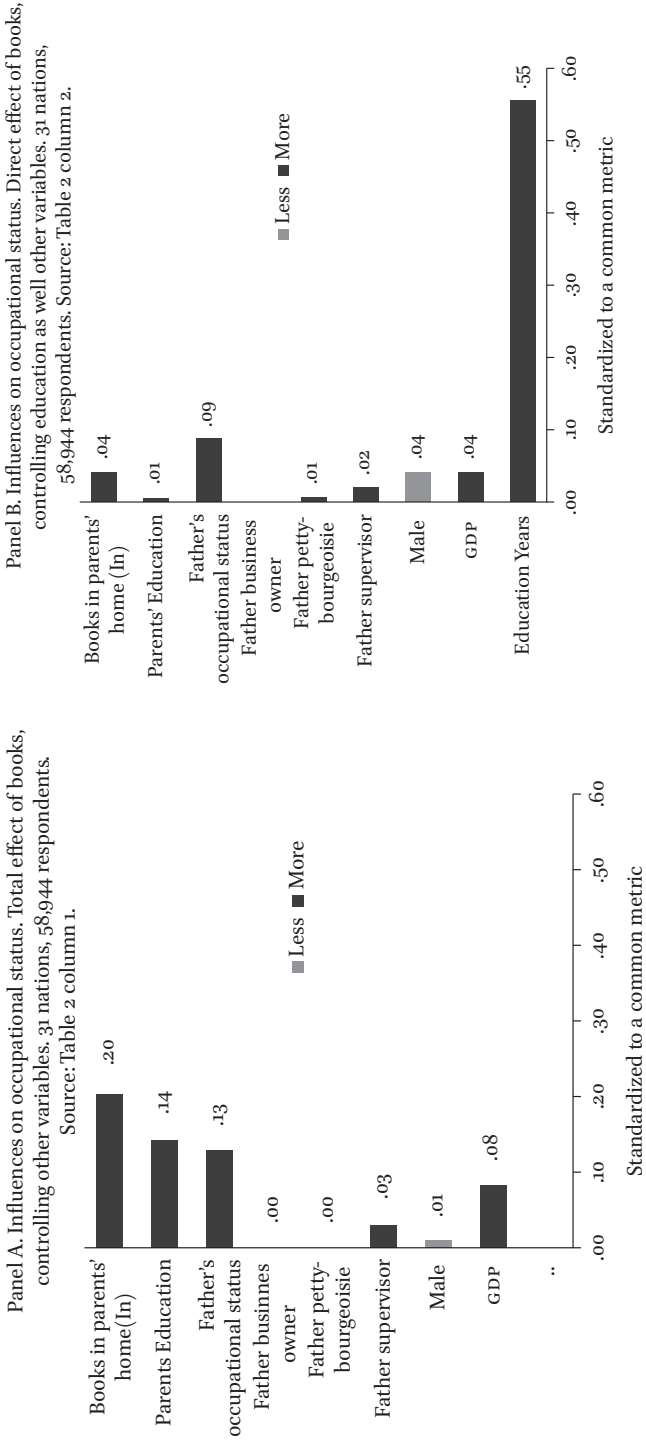


FIGURE 2 Books and other influences on occupational status: total effects (left panel) and direct effects (right panel). Details in Table 2.

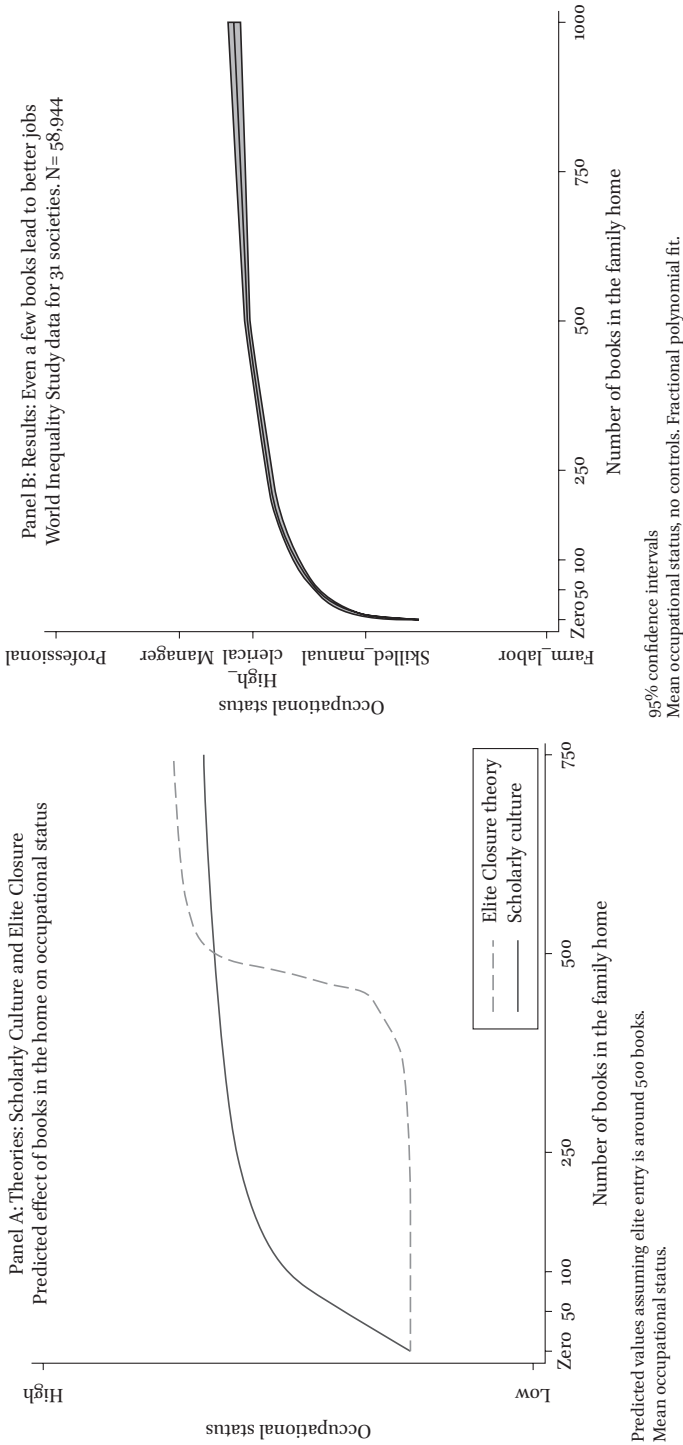


FIGURE 3 Effect of parents' home library size on their children's later occupational status (Panel A) and results (Panel B).

brightly in the workplace than the school, or possibly that there is a little bit of secret handshake discrimination giving entrée to elite members.

Comparing the total effects model to the direct effects model (Figure 2 Panel B vs Panel A; Table 2, col. 2 vs col. 1) emphasizes the role of education as an intermediate/ transmitter/ mediator variable between home library size and occupational status. That is not so well known.

The key point is that a hefty majority of the effect of home library size on occupational status – about 80% of it – is indirect through education. This is consistent with the scholarly culture H2 holding that the effect of parents' home library size will be largely indirect through the children's formal education (Table 1, Panel C). This is true whether or not the small remaining direct effect of .04 is indicative of a little bit of elite closure, or of some other mechanism.

The dominantly indirect effect of home library size is also consistent with the *weak* version of the elite closure hypothesis (Table 1, Panel C, Alt a) which envisions elite gatekeepers only in the educational system, not in hiring and promotion.

But it is not consistent with the *strong* version of the elite closure hypothesis (Table 1, Panel C, Alt b) which envisions elite gatekeepers both in education and in the job market. The tiny direct effect of home library size after education is controlled shows that if elite gatekeepers are active in hiring and promotion then at best they are vanishingly rare, or peculiarly ineffective, or both.

Hypothesis 3: Everywhere, or Only in Western Countries?

Are these difference found throughout the world, as predicted by the scholarly culture theory, or only in the West, as predicted by elite closure theory (Table 1 Panel D)? To find out, we ran the models separately for each country (Table 3). To avoid putting too much pressure on the sometimes small samples, we include only the most important predictors.

The total effect is statistically significant, and generally large in 90% (28 out of 31) of the societies. Although there is great variation among the countries in the size of the effect, this variation does not follow any obvious grouping. The significant effects range from a low of about .10 in for Swedes and "coloured" South Africans to a high of about .30 for ex-West Germans, Poland, and Cypriots. These results support the scholarly culture theory's claim that the advantage that offspring of cultured families have in getting better jobs should be evident throughout the world and they undermine the clear inference from elite closure/ discrimination arguments that this should only happen in Western capitalist societies (Table 1 Panel D). Indeed in a pooled analysis books are

TABLE 3 *Parents' books: Total effects on occupation (from Eq.1), direct effects (Eq. 2), and indirect effects controlling education separately for each of 31 societies, 1972–2002. Also total effects of parents' education and father's occupation. Metric regression coefficients, with all variables standardized to a common metric.[1] For societies listed in italics, the total effects of books differ from the pooled sample at $p < .05$, two-tailed.*

	Books in parents' home[2]			Parents' education	Father's occupation	(Cases)
	Total	Direct	Percent indirect	Total	Total	
Western Europe and other bourgeois societies						
Australia	.19	.02	90	.11	.16	13,265
Canada	.09	.02	83	.11	.16	723
Chile	.26	.06	78	.28	.15	576
<i>Cyprus</i>	.29	.02	92	.21	.18	754
France	.20	.02	90	.10	.09	1,488
Germany – West	.32	.16	51	.21	.24	438
Israel	.20	.03	85	.18	.08	891
Japan	.21	.14	34	.09	.11	894
<i>Netherlands</i>	.05	-.02	130	.21	.17	1,266
<i>New Zealand</i>	.09	-.04	150	.17	.11	747
Norway	.28	.05	83	.05	.14	1,033
Philippines	.18	.06	64	.19	.09	796
Portugal	.17	-.01	105	.28	.33	870
South Africa – White	.14	.05	66	.13	.13	1,876
Spain	.19	-.01	103	.25	.23	804
Sweden	.11	.01	95	.21	.14	931
United States	.17	.02	86	.13	.13	1,046
Formerly Communist						
Bulgaria	.20	.07	63	.20	.12	2,591
China – urban born	.23	.02	89	.07	.11	1,316
China – rural born	.20	-.01	103	.09	.14	3,124
<i>China (urban & rural)</i>	.26	.02	94	.12	.20	4,440
<i>Czech Republic</i>	.26	.11	58	.15	.17	4,988
Germany – East	.21	.15	28	-.04	.19	239
Hungary	.23	.05	79	.13	.12	3,149

	Books in parents' home[2]			Parents' education	Father's occupation	(Cases)
	Total	Direct	Percent indirect	Total	Total	
Latvia	.31	.07	78	.07	.12	621
<i>Poland</i>	.28	.08	71	.11	.17	2,420
Russia	.22	.07	70	.13	.12	3,847
Slovakia	.24	.06	76	.21	.10	3,717
Slovenia	.25	.08	68	.25	.14	833
Minorities in South						
Africa						
South Africa – Asian	.27	.07	72	.17	.13	506
<i>South Africa – Black</i>	.14	.06	61	.17	.11	2,586
<i>South Africa – Coloured</i>	.11	-.03	128	.29	.16	609
All nations combined						
All – pooled	.21	.06	73	.18	.16	58,944

[1] Variables are standardized in the pooled sample to mean 0 and standard deviation 1. Magnitudes for these “standardized to a common metric” results are then comparable with each other (like standardized coefficients) and also comparable between countries and with this pooled sample (unlike standardized coefficients). See Joreskog and Sorbom 1993.

[2] Coefficients in *Italics* in columns 1 and 2 are not significantly different from zero at $p < .05$, two-tailed.

slightly *more* important in formerly Communist nations (17% more than in Western nations, $z = 3.28$, $p < .001$). They are still a big advantage for minorities in South Africa, although possibly not as much as in the West (15% less, $z = -1.74$, $p = .08$).

How much of the effect is direct? Again, it varies a good deal among countries (Table 3 col. 2). On average, about a quarter is direct and three-quarters indirect. And for most countries the direct effect is not statistically significant. Interestingly in France, the home of cultural capital theory, the effect is towards middle of the range – about the same as for rural-born Chinese, Israelis, Americans, and Colored South Africans – and is not statistically significant, contrary to elite closure theory.

The key finding here is that the effect of home library size on occupational status is greatly reduced, or even eliminated, in a large majority of the countries in this sample, once respondent's own education is taken into account

(H2). This supports scholarly culture theory and is directly contrary to elite closure theory's predictions.

Scholarly Culture and Socio-economic Development

Does the effect of home library size diminish with development, as the scholarly culture hypothesis suggests (H4), or remain constant or even increase, as the elite closure hypothesis suggests? We address this issue with a multi-level total effects model that includes a cross-level interaction term to capture the dependence of the book effect on the level of development (Figure 4 Panel A; Table 2 column 3).

These results show that, as is well known, being born in a rich nation is an occupational advantage. But it is not a huge one. Comparing a very poor nation with a very rich one (like the US), the total advantage is about 10 status points (out of 100), and the difference net of education is about 5 status points.

For our purposes, the key result is that growing up in a bookish home increases occupational attainment more in poor nations (Figure 4 Panel A, red confidence band) than in rich (dashed band). For example, in a very poor nation, someone coming from a home with no books, but otherwise average, would expect to get a job with 29 status points (around the level of a routine sales worker) while someone from an otherwise similar family with hundreds of books could expect a job with 51 status points (around the level of a higher sales employee), fully 22 status points better. By contrast, in a very rich nation like the USA, the gain would be only 15 status points (41 versus 56). These results are consistent with the scholarly culture argument that books matter more in less developed nations (H4).

What about the direct effect? We saw above that, for the pooled sample, there is a small remaining direct effect of home library size on occupational status even after taking educational attainment into account (Figure 2 Panel B). The elite closure theory would lead us to expect this to be large in advanced countries and small or absent in developing societies. By contrast, scholarly culture theory predicts little or no direct effect for the advanced societies, but with a remaining direct effect in developing countries. We address these issues with the model of Eq. 2 (Table 2 column 4), with results shown in Figure 4 Panel B.

In the least developed societies in this sample there is a direct effect of home library size on occupational status, net of educational attainment. For example, someone from a home with no books, but otherwise average, could expect a job with around 38 status points compared to 45 or 46 points for someone from an otherwise similar home with hundreds of books. That is a small but worthwhile increase of about 7 status points.

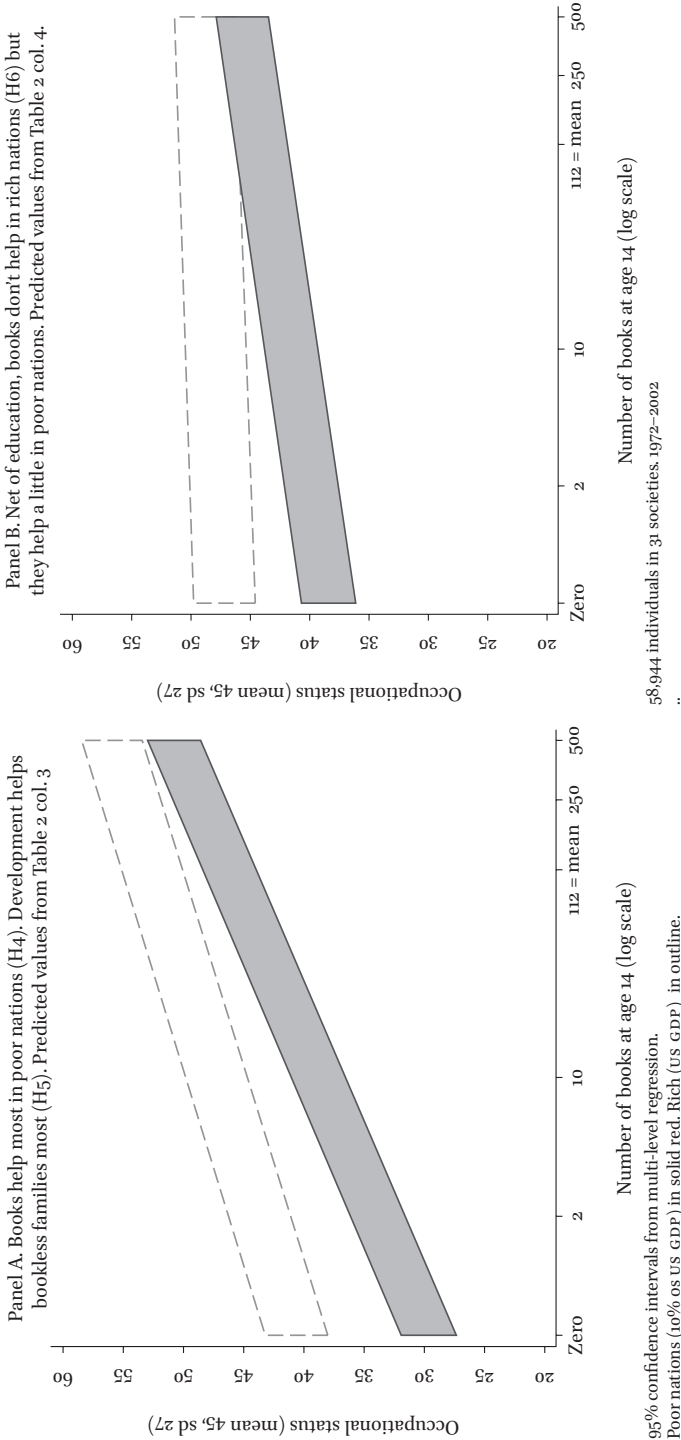


FIGURE 4 Books raise occupational status, especially in poor nations (Panel A). The effect is mostly indirect through education in poor nations and entirely indirect through education in rich nations.

But this direct effect declines with development and converges towards zero in advanced societies, the home of elite closure/ cultural capital theory. This is consistent with scholarly culture theory's Hypothesis 6. For example, in a highly developed society like France, having a lot of books in the home increases occupational success by only 3 or 4 points (and just 1 or 2 points for an even more developed nation like the US).

Moreover, the advantage of being born in a rich society rather than a poor undeveloped society is larger for families with few books (8 or 9 status points) than it is for highly cultured families (3 or 4 status points). These results are consistent with H5.

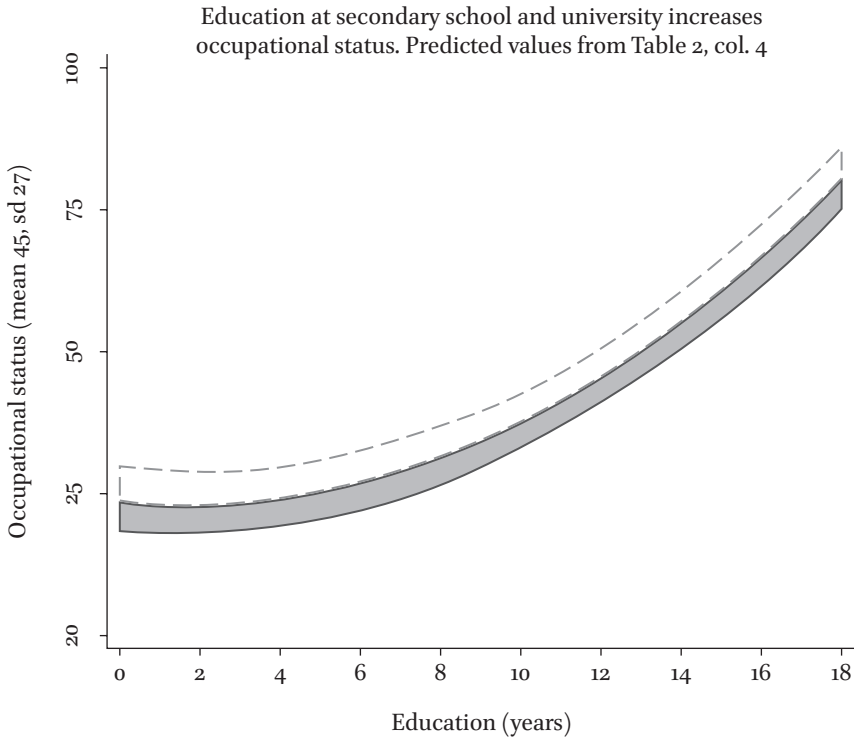
All these results are consistent with the scholarly culture hypothesis (H4, H5, and H6) and undermine the elite closure hypothesis.

Mechanisms

Books to education. Consider the mechanisms a little more closely. The first step is from books to education (Evans, Kelley, and Sikora 2014; Evans, Kelley, Sikora, and Treiman 2010). The effect of home library size on education is significant across the wide span of socio-economic development represented in these data: Books matter everywhere. But the effect is clearly larger in developing countries (a difference of 4 or 5 years of education between otherwise comparable families, one with no books and the other with hundreds) than it is in advanced nations (a difference of only 3 years of education). To our knowledge, this interaction has not been assessed in prior research.

Education to occupation. Then, at the next step of the process, education, particularly secondary school and university, of course has a substantial pay-off in occupational status (Figure 5). The relationship between education and occupational status is identical across the span of economic development represented in these data: The confidence bands for even the most developed and least developed societies are essentially identical, and their placement differs only by a shift factor reflecting the (small) occupational advantage that development induces net of education, books, and other things.

Thus, the main way that scholarly culture in the parental home helps children get ahead at work is by enhancing their educational achievement. This supports the scholarly culture thesis, and undermines the elite closure thesis. But this process is not identical across levels of development: There is a substantial direct effect of home library size in the least developed societies; the direct effect dwindles with development, and little or nothing remains of it at the highest levels of development.



95% confidence intervals from multi-level regression.

Poor nations (10% of US GDP) in solid red. Rich (US GDP) in outline.

58,944 individuals in 31 societies, 1972–2002

FIGURE 5 *Primary education has little impact on occupational status at the lowest levels, but secondary schooling and university have strong effects in both poor and rich societies.*

Further Explorations

One might wonder whether there is a “trade-off” between parents’ education and home library size, with the stratification system in some countries focusing on formal education and paying little heed to the scholarly culture, while other countries do the reverse. Such a pattern would show up in the analyses of Table 3, countries emphasizing formal education would have large regression coefficients for schooling and small ones for books, while countries that emphasize scholarly culture per se would show the opposite pattern.

However, the results do not show any such pattern, with a correlation of just $-.18$ ($t = -0.96$, $p = 0.35$). Countries where the book effect is large are just as likely to have large parent education effects as countries where the book effect

is small. Thus scholarly culture and formal education, despite being correlated, reflect distinct social processes.

Discussion

Exposure to scholarly culture as a child tends to enhance occupational attainment as an adult, in this sample of 31 societies covering a large part of the world except for the Muslim countries and Africa. The relationship is net of parents' education and father's occupation, and it is significant both in our pooled sample and in 90% of the societies, when estimated separately. The size of the relationship varies a good deal, a matter that requires attention in future research.

Most of this effect is indirect through scholarly culture's impact on education: Children from bookish homes get better jobs mainly because they get more education; education, in turn, leads to better jobs. Throughout, the relationship is linear in the log: Additional books in the home especially enhance the ordinary success of children from homes with few or no books. This is centrally about moving up within the working class and lower middle class, not about elite recruitment.

These findings extend the literature on stratification in several ways. (1) First, for the highly developed countries where the influence of scholarly culture on education has already been clearly established, the results illuminate the next stage of the attainment process, showing that there is a cultural, as well as a material basis to *occupational* attainment. (2) Second, they show that the advantage in the jobs race provided by a bookish home is conferred largely through the boost that it gives to the offspring's educational career. This is in contrast to the substantial direct effect predicted by elite closure/ cultural capital theory. (3) Third, these results hold in a very wide range of countries, not only in Western Europe and its overseas extensions, but also in Mediterranean countries, in Central Europe, in recently Communist Eastern Europe, in poor Asian nations (the Philippines and China), in a rich Asian nation (Japan), in at least one South American country (Chile), and in one, admittedly atypical, African country (South Africa). We do not yet have data for the Muslim countries and for most of Africa, but we propose, as a working hypothesis, that the effect will be found there as well. This world-wide reach of scholarly culture is inconsistent with elite closure theories. (4) Fourth, socioeconomic development strongly conditions/ contextualizes this process. The total effect of socialization into the scholarly culture is strong in the least developed

societies and diminishes, but does not disappear, with development. Perhaps even more importantly, the direct effect – predicted by elite closure theory to be strong in advanced societies – is about half the size of the total effect in the least developed societies and *shrinks* with development, nearly or entirely vanishing in the advanced societies. These results are consistent with scholarly culture theory.

Thus, our results support H₁, that the offspring of families whose way of life emphasizes books and reading will climb higher on the occupational ladder than otherwise comparable people from families where books and reading are rare or absent. People who grow up in homes rich in scholarly culture do get better jobs than their peers who grew up in less bookish families. H₁ is common to the scholarly culture theory and the elite closure theory, and this first result is therefore consistent with both.

However Hypothesis 1 is the only important place where scholarly culture and elite closure theories overlap in their predictions. Everywhere else they differ (six separate predictions: Table 1 hypotheses H_{1b}, H₂, H₃, H₄, H₅ and H₆). And everywhere the results support scholarly cultural theories (seven predictions right and none wrong) and undermine elite closure arguments (one prediction right and six wrong – just a 14% success rate). The finding that the direct effect of home library size is much smaller than the total effect once education is taken into account supports hypothesis H₂ which claims that the influence of home library size on occupational attainment will come about largely because children from homes imbued in scholarly culture will thrive in the educational system, bringing skills that enhance their success at school and gaining there skills that, in turn, will enhance their success at work. This finding is contrary to elite closure theory's Alternative H₂ predicting that there would be a substantial direct effect of a bookish childhood on occupational attainment (as well as a possible indirect effect). Note that this claim brackets the question of whether the effects of home library size and reading on educational success are more consistent with the scholarly culture theory or the elite closure theory; instead it only deals with the subsequent question of whether employers respond primarily to home library size in the family of origin directly as a signal separate from educational attainment (which strongly would favor the elite closure interpretation) or primarily indirectly via educational attainment (which favors the scholarly culture view, especially given strongly accumulating evidence that in education the impact of books in the home reflects the development of cognitive skills and complexity (Andersen and Jæger 2014; de Graaf, de Graaf, and Kraaykamp 2000; Dronkers 1992; Evans, Kelley, and Sikora 2014; Evans, Kelley, Sikora, and Treiman 2010; Georg 2004;

Park 2008; Roksa and Potter 2011; Teachman 1987; Zimdars, Sullivan, and Heath 2009) rather than gatekeeping).

Moreover, the two theories led to different predictions about international differences in the linkage between home library size and occupational attainment. The finding that the total effects of home library size on occupational status are found throughout the world emphasizes the ubiquitous utility of the cultural toolkit provided by a bookish childhood, supporting scholarly culture theory's H3. By contrast, cultural capital theory suggests that because group membership signals are arbitrary, any signal that is aligned with the country's elite culture should do. There is no reason for elites of varying moral, religious, and inequality related cultures to select the same signal.

By contrast, others might argue that in an increasingly globalized context, the powerful "shadow governments" constituted by international organizations such as the World Bank create strong pressures for institutional isomorphisms that, in turn, homogenize cultures by strongly legitimating rational systems such as education thereby leading to similar outcomes across many countries (DiMaggio and Powell 1983; Meyer 1977; Meyer and Rowan 1977). From this point of view, the observed effect of education on occupational status would reflect a legitimating myth, rather than genuinely enhanced skills and capabilities. It does not seem likely that such a myth would account for the strong impacts of education (see also Kolosi 1988; Mateju and Lim 1995; Meyer, Tuma, and Zagorski 1979; Robert 1991a), and hence the indirect impacts of home libraries in the diversity of systems where we observe them, particularly in the Communist countries of East Central Europe which were deliberately and strenuously isolated from international organizations and the risk of cultural contamination and institutional isomorphism. Yet we find the effect there, nonetheless.

Taking the international context issues a step further, we assessed the degree to which socioeconomic development contextualizes/ conditions the influence of bookish homes on occupational attainment. The results show that the linkage is present at all levels of development: It is very strong in the least developed countries and it shrinks with development, but remains substantial in the advanced societies. This is the pattern predicted by scholarly culture theory (H3, H4, H5 and H6) and opposite to the pattern predicted by elite closure theory, insofar as it even makes any predictions on these matters. In addition, and perhaps more importantly, the direct effect of home library size on occupational attainment is smaller than the total effect in the least developed countries, and it shrinks with development, vanishing entirely in the most advanced societies. This is consistent with scholarly culture's claim that the

greater uncertainties of life and fragility of educational access in developing countries lead to some substantial portion of youth having scholarly culture skills that are not absorbed in their educational attainment. It is inconsistent with elite closure theory's implication that the direct effect should be small in developing countries where elite closure depends on kinship ties and should grow with development.

All in all, we have compared hypotheses drawn from two middle range theories: scholarly culture theory and elite closure theory (sometimes called "cultural capital" theory). We used a substantial dataset including the broadest range of countries to have been studied on this topic to date, and providing large, representative samples of individuals within them. Our multi-level models and simpler supporting statistics provide strong support to the scholarly culture theory and undermine elite closure theory in the context of home libraries: The more books there are in the home, the further children go in education, and, because of that, the better the jobs they get. Note that our results do not provide evidence about whether elites use *other* signals to help them identify group members and hoard advantages: All they reveal is that the scholarly culture is not part of any such process. Socialization into the scholarly culture endows children with skills, not signals.

Appendix

TABLE 4 Means, standard deviations, and correlations, 31 societies pooled, 1972–2002. N=58,944 respondents in the labor force.

	Mean	s.d.	1	2	3	4	5	6	7	8	9
1 Books in parents' home (ln)	3.42	1.91	1.000								
2 Occupational status	45.15	27.02	0.363	1.000							
3 Parents' education (years)	7.81	3.98	0.570	0.378	1.000						
4 Father's occupational status [1]	0.34	0.26	0.414	0.343	0.551	1.000					
5 Father business owner	0.09	0.28	0.083	0.077	0.091	0.132	1.000				
6 Father petty-bourgeoisie	0.12	0.33	-0.145	-0.083	-0.134	-0.184	-0.101	1.000			
7 Father supervisor	0.24	0.35	0.294	0.237	0.369	0.454	0.320	-0.246	1.000		
8 Education (respondent, years)	11.21	3.86	0.523	0.576	0.573	0.397	0.070	-0.106	0.257	1.000	
9 Male	0.52	0.50	-0.032	-0.021	-0.011	-0.009	0.011	0.001	-0.001	0.036	1.000
10 GDP per capita	0.49	0.26	0.230	0.221	0.356	0.252	0.210	0.014	0.284	0.210	0.003

[1] For convenience, father's status is scored 0 through 1 rather than 0 through 100.

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