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MPIfG Discussion Paper 11/1

**Skills and Politics**  
General and Specific

Wolfgang Streeck



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## Abstract

Skills and skill formation have become central topics in contemporary political economy. This essay traces a key concept in the current debate – the distinction between general and specific skills – back to its diverse origins in American postwar labor economics, comparative industrial relations, and human capital theory. To show how the distinction has evolved over time and between disciplines, it is related to other dual classifications of work skills, like high versus low, broad versus narrow, theoretical versus experiential, professional versus occupational, explicit versus tacit, extrafunctional versus functional, and certifiable versus noncertifiable. The aim is to reconstruct how notions of skill generality and skill specificity came to be used as the foundation of an economic-functional “production regime,” “varieties of capitalism,” or “asset” theory of welfare state development, and generally of politics under capitalism.

## Zusammenfassung

Berufliche Qualifikationen und berufliche Bildung sind ein zentrales Thema gegenwärtiger politisch-ökonomischer Forschung. Der Aufsatz untersucht einen Schlüsselbegriff der Diskussion – die Unterscheidung zwischen allgemeinen und spezialisierten Fähigkeiten – mit Hinblick auf seine diversen Ursprünge in der amerikanischen Arbeitsökonomie der Nachkriegsjahre, der vergleichenden Forschung über industrielle Arbeitsbeziehungen und der Humankapitaltheorie. Um zu zeigen, wie die Begriffsbildung sich mit der Zeit und zwischen den verschiedenen Disziplinen entwickelt hat, wird sie mit anderen dualen Klassifikationen von beruflichen Fertigkeiten – hoch und niedrig, breit und eng, theoretisch und erfahrungsbasiert, explizit und implizit, extrafunktional und funktional, zertifizierbar und nicht zertifizierbar – in Beziehung gesetzt. Ziel ist herauszuarbeiten, wie die Unterscheidung zwischen allgemeinen und speziellen Qualifikationen zur Grundlage diverser ökonomistisch-funktionalistischer Theorien der wohlfahrtsstaatlichen Entwicklung und allgemein der Politik im Kapitalismus werden konnte.

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## Skills and Politics: General and Specific

### Introduction

Skills and skill formation have become central topics in contemporary political economy. In this essay I will trace key concepts used in the current debate – above all, the distinction between general and specific skills – back to their origins in American post-war labor economics, comparative industrial relations, and human capital theory. To show how they have evolved over time and between disciplines, I will relate them to other dual classifications of work skills, like theoretical versus experiential, high versus low, broad versus narrow, explicit versus tacit, extrafunctional versus functional, and certifiable versus noncertifiable. My aim is to reconstruct how they came to be used – although they should not have – as the foundation of a functionalist-cum-rational choice, or in other words: an economistic, “production regime” (Soskice 1999), “varieties of capitalism” (Hall/Soskice 2001b), or “asset” (Iversen/Soskice 2001) theory of welfare state development and generally of politics under capitalism.<sup>1</sup>

In particular, the point I want to make is that “liberal” countries with no or only a residual welfare state are *not* in the condition in which they are because workers in these countries typically have “general” skills, allegedly needed and employed by the distinctive mode of production in their respective national economies, and because workers with such skills can, for sound economic reasons, be happy to do without social protection. In other words, I will argue that so-called “asset theories” of politics (Iversen/Soskice 2001; Cusack et al. 2006, 2007) in so-called “market economies” (Hall/Soskice 2001a) have no basis, neither in the political history of modern capitalism (Korpi 2006) nor in the reality of national patterns of skills and skill formation and their interaction with, among other things, labor markets, work organization, trade union structure, employer organization, and the strategic choices of firms. My contention will be that such theories suffer from an underlying, characteristic misunderstanding of what skills are and how they are acquired, a misunderstanding that is rooted in an uncritical reception of human capital theory, as well as in a rationalist misconception of the relationship between politics and the economy, or between social structures and economic pressures for efficiency.

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1 I use the three expressions synonymously as the theories they refer to conceive of the relationship between skills and political-economic institutions in the same way.

## Skilled versus unskilled

Skills and skill formation were from the beginning at the center of Anglo-American labor economics. Originally labor economics was a branch of institutional economics and shaded into the study of industrial relations, with its focus on collective bargaining and its connection to work organization and the flexibility of labor markets and production arrangements (Kerr 1954; Kerr et al. 1960; Dunlop 1993 [1958]). The basic distinction here, as suggested in particular by the structure of Anglo-American labor markets, was between skilled and unskilled labor. In the ideal-typical Anglo-American pattern, skilled workers were organized in so-called “craft unions,” whereas unskilled workers were at first unorganized and later, in a “second wave of unionization,” were represented by separate “general” or “industrial” unions.<sup>2</sup> Craft unions had emerged in the early industrializing economies of Britain and the United States more or less as modern successors to the medieval guilds; in many ways they functioned like associations of small business. For example, initially they were averse to collective bargaining, preferring instead unilaterally to post what they called “prices” for the different “jobs” their “trade” was skilled to perform, in what was perceived by their political and legal opponents as a “conspiracy against free trade.”

With increasing size of factories and the consolidation of industrial firms, the members of craft unions gradually turned from subcontractors into employees, or wage workers. But in many ways their unions continued to behave like business cartels, and where they became powerful they were able to dictate to employers on a wide range of subjects. Controlling and in a sense owning the skill in which their members specialized, craft unions aspired to establish something like property rights over the work arrangements in which it was exercised. Not only could workers acquire craft skills exclusively through an apprenticeship served with the union, which enabled the union to limit access to its trade and thereby keep the supply of skilled labor low and skilled wages high. Craft unions also ran job exchanges and with time learned to make employers abide by a division of labor at the workplace – a standardized “job demarcation” – that was tailored to fit the union’s and its members’ skill. To the extent that they succeeded in imposing the same organization of work on all employers in their domain, this ensured that union members could exercise their skills in a large number of workplaces, making such skills transportable across employers and giving workers the option to quit where working conditions were not to their liking.

The crowning achievement of craft unionism was the “closed shop,” under which employers who needed a skill controlled by a craft union had to agree to employ only union members (workers who had served their apprenticeship with the union and possessed a “union card”). Employers were also supposed not to “dilute the skill” by employing

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2 For a similar account see Culpepper and Thelen (2008). For a short summary of the history of trade unionism in different countries and the various forms trade unions took, see Streeck (2005, 266–269). A classical labor history text is Kendall (1975).

someone without a union card or by changing the organization of work, typically by introducing new technology, so that the job could be performed by an “unskilled” worker. Being as strong as they were at the workplace, especially in Britain but also in parts of the United States, craft unions tended to be politically conservative (Marks 1989); all they wanted from government was the right to look after themselves through free collective bargaining. Thus, British craft unions for a long time sided with the Liberals and would not see the need for a political party representing labor in particular. Since their members typically prospered, craft unions had little interest in public provision of welfare; here as well they preferred to rely on their own strength, running mutual support funds and serving as “benevolent societies” for members who were in difficulties.

When, at the end of the nineteenth century, the growing masses of “unskilled” or “general” workers struggled to get organized as well, craft unions were skeptical if not hostile as the new “second-wave” unions aspired to represent workers across industries and skills, pushed for wage leveling, engaged in political action and clamored for state intervention, and sided with socialist movements and parties. But since craft unions were already well established, general unions hardly ever succeeded in their efforts to integrate skilled workers into broad-based *industrial unions*. Instead they had to face, like the American CIO in relation to the AFL, a powerful defense of wage differentials, or “relativities,” and of “job territories,” as well as an ingrained preference of the established trade union movement for private and particularistic as opposed to public and universal welfare provision. Divisions between the two types of unions remained strong and politically consequential even as the new general unions adapted their *modus operandi* to that of their older brothers, relying on seniority rights and promotion ladders as functional equivalents of skill and apprenticeship, on the union shop as a substitute for the closed shop, and on internal rather than external labor markets.

Thus at the height of the industrial age, Anglo-American labor economics had come to distinguish between two types of skills, craft and general. Craft skills were high but narrow and specific; while they were portable between workplaces, this was essentially as a result of collective action of workers wresting control from employers over work organization and hiring. On the other side there were general skills, if they were skills at all, which were broad in the sense of unspecific and widely usable in any industry, provided it required manual and physical labor. Here, instead of promoting mobility of labor between workplaces by making employers standardize their organization of work, unions demanded employment and seniority rights in internal labor markets, in order to protect their members from continuously having to move their low and unspecific skills between employers at the latter’s discretion. For both craft and general skills, it was thus through an elaborate system of institutions that labor markets were demarcated, boundaries and entry points were defined, access to both qualifications and employment was regulated, and the breadth of skills as well as labor markets was determined (Kerr 1954). We will return to these relationships later.

In the 1960s and 1970s at the latest, the Anglo-American pattern of skills and their distribution and production, with its reflection in divided trade unionism, horizontally and vertically segmented labor markets, and a rigid system of job demarcation and entitlement at the workplace, came increasingly to be seen as a source of competitive disadvantage in a changing world economy (Flanagan et al. 1983). Accelerating technological change caused a proliferation of conflicts over job territories and wage differentials. Whereas skilled workers often refused to operate new machines unless they were paid extraordinary bonuses, especially in Britain, unskilled workers lacked the requisite industrial power and took recourse to militant wage bargaining. The result was a growing desire on the part of management, certainly in the United States, to replace labor with automated machinery and move from the Taylorism of the first half of the twentieth century to fully automated factories. In both Britain and the United States, industrial productivity lagged behind, with product and process innovation suffering from a rigid shop floor. Thus mass production lingered on, although what would have been required for competitiveness in increasingly saturated international markets was product differentiation and flexible small-batch production (Sorge/Streeck 1988). For this, however, general workers were not skilled enough, while skilled workers were too few and their skills were too narrow and specific.<sup>3</sup> The situation was made worse by the fact that craft unions had allowed their traditional training systems to deteriorate, among other things by excluding women and ethnic minorities from apprenticeships, prolonging the latter to periods of up to seven years, emptying the content of training to “time served” as a “craftsman’s helper,” and generally redefining skill from a capacity to do demanding work to an entitlement to be hired whenever a particular specialized activity was to be performed and, once hired, to refuse to perform any other activity.

### **Broad versus narrow**

In the 1970s and 1980s, Anglo-American research in industrial relations and, as it came to be called, human resource management began to take an interest in a comparative perspective, looking in particular at countries like Germany and Japan, which were then the rising industrial powers. I will focus here on Germany because of its collective and multi-employer system of skill formation, which is different from the kind of firm-based skill formation that prevails in Japan, even though the Japanese system is in many ways functionally equivalent to the German one (Streeck/Yamamura 2001; Yamamura/Streeck 2003). As German industry was apparently much better than its Anglo-American competition at absorbing technological change and work reorganization and at industrial restructuring in general, it did not take long for the German skilled worker, the *Facharbeiter*, to attract attention (Dertouzos et al. 1989). Here there was a manual worker with high but also broad skills, trained in widely accessible and publicly super-

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3 On craft unions and their “restrictive practices,” especially in Britain, see Flanders (1970).



vised apprenticeships, and in such ample supply that industrial workforces were sometimes almost entirely composed of skilled workers. Moreover, these were easy to retrain and redeploy in internal labor markets, while at the same time they were highly mobile in the external labor market due to their certified portable skills. Germany, it was noted, not only had many more skilled workers than Anglo-America, but they were also less specialized.

It did not take long for this to be related by observers to a set of institutional characteristics of German industrial relations that had become associated in the 1970s with the notion of liberal (or neo-)corporatism (Schmitter 1974; Lehmbruch 1977): encompassing “industrial” trade unions organizing skilled and unskilled workers alike; strong employer associations and collective bargaining at the industrial level, which lowered the wage spread between, among others, the skilled and unskilled; as well as an absence of claims to job ownership making for low shop-floor conflict, high flexibility of task assignment, and fast absorption of new technology at the point of production. All of this appeared to be linked to a structure of interest representation that effectively separated workplace and industry-level regulation of working conditions, basically by keeping works councils apart from trade unions and differentiating the tasks of the former from those of the latter, thereby insulating the workplace from distributive conflict especially over wages (Streeck 1984).

From here, it was only a small step to the realization that the German system of vocational training was as important an arena of joint regulation at the industry level as was collective bargaining, even though it was less easy to recognize as such and difficult to understand from the outside (Streeck et al. 1987; Streeck/Hilbert 1991). Like wage setting, unions and employer associations jointly administered a complex “web of rules” (Dunlop 1993 [1958]) licensed by the state and under its watchful eye. Together, in tripartite cooperation, they ran and kept current a national system of occupations and occupational training profiles that, through publicly supervised examination and certification of acquired skills, allowed for, in principle, unlimited mobility of workers in nationwide sectoral labor markets. Moreover, unlike the Anglo-American world, employers were obviously prepared to invest large sums of money in the skills of their workforces, and in broad and therefore widely transportable skills to boot, while trade unions not only tolerated general upskilling but pressed incessantly for broader and better training of, ideally, all workers in their domain. As a result, German firms could benefit from an almost unlimited supply of high skills as well as from unmatched flexibility in the deployment of labor on the shop floor. Among other things, this allowed them to use the opportunities of the new microelectronic technology for abandoning mass production in favor of more complex and more customized and diversified high-quality products, rather than for eliminating labor (Piore/Sabel 1984; Sorge/Streeck 1988; Streeck 1991).

It was in this context that German vocational training became an inspiring research site for numerous students of subjects like comparative industrial relations, corporatism

and institutional change. As to industrial relations, differences and similarities between the Anglo-American and the Germanic world posed a long series of intriguing and, as it turned out, theoretically highly fruitful questions: for example, on the differences between German *Handwerk* and English “craft,” or between craft and occupational skills; on the differences and commonalities between *Betriebsräte* and *Vertrauensleute* on the one hand and shop stewards on the other, and the like. In the United States and Britain in particular, researchers in industrial relations, at least those who cared, noticed with astonishment that skills were not necessarily scarce and elitist; that high skills could be abundant, broad in content and widely distributed, and much less rationed and narrowly specific than under a craft regime; that skills could enhance flexibility not just in external but also in internal labor markets; that high wage differentials were not the only way to get workers to undergo training; and that unions could do without “restrictive practices,” job ownership and seniority rights, and still effectively represent their members (Finegold 1993; Crouch et al. 1999).

Concerning the study of corporatism, the German training system came to serve as a key exhibit for those who believed in the benefits of “private interest government” supplementing public government (Streeck/Schmitter 1985), as well as in the beneficial effects of unions being safely institutionalized as representatives of their members, both for the latter and for society as a whole. To some, a strategy of cooperative skill enhancement, as in the “German model,” appeared as a promising way of defending trade union power and political status against the rising tide of neo-liberalism (Streeck 1992; Rogers/Streeck 1994). German vocational training also became a key research site for the emerging historical-institutionalist approach in political economy, which took up the challenge to explain how the obviously very different but also recognizably related German and Anglo-American patterns of skill formation had arisen out of a common pre-industrial past yet followed different national paths of institutional development, shaped by factors like the timing of industrialization, the vagaries of politics and power, and the lasting historical effects of different kinds of government intervention. A still unmatched milestone achievement in this field is, of course, Kathleen Thelen’s seminal book *How Institutions Evolve* (2004).

As to policy, German vocational training soon took on the status of a model for those who believed that, to overcome what was seen as an Anglo-American “low skill equilibrium” (Finegold/Soskice 1988), employers in the United States and Britain had to be made to invest more in skill formation at the workplace than the few hours or days they typically devoted to “breaking in” new recruits. The German example was also held up by the European Union in its effort to promote a common European approach to a globally competitive high-skill economy. For this purpose a special agency, CEDEFOP, was created and initially located in Berlin. It soon turned out, however, that the transplantation across national borders of an institution reaching as deep into the fabric of the political economy as a collective skill formation system was a utopian project, its efficient operation being far too dependent on complementary institutions of, for example, labor market regulation and workplace interest representation, and generally

on a sympathetic political, institutional and cultural context. In fact, in the 1990s at the latest, the United States and Britain finally gave up on industrial upskilling and, with it, on the industrial working class. Instead they adopted a strategy of accelerated transition to a “service economy” that relied on skills of a much different sort: those needed by a thoroughly deregulated financial sector.<sup>4</sup>

### General versus specific

To recapitulate, in the tradition of Anglo-American institutional labor economics, *specific* skills were *craft* skills: high but rare and narrow; mobile but only within a sharply demarcated job territory and conditional on trade union job control; and at permanent risk of becoming technologically obsolete. *General* skills – the skills of “general workers” – were low, abundant, and broad as workers having (only) such skills were usable in a wide range of – “unskilled” – employment. Workers with general skills, while arguably in dire need of social protection by law or collective agreement, had a hard time getting such protection, owing to the dominance in industrial relations of the older craft unions with their established strong preference for free and open labor markets. In Germany, by comparison, high skills, while also specific, were not just more widespread but typically broader and more widely employable than Anglo-American craft skills, which reduced the need on the part of workers for job control and a standardized, and thus rigid, organization of work. General skills, in the sense of low skills, on the other hand, were infrequent as the vocational training system absorbed the vast majority of the traditionally large number of young people in Germany who did not enter tertiary education. As a consequence, German labor markets were less segmented, both horizontally between skills and vertically between the skilled and the unskilled, while work organization on the shop floor was more flexible.

Still, differences aside, in both Anglo-American and German usage the distinction between general and specific skills referred to the nature and variety of tasks a worker had

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4 In the United States in the early 1990s, a broad public consensus existed that, for the country to regain industrial leadership and defend its international competitiveness, it had to embark on a large-scale national strategy of upgrading work skills (for many others see Dertouzos et al. 1989; Hamilton 1990; Thurow 1992; Solmon/Levenson 1994). When the first Clinton administration came into office in January 1993, Secretary of Labor Robert Reich began to make plans for a comprehensive reform of worker training. Not least, training reform was seen as part of a general effort to combat the growing inequality among American citizens, an effort which included the potential introduction of legally based workforce representation (Freeman 1994). All this came to an abrupt end with the catastrophic defeat of the Democrats in the mid-term elections of 1994. In subsequent years, with social reform politically blocked, Clinton and his advisers placed their hope for economic prosperity on financial deregulation, which was a policy the Republicans were happy to support (Stiglitz 2003). Today, after the strategy of substituting credit for training has resulted in the Great Recession of 2008ff., this is considered by some as a historical mistake, and calls for educational and social reform are again heard (Rajan 2010).

the capacity to perform, even though in Anglo-America such capacity included something like an institutionalized job entitlement whereas in Germany it consisted, and continues to consist, simply of an internalized and certified personal ability. It is important to note but seems far from generally understood that *this* way of distinguishing between specific and general skills must not be confounded with one that distinguishes between skills on the basis of whether they can be used in just *one* workplace or in *more than one*, with the purpose of determining an *efficient allocation* of the *costs of training*. I refer to this as to the *neoclassical* or *human capital* approach to skills and skill formation, as opposed to the traditional institutional economics approach. Its most influential representative is, of course, the economist Gary Becker (see in particular Becker 1993).

Becker's discovery, as it were, was that important insights can be gained if skills are treated as capital and skill formation as capital formation. From this perspective Becker explores the consequences of the fact that skills, or "human capital," reside in the worker and not in the firm, and may move in a free labor market with the worker to competing firms. Using theoretical modeling, Becker investigates the effects of potential worker mobility on the incentives for employers to train and for workers to learn; on wage levels and wage structures; and on the stability of employment (Becker 1993, ch. 3). As it turns out, the crucial factor is whether a given work skill, in the sense of a worker's personal ability to perform a particular task, may make the worker more productive, and thereby increase his earnings capacity and contribution to profitability, "in many firms besides those providing it" – "it" being the skill – through on-the-job training (Becker 1993: 33). Among the various implications that this is shown to have, the central one for present purposes is that, where this is the case, a worker's employer has no incentive to pay for the training, and that training for such skills must therefore be paid by the worker or some other agent on his behalf.

The thrust of Becker's argument is that the training of workers should be organized in ways that are what economists call *incentive-compatible*, with those who benefit from it bearing the costs. The pivotal question is whether skills are portable across workplaces or not. If an employer paid for the formation of a kind of human capital that a worker could profitably deploy elsewhere, her competitors could abstain from training and "poach" her skilled workers, by offering them higher wages out of what they have saved on training. Skills that are in this way transportable, and therefore "poachable" and, as a consequence, unlikely to be paid for by "rational" employers, Becker calls "general" skills. For employers, to pay for training pays only if the skills that the training generates cannot be productively used outside their firm, making it impossible for opportunistic workers to sell them elsewhere, and for opportunistic employers to buy them on the cheap. Skills that cannot be carried from one firm to another, Becker calls "specific."<sup>5</sup>

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5 "Completely general training increases the marginal productivity of trainees by exactly the same amount in the firms providing the training as in other firms ... Completely specific training can be defined as training that has no effect on the productivity of trainees that would be useful in other firms" (Becker 1993: 40).

It may be useful in passing to note what human capital theory does *not* claim. For example, Becker never rules out the possibility – which figures centrally in the theory and practice of workplace-based training and in particular of apprenticeship systems – that certain, highly valuable skills may best be acquired at the workplace even though they are general in nature, in the sense of usable outside the firm that has paid for them. It is true that Becker’s exposition often seems to be beholden to the American model of a strict separation between general education in schools and firm-specific on-the-job training in firms. Nevertheless, it does allow for general training on the job (see especially 1993: 30ff.), provided it is paid for by the worker, mostly in the form of lower wages. Moreover, there is no necessary identification of workplace-based with firm-specific training, nor does anything in the theory preclude a role for the public in cases of market failure, for example when children have to learn the famous “3 Rs” – *Reading, wRiting, aRithmetic* – or when families are too poor or unwilling to invest in the education of their offspring. Nor does the theory rule out cooperation and coordination in general training between firms and schools. In fact, there is even a brief reference to groups of firms running joint apprenticeship systems (Becker 1993: 49).<sup>6</sup>

Most importantly in the present context, Becker’s distinction between general and specific skills has, as noted above, nothing to do with the intrinsic nature of such skills: whether they are academic or not, theoretical or experiential, explicit or tacit, or functional or extrafunctional.<sup>7</sup> As indicated, nowhere is it ruled out that tacit or experiential knowledge acquired in a given workplace may be valuable in other workplaces as well, and the same holds for extrafunctional skills such as “good work habits” and the ability to show up on time, cooperate with others, work under stress and the like – which are important work skills that are best learned at work. That is to say, Becker’s perspective is not a technical but a strictly economic and indeed “firm-centered”<sup>8</sup> one: skills are general if they are portable between employers and specific to the extent that demand for them is monopsonistic.

The importance of this definition may be illustrated by the example of the Japanese production system. Becker’s theory of human capital need not claim that the – famously high – skills of Japanese automobile workers, although entirely the result of in-firm training and workplace experience, are not portable from one internal labor market to

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6 Still, the fact that cooperation between firms may be publicly mandated in collective training systems may be hard to account for in neoclassical economics with its voluntaristic, free-market, rational-choice bias. The same applies to the fact that the content of workplace training in collective training systems is often regulated, with the purpose of limiting the discretion of individual employers as to the kind of skills they provide and the extent of productive work apprentices are allowed to perform, in order to ensure that the resulting skills are as broad and widely portable as possible.

7 “Tacit knowledge” is the central concept in Michael Polanyi’s magisterial book *Personal Knowledge* (1958). The notion of “extrafunctional qualifications” was introduced by Ralf Dahrendorf (1956).

8 To use a central concept in economistic theories of “varieties of capitalism” (Hall/Soskice 2001a).

another, say from Honda to Toyota. Put another way, there is no reason why human capital theory would have to assume that the enormous investment of Japanese auto manufacturers in training is spent exclusively on skills, in particular extrafunctional and tacit skills, that would not in principle also be productive in other automobile factories. Still, for the theory they remain “specific” as long as Japanese auto manufacturers continue to honor a tacit mutual agreement never to hire workers from a competitor except at the bottom entry point of their internal labor markets. Together with a steep age–earnings profile, this ensures that workers are caught in the internal labor market of their current employer. Whatever skills the latter imparts on them through training and a learning-intensive organization of work are, in this way, made specific in an economic sense, that is, they are de facto usable in one and only one workplace, not because of their substantive content, but as a result of the particular institutional structure that governs, or in any case used to govern, Japanese industrial labor markets.<sup>9</sup>

### **School versus workplace**

Becker’s theory of human capital formation serves well as a background for understanding the nature of a German-type training system, its modus operandi as well as its more recent problems, and for a stylized account of the differences between Anglo-American and German-style labor markets, in particular with respect to the definition and significance of “general” and “specific” skills.

In both Anglo-America and Germany, workplaces were traditionally widely used as places of training, in particular but by no means exclusively for tacit, experiential, and extrafunctional skills. Moreover, both systems were governed by regulatory institutions that saw to it that workplace-based training did not become entirely firm-specific and that skills acquired at one workplace were at least in part also general so that they could be used in other workplaces as well. Regulatory institutions, however, differed fundamentally, and this made for equally fundamental differences in the structure of the skills generated. In Anglo-American settings, labor mobility was safeguarded through craft unions imposing a standardized organization of work on the firms in their domain. Since it was the unions who unilaterally determined, based on their industrial power, the content of their members’ skills and who ran the respective apprenticeship systems, they not only had an incentive but also the means to define skill profiles narrowly and defend them against change.

This was different in German-type systems where skill formation was governed on a tripartite basis. Here, mobility was provided for by public examination and certification of acquired skills. Especially from the 1960s onward, there was also a continuous

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9 Which are, using Kerr’s term, like most labor markets “institutional” or “balkanized” (Kerr 1954).



broadening of occupational skill profiles, which was achieved by merging neighboring occupations and sharply reducing their overall number. Furthermore, all three parties involved kept pressing for training standards to be upgraded, including a strengthening of the “theoretical” content of training as provided above all by vocational schools (“dual system”). While employers were seeking high skills, a flexible organization of work made possible by polyvalent workers, as well as worker and union support for industrial change, unions strived to maximize their members’ employment and earning opportunities by enhancing the portability of their personal work skills in the absence of formal job entitlements. The government, for its part, was interested above all in flexible labor markets that would ensure high employment and economic growth, and it considered workplace-based training an essential complement of public education and active labor market policy.

As indicated, in the 1970s at the latest it became evident that Anglo-American work skills had become technologically outdated, excessively narrow, and scarce; they also compared unfavorably with German-style occupational skills, which were not only abundant but also had been continuously upgraded. Anglo-American deficiencies were widely considered a historical legacy of both craft unions and their restrictive practices, as well as of the response of employers to them. Faced with union indifference or resistance to the expansion and modernization of industrial training, employers had early on embarked on a strategy of de-skilling, which, given the circumstances, could not but be identical with de-unionization, especially with the breaking of craft union control over work organization (Braverman 1974). Where unions were weakened or eliminated, apprenticeship disappeared and on-the-job training was reduced to firm-specific training, while the acquisition of more generally usable, portable skills was relocated in a vast and rapidly growing industry of vocational schools and community colleges. One of their attractions was that the skills they presumably imparted on their students appeared more “academic” and, as a consequence, were more socially prestigious. Moreover, training for such skills was mostly paid for by the trainees, many of whom took out loans on their house, relieving employers of training costs.

By the end of the twentieth century, however, it had become apparent that what people learned and paid for in the classrooms of the new training industry was often no less narrow and job- or firm-specific than traditional skills. Coordination between training in schools and on the job was scant, except where school curricula were “customized” to the specific needs of a major local employer, which they often were. At the same time, in manufacturing firms, as in the growing service sector, a de-skilled work organization, after decades of Bravermanian separation of execution from conception, drew on *general* skills mostly in the sense of *no particular skills* and relied below the managerial level on what is called in German *Jedermannsqualifikationen* (everyman’s skills, Sengenberger 1978).

Again, what made the difference was the institutional regime and, in particular, the role of employers in it. (As noted, no such regime is envisioned in the neoclassical, free-mar-

ket, voluntaristic framework of Beckerian human capital theory.) Whereas in Anglo-America individual firms had traditionally faced narrowly specialized craft unions, with little or no government involvement, in Germany their interlocutors were broad-based industrial unions, various public agencies and, importantly, strong employer associations (Streeck et al. 1987). Their role was essentially that of the organizer of a *mutual assurance game*. While agreeing to and indeed promoting an expansion of industrial training, more academically demanding curricula, more frequent release of trainees for schooling and the like, all of which increased the costs of training, they guaranteed cooperating firms that they would make a majority of their competitors cooperate as well. Thus, a firm investing more in broader training could be sure that it would not be left alone to be later exploited by its competition. In the end, all firms would be able to share in the benefits of cooperation, consisting of a large pool of skilled workers accessible to and sufficient for the entire industry, with a rich supply of workplace-created but nevertheless portable skills in particular, with labor markets remaining open and flexible.

German institutions and the way they were used to regulate skill formation at the workplace, including the relationship between theoretical and experiential training and their allocation between schools and workplaces, did not just solve problems but also increasingly created them. With time, continued upskilling, as jointly promoted by employer associations, trade unions, and the government, excluded growing segments of successive age cohorts from the apprenticeship system, also because elementary and secondary schools increasingly failed to prepare students for the ever more demanding training curricula. At the same time, economic and social change led to rising numbers of young people attending universities rather than seeking apprenticeships, in search perhaps of economic opportunities, social status, or leisure.<sup>10</sup> Moreover, firms have become less easy to control for their associations, eroding the latter's capacity to reassure their members that they will be able to make a majority of firms participate in industrial training. In part this seems to be because of increased competitive pressures, higher turnover among small and medium-sized firms, and growing specialization, which makes it more difficult and costly for firms to train apprentices according to ever more demanding training plans. As the associations' ability to provide mutual assurance declines, more and more firms are exiting from the cooperative training system, confronting policymakers with questions like how to prevent the institutional separation of theoretical instruction at school and practical experience at the workplace; to preserve the advantages for skill formation of using the workplace as a training site; to keep high-skill labor markets flexible; and to protect workers from being captured in internal labor markets.

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10 According to a recent time-budget study, German university students at the bachelor or master level work only 26 hours per week on average, which is much less than apprentices. The study, as reported in the *Frankfurter Allgemeine Zeitung* on 11 October 2010, confirms the suspicion that university attendance amounts in many cases to a period of carefree extended adolescence, subsidized by very low or non-existent tuition fees and often cash stipends provided by the government. Young people in vocational training have none of this.



## General skills, liberal markets?

Recently revisionist theories of democratic politics and the welfare state have drawn on a political economy of skills and skill formation to picture contemporary capitalism as a regime of institutionalized “coordination” between capital and labor for joint economic benefit. In an efficiency-theoretical framework, market-containing institutions like social insurance or employment protection are explained not as outcomes of class conflict and class politics, but as consensually created devices to facilitate cooperation and thereby increase productivity and competitiveness. Rather than imposed by political power or public authority, capitalist political-economic institutions are conceived as rationally chosen and voluntarily contracted by agents with a shared interest in a maximally efficient economy. Where institutions are set up or maintained by the state, the latter figures not as a seat of coercive power, but as a joint management board of associated efficiency-seeking producers. In particular, two presumably equally viable and competitive configurations of capitalist institutions – two “varieties of capitalism” (Hall/Soskice 2001a), or capitalist “welfare production regimes” (Estévez-Abe et al. 2001) – are presented as alternative versions of a consensual “market economy”: one referred to as “liberal” (the so-called “LME”), the other as “coordinated” (the so-called “CME”).

Rational choice accounts of institutions and social structures require a “microfoundation” in the form of a theory of the, supposedly, rational interests driving the individual behavior that makes for the imputed efficiency of the social order. In the founding documents of the efficiency-theoretical branch of the “varieties of capitalism” literature, also known as “VoC,”<sup>11</sup> this role is filled by transaction cost economics, in the version of Oliver Williamson.<sup>12</sup> Transaction cost theory, as in *The Economic Institutions of Capitalism* (Williamson 1985), takes the exchange transaction between the owners of complementary resources, or “assets,” as its basic unit of analysis. Transactions are broadly classified as of two kinds, depending on the nature of the assets involved. In particular, assets may be “general,” or unspecific, if they are valuable to a large number of potential users. Or they may be “specialized,” to the extent that they are of value to only one user or a small number of them. Transactions involving general assets are believed not to pose particular problems, as they can be handled by simple spot-market, “clean-in, clean-out” contracting. Exchange of specialized, or nonredeployable, assets, however, may create bilateral dependencies and thereby expose agents to each other’s “opportunism.” It is thus unlikely to come about, and investment in transaction-specific assets, highly profitable as it may be, is unlikely to be made, unless suitable institutions are set up to protect the parties against the various kinds of “contractual hazards.” So relational contracting takes the place of spot-market contracts, and institutions of economic “governance” are devised by the traders themselves, or by government on their

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11 For a critical review of the “VoC” approach, see Streeck (2011).

12 This is called by VoC theorists “the new microeconomics” or “the new economics of organization” (Hall/Soskice 2001a: 6, 14). See also Emmenegger (2009: 411).

behalf,<sup>13</sup> to insure asset-specific transactions against the risk of breakdown due to hold-up or the fear of it.

What are the “assets” that, according to “asset theory” (Iversen/Soskice 2001), make actors under capitalism resort to markets pure and simple if the assets are unspecific and rely on complex institutions if they are specialized? The most important transaction in capitalism being that between capital and labor, it is here that VoC, in its effort to dislodge power resource theories of political economy and the welfare state, brings in skills while short-circuiting Beckerian human capital theory and Williamsonian transaction cost economics.<sup>14</sup> The core claim is that “LMEs” are what they are – that is, reliant mostly on markets for economic “coordination” and “requiring” only a small welfare state if at all – because in them the relationship between capital and labor is predominantly about the deployment of general, in the sense of transaction-unspecific, skills. As workers in “LMEs” can always sell their skills to other employers who could also use them, they have no need for insurance against risks of dismissal or unemployment. Similarly, employers who primarily use general skills do not have to worry about reassuring workers that they can invest in specific skills without having to fear being blackmailed afterwards. In “CMEs,” on the other hand, the skills that workers command and employers require are supposed to be “specific,” or “co-specific” in relation to the, equally specialized, means and processes of production operated by employers.<sup>15</sup> “Because the transferability of skills is inversely related to their specificity” (Iversen/Soskice 2001: 875), this exposes both workers and employers to the risk of exchange between them breaking down or not coming to pass in the first place.<sup>16</sup> This is to explain why, allegedly,

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13 This would be “public ordering,” as distinguished from “private ordering.” The latter is considered to take place “in the shadow” of the former. Generally, however, transaction cost theory gives precedence to private ordering, which it regards as more flexible and adaptable to specific situations and problems. Public ordering is ideally confined to authoritative adjudication by the courts.

14 The following is a synthetic paraphrase of several sources, in particular Iversen and Soskice (2001), Hall/Soskice (2001a), Estévez-Abe et al. (2001), and Cusack et al. (2006, 2007).

15 While some of the contributors to welfare production regime theory sometimes distinguish between firm-specific and industry-specific, or occupational, skills (see in particular Estévez-Abe et al. 2001), both are counted as specific where it matters. Regardless of the fact that occupational skills are portable between employers, their market is apparently considered small enough for them to be like firm-specific skills for both practical and theoretical purposes. I will return to the implications of this.

16 “We start from the ... idea that investment in skills that are specific to a particular firm, industry, or occupation exposes their owners to risks for which they will seek nonmarket protection. Skills that are portable, by contrast, do not require extensive nonmarket protection, just as the exchange of homogeneous goods does not require elaborate nonmarket governance structures” (Iversen/Soskice 2001: 875). This seems to imply a causal relationship under which the nature of relevant assets determines the nature of the capitalist production regime, in particular of the institutions that govern it. Elsewhere, however, the direction of causation seems to be the opposite: “The fluid market settings of liberal market economies encourage investment in switchable assets, while the dense institutional networks of coordinated market economies enhance the attractiveness of investment in specific or co-specific assets” (Hall/Soskice 2001a: 49). I will briefly return to the question of historical or causal primacy further down.

in such countries not only workers but also employers, and the latter supposedly with as much fervor as the former, lobby the government for protective, market-regulating institutions, so as to make it “rational” for workers to develop “specific” skills by insuring them against associated risks, such as employer opportunism or cyclical or structural changes in demand.

Looking at the argument more closely, one finds that it has two parts (see in particular Iversen/Soskice 2001). The first is a theory of individual preference formation on social policy that cuts across countries, claiming that individuals commanding “general” skills, wherever they may live, are less likely to support redistributive social policies than individuals with “specific” skills.<sup>17</sup> The second is that, at the macro level, whole countries are distinguished on the basis of whether their citizens’ skills, *as generated by their educational systems*, are predominantly specific or general in nature. The aim is to show that where educational systems produce “specific” skills, the interests and preferences these give rise to translate into effective political demand for extensive welfare state protection. Whether or not a country has predominantly specific skills is believed to be indicated by whether it has a broad-based vocational training system (Iversen/Soskice 2001: 888).<sup>18</sup> The present section will consider the concept of general skills, as used in asset theory; the preferences that such skills are supposed to generate; and their relationship to the politics of social protection. The empirical focus will be on the so-called “liberal market economies,” or “LMEs,” which is the alias in “asset theory” for the family of Anglo-American countries. The next section, then, will look at differences between countries, or “varieties of capitalism,” in order to explore whether they can, as claimed by the theory, be accounted for by differences in the skill composition of their workforces. Here the emphasis will be on the German-type “coordinated” economies, or “CMEs.”

Whereas Iversen and Soskice (2001) measure political preferences by responses to attitude surveys, the critical issue for present purposes is how they define and distinguish between general and specific skills. As their operational definitions and the data they use have been discussed elsewhere in detail (Kitschelt/Rehm 2006; Tählin 2008; Emmenegger 2009), it suffices here to draw attention to a sequence of foundational conceptual decisions. First, unlike human capital theory, Iversen and Soskice base their classification of skills as general or specific, *and thus as portable or not portable*, not simply on the structure of *demand* in the *labor market*, in particular the degree to which demand for a given skill is monopsonistic. Instead Iversen and Soskice assume that portability of skills depends on their *content*. Whereas for Becker’s economic analysis, which, as

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17 This is relevant on the assumption that present social policy is, in fact, explained by present political preferences as engendered by present skill patterns – which in turn implies that social institutions are highly sensitive, or responsive, to change in political preferences. None of this is particularly plausible as it neglects the impact of political power and fails to take into account the historical stickiness of institutions, not to mention the possibility of extant preferences being shaped by extant institutions rather than the other way around. I will return to this below.

18 A somewhat more sophisticated indicator is offered by Estévez-Abe et al. (2001). See below, however.

noted above, is concerned with the efficient allocation of training costs, rather than with the origin of the welfare state, it is enough for skills to be general-in-the-sense-of-portable, so that they can be productively used in more than one workplace – regardless of whether they are low or high, broad or narrow, theoretical or experiential, explicit or tacit, or whatever – for Iversen and Soskice the portability of skills resides not in their market situation but in their intrinsic nature as “assets,” that is, their being *substantively broad* in the sense of unspecialized.

Second, Iversen and Soskice define “general” skills, in addition to being economically portable and substantively broad, as requiring *high*, in the sense of *academic, education*. In line with the characteristic conceptual organization of what is interchangeably called welfare production regime, VoC, or asset theory into parallel sets of dichotomies, “specific” skills are correspondingly defined as nonportable, narrow-in-the-sense-of-specialized, and low in the sense of requiring little academic training.<sup>19</sup> The upshot is three allegedly congruent bipolar distinctions folded into one bipolar mega-distinction between two types of preference-producing work skills: *specific* skills of a *nonacademic occupational* kind that are nonportable, specialized and low, and *general* skills that are portable, broad, and high, as most typically embodied in *academic professional* skills.

In passing, one may note that asset theory’s identification of specific with low skills and general with high skills is exactly the opposite of the classical distinction in the Anglo-American labor market regime between unskilled general workers and specialized craft workers, as recalled above. It also differs, in the same way, from the traditional “German” distinction between the specialized and high occupational skills of *Facharbeiter*, and the general and low skills of workers without a certified *Berufsausbildung*. The comparison draws attention to the fact that, by identifying *general-in-the-sense-of-portable* skills with *broad* and *high* academic skills, and *specific-in-the-sense-of-non-portable* skills with *narrow* and *low* occupational skills, “asset theory” loses sight of workers lacking both specific skills and educational credentials – those workers who were referred to as “general workers” in the Anglo-American past. This is, incidentally, different in a competing *class-theoretical* schema of work skills which, unlike “asset theory,” emphasizes the dependence of the employer on the worker rather than the other way around (Goldthorpe 2000). Here, *general* in the sense of *unspecific* skills are skills that are easily

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19 See also Kitschelt and Rehm (2006: 81). Iversen and Soskice use an index of skill specificity that is a combined measure of occupational specialization and the level of required educational attainment, the two being assumed to vary in the same direction. The former component is calculated on information from the International Standard Classification of Occupations (ISCO). Occupations are scored as specialized to the extent that they belong to a category of occupations that comprises a higher share of the total number of occupations than one would expect given its share in the national workforce. Tählin (2008) notes that, measured this way, skill specificity is more or less the inverse of the number of people employed in a given occupation. He also explores the way the two elements of the index interact empirically in predicting political attitudes. While his results must be discomfiting for the theory, I leave them aside here for the sake of brevity.

replaceable by the employer, which is typical of *low* skills, while *specific* skills are difficult to replace, which is characteristic of *high* skills, Workers owning specific skills are therefore considered to be in a strong position in the labor market comparable to traditional craft workers. The different definitions of general and specific skills in five versions of a political economy of work skills are summarized in Table 1.

Table 1 General versus specific skills: Alternative meanings

	General	Specific
Anglo-American labor market regime	Unskilled	Craft
German vocational training regime	Low and uncertified <i>Ungelernt</i>	High and occupational <i>Facharbeiter</i>
Human capital theory	Portable	Not portable
Asset theory	High and broad: professional	Low and narrow: occupational
Class theory	Low and easy to replace	High and difficult to replace

To move on with our discussion of “asset theory” and the relationship it stipulates between “general” skills and liberal capitalism, it seems useful to unpack the triple dichotomy of portable = broad = high versus nonportable = specialized = low. Allowing for economic portability, substantive content, and educational level to vary independently, one arrives at a complex, multidimensional tableau of skill types (Table 2). Initial inspection reveals that asset theory’s “general” skills that are substantively broad, economically portable and high-in-the-sense-of-academic – as those of the mathematicians working for the U.S. financial and information technology sectors, which are the only example offered by Estévez-Abe et al. (2001: 149) – and the “specific,” nonportable, and low-occupational skills of, presumably, workers in Anglo-American automobile assembly are *only two of eight possible combinations*.<sup>20</sup> One notes, for example, that there are broad skills that have severe small-numbers problems with respect to their portability, as those of astrophysicists in the world of high academic skills and of Japanese automobile workers among non-academic skills. Conversely, there are narrow skills that are widely portable, like in brain surgery or, at the nonacademic level, in sports such as European football.<sup>21</sup> Moreover, specific skills that are neither broad nor portable in the market or the human-capital sense need not be low and occupational; they can also be high and academic, like specialized expertise in early Byzantine military history. Furthermore, and importantly, it is not just academically trained professionals who have skills that are both substantively broad and economically portable; the same holds also for the unskilled *Jedermann* workers whom “asset theory,” as pointed out, has conceptually eliminated – one must assume to enable itself to support the revisionist welfare state theory it was conceived to support.

20 See also Busemeyer (2009a: 397), who observes that “the variety of skill regimes is more complex than the dichotomous distinction between LMEs and CMEs implies.”

21 Here, portability is ensured by standardization of job descriptions across employers, for example, for central defenders, due to a uniform “production technology” taking the place of trade union job control.

Table 2 General versus specific: Substantive versus economic

		Economic definition	
		General = portable	Specific = not portable
Substantive definition	General = broad	Mathematics <i>Office cleaning</i>	Astrophysics <i>Car assembly (Japan)</i>
	Specific = narrow	Brain surgery <i>Central defense</i>	Byzantine history <i>Car assembly (U.S.)</i>

High (academic, professional)

Low (non-academic, occupational)

Having broken up the radically simplified dualistic property space of asset theory's account of the relationship between skills and welfare states, one notes several more critical points:

1. Inspection of Table 2 reveals that economic portability of skills is far from being primarily or exclusively a function of their substantive breadth. A factor that would seem to be much more influential is that of market conditions. One may note that the sectors employing the highly trained mathematical generalists of Estévez-Abe et al. (2001) were ones that happened to be rapidly expanding at the time when the theory was being developed. Still, while such sectors are actually using the most abstract and, in this sense, most general kind of knowledge (if only in parts of their operations), they represent no more than a small share even of the U.S. economy. In other sectors where labor demand is small and static, like in astrophysics, the fact that astrophysicists have substantively very broad skills does not help them find employment. At the same time, much more narrowly specialized skills, such as those of brain surgeons, may be in high demand by a multiplicity of employers, making these skills eminently portable.
2. Portability of skills is also determined by labor market regimes, which may entirely neutralize the portability effect of substantive breadth. A case in point here is, again, Japanese auto workers, whose skills are famously much broader than those of their American counterparts. Nevertheless they are effectively nonportable due to effective collusion among employers against worker mobility.
3. The relationship between skills and social policy preferences is complex far beyond "asset theory's" expectation of "general" skills producing convergent employer and worker preferences for unprotected free market capitalism. It is probably true that none of the various kinds of high-in-the-sense-of-academic skills (Table 2) are likely to give rise to political demands for a redistributive welfare state. But this does not mean that owners of academic skills are not interested in social protection; like nineteenth-century craft unions, they only object to redistribution. Given that the level of educational achievement may be more a measure of class than of skill,<sup>22</sup> as

22 Similar Kitschelt in Phelan et al. (2006: 415), who finds that "asset specificity washes out as a predictor of citizens' preferences on health care and pension plans, once we hold constant for blue-collar status."



Tåhlin suggests (2008), the latter should not be surprising. Concerning the former, there is no indication that the middle classes like to lose employment or income as a result of cyclical fluctuations in labor demand or of structural and technological change. Nor are they necessarily willing to be unlimitedly mobile in national labor markets, not to mention international ones. In fact, while individuals with high formal education may not favor redistributive state intervention, they usually do insist on being insured against income loss by a government policy of economic growth or a central bank policy of easy money, both of which may be considered functional equivalents, and sometimes quite costly ones, of social policy proper.<sup>23</sup>

4. Exploring further how the nature of skills affects political demand, one may ask in the language of welfare production theory how there can be investment in very high academic skills – like brain surgery and Byzantine history – that are obviously much more specialized than the theory’s demonstration case, mathematics, in the absence of a welfare state protecting investors against the hazards of asset-specificity. To understand why brain surgeons and Byzantinists, just as mathematicians and astrophysicists, are not typically staunch supporters of redistributive social policies, it helps to consider the possibility that what asset theory calls general skills are actually the specialized skills of the modern successors of the elite nineteenth-century craft workers.<sup>24</sup> In fact, most of today’s academic professions share with yesterday’s craft unions not just a deep dislike of redistributive state intervention but also a staunchly defended capacity to exercise a wide variety of forms of job control. Far from confidently abandoning themselves to the vagaries of the market, doctors, lawyers, professors, and the like – all owners of high and therefore “general” skills, in the reduced property space of “asset theory” – effectively control market entry, training, working conditions, and even fee schedules (Abbott 1988). While employment and indeed status protection for today’s educated middle classes – just as for the middle classes of the nineteenth century, the skilled craftsmen – are achieved outside of the welfare state in the labor market, they are no less effective both in encouraging investment in economically vulnerable specialized skills and in protecting the market position and income claims of owners of prestigious human capital, regardless of the number of their potential employers.<sup>25</sup>

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23 As has recently been learned, the same may be said of publicly subsidized mortgages and “liberal” regulations of consumer credit – showing that a protective state, far from being dispensable even in a “liberal market” world of “general” skills, may take many different forms.

24 And what were then called general skills, with their owners being permanently at risk of becoming and remaining unemployed, may be what asset theory refers to as specific skills in terms of their market chances.

25 It appears strange that those in “asset theory” who connect academic skills to anti-welfare state political preferences could overlook a market-regulating institution such as academic tenure by which they deal with their own small-numbers problems. By controlling tenure, academics limit access to their respective profession and secure guaranteed lifetime employment for themselves and the few others that manage to pass a long series of exacting examinations at the hands of their potential peers.

5. Turning now to low in the sense of non-academic skills and the political interests they presumably produce, the important point is that “asset theory” has eliminated from the definition of general skills the skills of those who used to be called “general workers” in the Anglo-American tradition, or “unskilled” in distinction from the, highly specialized, “skilled” or “craft” workers.<sup>26</sup> Note that it is only as a result of this that “asset theory” can empirically find that owners of “general” skills object to government economic policy while supporting government spending on opera houses and the environment (Iversen/Soskice 2001: 887). The elimination of the *unskilled* from the ranks of the *generally skilled* must seem all the more astonishing as janitors and food preparers are at least as widely employable across economic sectors as academically trained mathematicians, especially in Anglo-American economies.<sup>27</sup> If general workers as defined would include low-skilled service workers, such as office cleaners, as would have to be the case if the defining criterion was in fact portability of skills, it would be hard to believe that workers with general skills should rationally prefer subsidies to high culture over unemployment benefit, social assistance, and active labor market policy.

Summing up, then, if a country like the United States has no social policy, this can be explained by the rational preferences of a workforce with, allegedly, predominantly “general” skills only by a theory that has conceptually blinded itself against the obvious fact that most unspecialized skills are far from high skills. Asset theory ignoring the vast number of workers in Anglo-American countries whose skills are general only in the sense of being *Jedermannsqualifikationen*, other factors must be responsible for the lack of social protection in Anglo-American labor markets than a collective choice of optimally efficient transaction rules.<sup>28</sup> As a matter of fact, nowhere does historical-institutionalist reasoning trump theories of rational choice more clearly than here. Today’s liberal labor markets bear the traces of the defeat of the “general workers” of the nineteenth century at the hands of both their skilled fellow workers and their employers. At present, as in the past, the highly skilled are far from averse to employment protection: they only see no need to share it as long as they have the power to get it exclusively and on their own. That the broad mass of unskilled and low-skilled workers in Anglo-American countries have no social protection is not because it is not rational for them to want it but because their historical quest for class solidarity has failed. The weakness of the Anglo-American welfare state is not due to the predominance of “general” skills among today’s Anglo-American workforces and the liberal preferences to which such

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26 As Emmenegger (2009: 412) has it: “The distinction between specific and general skills clouds the difference between skilled and unskilled workers.” He also finds that asset theory “cannot be extended to employees with hardly any skills” (2009: 425).

27 Hamburger cooks can be found in the food and restaurant industries as well as in all firms and institutions that operate cafeterias, including universities.

28 Using Goldthorpe’s classification, Emmenegger (2009: 422, *passim*) shows that workers with general skills, in the sense of low skills, have strong preferences for social protection. See also Kitschelt and Rehm (2006: 76), who find that skill specificity makes no difference for welfare state preferences.



skills presumably give rise. Instead, it is due to early entrenchment of the particularistic interests of elite workers with strong market power who simply had no use for a universalistic system of state-run social protection.

With time, of course, the institutional protections that skilled workers had won for themselves were dismantled by a successful strategy of de-skilling in the struggle of employers against craft union job control. Union-breaking had the support of the educated middle classes, who at the same time managed to defend their own craft-like control over their labor markets. One result of the defeat of trade unionism was a historical attrition of occupational skills among Anglo-American workers; another, a welcome byproduct of the separation of conception and execution at the point of production, was increasing polarization between a growing middle class of foremen and “general” managers and the indistinct masses of workers left behind with “specific” *in the sense of low* skills. The former, incidentally, are legally barred in the United States from unionization. In the reality of the American social structure, it is not the tiny number of Harvard-trained mathematicians of Wall Street, or of Stanford-trained mathematicians of Silicon Va

lley, that are representative of Iversen and Soskice's academically educated generalists (as distinguished from the low-skilled generalists such as office cleaners), but rather Erik Olin Wright's middling classes of experts, managers and supervisors, with skills that are portable, broad and high-in-the-sense-of-academic (Wright 1985). Their presence in the workplace, where they are much more numerous in the United States and Britain than in countries with a vocational training system, makes for continued de-skilling of first-line production, if only because this is needed to justify the growing inequality in pay between workers and their "generally skilled" superiors.<sup>29</sup>

Much more than present preferences, it is past power struggles in the formative moments at critical junctures in a country's history that account for the institutions governing modern labor markets, including the formation and allocation of work skills.<sup>30</sup> Rather than being instantly created and momentarily disposable, institutions are of long making and breaking, with what they have been in the past having conditioned what they are now and conditioning what they can be in the future. Liberal labor markets, like all institutions, operate *in the shadow of their history*: of craft union self-help through "free collective bargaining;" of "general unions" prevented by the legacy of craft unionism from turning into encompassing industrial unions; of the breaking of craft unions by the de-skilling of work; and not least of the survival of job control among the educated middle classes. Present opportunity structures of both workers and employers, including present economic "assets" and the strategic preferences they encourage, are the result not of economically rational decisions today, but of political struggles and historical events in the time of early industrialization. This is also true for the welfare state and the extent to which it is available for social protection from fluctuating markets and structural change for different categories of workers.

### **Occupational skills: Low and narrow?**

As noted, "asset theory" takes the presence of a strong vocational training system in a country as evidence that the country's predominant skills are specific rather than general. But are the skills typically generated by German-style vocational training really more specific in the sense of narrower, lower, and less portable than Anglo-American skills, making labor market transactions dependent on a kind and extent of social protection that is economically dispensable in so-called "LMEs," due to their on average higher, broader, and more portable skills?

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29 Note in this context the so-called "college wage premium" which has been growing for decades now, putting a meritocratic facade on the American economy at a time of incessantly rising inequality.

30 Similarly, Trampusch (2010) in a comparative analysis covering Denmark, the Netherlands, and Switzerland.

1. As yet, it has never been attempted to measure comparatively the occupational competences of workers in different countries, in analogy perhaps to the PISA surveys conducted by the OECD.<sup>31</sup> There is, however, considerable circumstantial evidence, economic as well as institutional, to suggest that German-type occupational skills have historically been much less subject to de-skilling than Anglo-American skills. In fact, they have been broadened and upgraded in a protracted process of modernization of the nationally administered regime of registered occupations that reaches back at least to the 1960s. There are reasons to believe that it was to a large extent this process that sustained the typically flat hierarchies and decentralized work organization found by comparative industrial sociology in German workplaces (Maurice et al. 1980), as well as the traditionally low wage differentials in Germany between workers and management and the resulting, characteristically compressed wage structure (Streeck 1997b; Marsden 2000: 200–202).

As to the *breadth* of German-style occupational skills in particular, the three parties that are jointly running the German vocational training system – the government, organized employers, and the trade unions – have, as mentioned, continuously reduced the number of certified occupations and, in the process, deliberately broadened the skill base of those that remained (Busemeyer 2009b). More importantly, in a number of industries, training curricula for the first one or two years of the standard three-year apprenticeship in adjacent occupations were consolidated, moving specialization forward to the second or third year. The intention was to create a broad layer of shared basic skills for neighboring occupations,<sup>32</sup> so as to facilitate both inter-occupational mobility of workers and non-hierarchical coordination among workers with related skills. Simultaneously, the academic part of vocational training, most of which takes place in vocational schools, was upgraded to a point where a growing segment of youth were no longer able to meet the ever higher academic demands.

2. Concerning the *level* of skills produced by occupational training, raised occupational requirements were accompanied by increasingly strict supervision of training practice at the workplace. Today, more intensively than ever before, local chambers of industry and *Handwerk*, with union participation, conduct on-site checks for the quality of training and firms' compliance with the more demanding curricula. This, together with the resulting increase in the costs of training, is considered another explanation for why many smaller firms have ceased to offer training places.

In any case, the fact that Anglo-American training looks more “academic,” with more young people attending college or university,<sup>33</sup> need not mean that the qualifica-

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31 For an introduction to the results from a German perspective, see <[www.mpib-berlin.mpg.de/pisa/PISA-2000\\_Overview.pdf](http://www.mpib-berlin.mpg.de/pisa/PISA-2000_Overview.pdf)>.

32 Encompassing, in terms of Iversen and Soskice (2001), as many occupations as possible in a given “major group” of the ISCO.

33 Which is in fact far from unambiguously clear. Note the bizarre scoring decisions by Estévez-Abe

tions it generates exceed those generated by vocational training. Complaints abound about vast differences in quality between universities, polytechnics, and community colleges in Anglo-American countries; about narrowly specialized and deeply fragmented curricula; about “customized” firm-specific training with very little portability; about training modules that are broken down to the smallest teachable unit; about courses that bear no relation to the reality of work in real workplaces; and about the absence of coordination between workplace needs and school curricula, among other things. Without comparative data on the level and distribution of work skills, claims that Anglo-American workforces have more “general” in-the-sense-of-higher skills *on account of a larger number of college students* may not be more than an expression of ethnocentric prejudice.<sup>34</sup>

3. Finally, the *portability* of specific in-the-sense-of-occupational skills was always higher than suggested by “asset theory,”<sup>35</sup> even before the systematic broadening and upgrading of skill profiles. Unlike in the United States and Britain, in German-type systems the completion of an apprenticeship is certified not by a union, but by a tripartite public examination board. This makes certificates highly credible. Moreover, a skilled worker certificate indicates that, in addition to his or her specific skills, a worker has acquired the *tacit* skills that come with actual work experience. Employers, unlike asset theorists, know that a good part of these skills are exceedingly portable. A certificate also signals to employers that a worker has the *extrafunctional* skills needed for applying himself to a difficult task over an extended time, as for example finishing an apprenticeship. That the tacit and extrafunctional skills that come with workplace-based training are portable beyond specific occupations or groups of occupations is shown by the fact that chemical firms like to employ apprenticed bakers as first-line operators, relying on their functional skills in mixing and transforming substances, as well as on their acquired extrafunctional habit of diligence and patience in controlling a long-drawn-out production process.

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et al. (2001: 170) on the nature of national skill profiles. For example, U.K. skills are counted as “occupational/general” on the basis of 13 percent of 24–35-year-olds having a university degree and 76 percent an “upper secondary education.” Germany, however, is scored “firm/industry/occupational” with also 13 percent university graduates and 81 percent (!) in upper secondary education. The Netherlands, with 22 percent in the university category, i.e., only four points behind the leader, the United States, and nine points before the United Kingdom, are classified as “industry-occupational.” The label “general” is reserved exclusively for Anglo countries (U.S., Canada, Australia, U.K., New Zealand, and Ireland)!

- 34 See the repeated reminders sent by the OECD to the German government that Germany does not have enough university graduates (the latest example is Organisation for European Economic Cooperation 2009). That Germany’s international competitiveness vastly exceeds that of the U.S. or the U.K., with a wage and income structure that is – still – much more egalitarian than in the two leading Anglo-American countries, is never mentioned in this context, although one might imagine that it could have something to do with it.
- 35 Which, as noted, folds firm-specific and occupational skills into the same category of “specific” skills.

In addition to ethnocentric bias, other explanations for the belief that occupational skills are narrower, lower, and less portable than they actually are include ignorance of the differences between occupational and craft work regimes. As pointed out, where craft unions have long defended narrow specialization while redefining skill into an entitlement to employment in a union-imposed standardized pattern of division of labor, occupational systems have broadened and updated skill profiles to increase workplace and labor market flexibility and keep pace with technological progress. In Germany, pre-industrial job territories were preserved, if at all, not in the factories of the modern economy, but in the small-firm artisanal sector where craftsmen survived as independent small business owners, much more than in Anglo-American countries (Streeck 1989). In sharp contrast to the importation of the craft regime into the factories of early industrializing Anglo-American societies, work in German industry, as lucidly pointed out by David Marsden (1999, 2000), came to be organized at an early point around occupational functions and procedures defined by tasks, qualifications, or capacities, instead of job territories or “tools of the trade.” Not only did this make the typically German workplace much less rigid and less in need of “managerial” supervision. It also gave rise to a sustained shared interest of workers and employers in a continuous development of work skills.

A further factor that must not be overlooked is the low social prestige, especially in the United States, not just of manual work as such but also of anything called “vocational.” In the United States, attending college was and still is widely regarded as an obligatory entry path into the “middle class,” making it essential for anyone sharing the, equally obligatory, “American dream” of upward mobility. In fact college prepares its students above all for the large number of general, or generalist, managerial positions characteristic of the American economy – positions that exist as a result of the successful deskilling of craft workers. As today’s first-line operators have to pay with their low wages for the large and often well-paid managerial overhead exercising over them the control that has been wrested from them in the class conflicts of the past, the specific division of labor in American workplaces and the skill pattern complementing it is, as noted, explained not by functional expediency but by political power.

Those who fail to get into college – where college includes all sort of tertiary institutions providing classroom instruction – thereby reveal themselves to be “practically talented,” meaning unfit for the managerial middle class destined to control them. If at all, they attend – or better, have to attend – “vocational school.” Actually, in large parts of the United States, vocational education was long seen as a reserve for Afro-Americans, a stigma that is still alive far beyond the South. It seems that the particular classist and racist connotations of “vocational” as opposed to “academic” – connotations that are much stronger in the United States than in Europe, although Europe is catching up – also color Anglo-American perceptions of European vocational training systems, including

the breadth and level of the skills they produce, and they even seem inform scholarly concepts such as, in particular, the distinction between “specific” and “general” skills.

An indication of the traditionally low esteem of manual work in Anglo-American societies is the distinction in the English language between *professions* and *occupations*. As pointed out, underlying it is the sharp division in Anglo-American culture between the “academic” and therefore general and high skills of the middle class – whose restrictive labor market practices are not recognized as such – and the non-academic and on this account low and specific skills of manual workers associated with, socially illegitimate, claims to job ownership. There is no parallel to this in German, where the word *Beruf* is used equally for both professions and occupations. Thus a skilled metal mechanic in Germany has a *Beruf* just as a physician or a professor. This is why Germans sometimes irritate Anglo-American audiences when, in English, they speak of the “profession” of, say, a carpenter. In this context it is interesting to remember that in the 1980s, an English industrial sociologist, who had studied the small-firm *Handwerk* sector in Germany, expressed his admiration for the high levels of competence he had seen by referring to German *Handwerksberufe* as “professions for the people.”<sup>36</sup>

If German-style occupational skills are in fact broad, high, and portable, and more so on average than Anglo-American skills, the question remains why employment protection and an extensive welfare state should exist in occupational countries if they do not seem to be required even in non-occupational ones. As in the case of the presumably “general” skills of Anglo-American workers presumably accounting for the liberal nature of “liberal market economies,” economic-functional explanations fail spectacularly. Of course, outside of the conceptual framework of “asset theory,” it should not be hard to see why workers who have employment alternatives should nevertheless wish to have their present employment protected, for example because they want to continue to live where they live rather than having to move where alternative jobs are. More generally, workers may find it attractive *to be able to quit while being protected from being fired*, even if their employers may, on account of their high skills, not normally be inclined to fire them, even in the absence of legal employment protection. In fact, for a long time this was exactly the situation of the German *Facharbeiter*, a situation that was in many ways the foundation of their exceptionally strong position inside their employment relationship.<sup>37</sup> Solid employment protection and high unemployment benefits may actually be seen as an institutional equivalent or, for that matter, reinforcement of the economic indispensability, and thus the power, that workers, according to Goldthorpe (2000), derive from high and specific skills.

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36 Unfortunately I cannot locate the source any more. Apparently the concept is taken from Gerstl and Jacobs (1976).

37 Obviously this was the opposite of the Japanese situation where the worker was unable to quit, due to the resulting loss of his deferred wages and to other employers refusing to hire him. At the same time, a Japanese employer had and has the power to dismiss workers whom he considers to have violated their duties.



But why would employers agree to an employment and skill regime that puts them at an obvious disadvantage? Once more, there is no way of explaining this in efficiency or transaction-cost theoretical terms. Only a political explanation will do, exactly as in the case of labor markets in Anglo-America and, for that matter, Japan. Extensive social protection of the sort found in European welfare states cannot possibly be the result of a rational choice of efficiency-seeking firms based on the nature of skills defined as “assets.” Rather than the product of cooperative economizing on transaction costs, they reflect the distribution of power between capital and labor at crucial moments in history, when formative decisions were made on a country’s future social and institutional structure. In Germany, as in other countries with encompassing political unionism and strong representation of workers in the political party system, it was possible historically to impose on employers an employment regime that improved the situation of all workers, including those for whom an already strong market position was no reason to object to it being strengthened even further by political-institutional means. That this was no more than a second-best solution for capital is indicated, among other things, by its active contribution to the worldwide liberalization of the postwar political economy during the last two decades.<sup>38</sup>

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38 A question that suggests itself at this point is how a high-protection labor market regime that was clearly not “required” for profitability and therefore never stood a chance of becoming the first “rational” choice of employers could in the end have turned out so economically efficient and even superior to countries where employers had historically been strong enough to impose their will. Ultimately this raises the issue of causality in the relationship between skill patterns and political institutions. As noted, “asset theory” is ambiguous here, allowing interchangeably for skills conditioning institutions and institutions (including not only labor market regimes but also systems of political representation, Cusack et al. 2007) shaping (investment in) skills (on asset theory’s ambiguity, see also Korpi 2006: 181). Elsewhere (Streeck 2004) I have explained the – temporary – economic superiority of what was only the second-best solution from the perspective of employers as being the outcome of a sequence of political conflicts and economic adjustments to its results, by capital learning with time to make the best out of what it had been unable to prevent. Where such a sequence occurs and is allowed to occur, what had originally been constraints on firms may become “beneficial” for them (Streeck 1997a), as they force firms to adopt more demanding and perhaps, as a result, more competitive modes of production (for a similar point, based on comparative data, see Harcourt/Wood 2007). Whether or not such a process of industrial upgrading toward more socially acceptable modes of profit-making does and can take place depends on many contingent conditions, some of which I have discussed in earlier work. In any case, even where “asset theory” emphasizes the causal significance of institutions for skills, rather than the other way around, it does so in an efficiency-theoretical manner, modeling the process in terms of a consensual search for the most economically advantageous way of making use of a given institutional endowment (an exception is probably Iversen/Stephens 2008). By contrast, I would emphasize the conflictual nature of the search of a political economy for its specific mode of production, driven by power struggles between the classes, as in imposed wage compression through industrial trade unions or in Bravermanian de-skilling (similar Korpi 2006).

## In conclusion

Asset theoretical accounts of the political economy of modern capitalism explain social protection with reference to the nature of the work skills employed by a country's firms in their pursuit of nationally characteristic production strategies. As pointed out, patterns of skill, production, and protection are conceptually organized by "asset theory" into congruent bipolar distinctions lined up with the VoC master distinction between "LMEs" and "CMEs." Skills conceived as assets are divided into the categories of general = high-in-the-sense-of-academic = broad = portable and specific = low-in-the-sense-of-nonacademic = narrow = nonportable-occupational; production is either mass or post-industrial production using general skills, or diversified production using specific skills; and social protection from markets is either absent (in "LMEs" using general skills for mass or service production) or present (in "CMEs" using specific skills for diversified and industrial production). Congruence between or clustering of dichotomized skill types, production modes, and forms of social protection is accounted for in economicist-functional terms. In countries where social protection is absent, this is supposedly because the skills required for the national mode of production do not require protection for efficiency, thus making protection undesirable for both employers and workers. Where protection is to the contrary present, this is because, without it, the type of skills that firms need and workers must acquire could be neither created nor transacted.

"It can scarcely be denied," writes someone who must know, "that the supreme goal of all theory is to make the irreducible basic elements as simple and as few as possible without having to surrender the adequate representation of a single datum of experience" (Einstein 1934: 165). In a simplified version, this principle is referred to as "Einstein's razor," quoted colloquially as "make things as simple as possible, but not simpler."<sup>39</sup> According to Wikipedia, the principle is invoked "when an appeal to Occam's razor results in an over-simplified explanation that leads to a false conclusion." Among the many "data of experience" that asset theory suppresses for the sake of simplicity, if not of economicist ideology or conformity to the *Zeitgeist* of "rational choice," are that general skills need not always be high, and high skills not always broad or portable; that specific skills are not necessarily low, and low skills not always immobile; and that occupational skills in some countries may be as high and broad as academic skills in others, and far from firm or even industry-specific.

Asset theory's revision of class and conflict theoretical accounts of the politics of social protection presupposes that the reality of skills can meaningfully be folded into the radically simplified bipolar property space of a one-dimensional distinction between general and specific. As that space proves insufficiently complex, the theory's core project – substituting transaction cost economics for politics – must collapse,<sup>40</sup> and political

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39 Or, even shorter: "Make it simple but not too simple."

40 This holds even where, as in Iversen and Stephens (2008), politics is invited back by allowing



cleavages, market conditions, and the distribution of power between the classes in crucial moments of a country's history come again to the fore as principal explanatory factors. Thus, the reason why the many workers in Anglo-American countries with skills that are "general" but also low have little social protection, if any at all, is not that the nature of their skills has made protection dispensable for them, but that they never had the allies and the power needed to get it. Similarly, the fact that workers with occupational skills outside Anglo-America enjoy, or in the past enjoyed, the benefits of extensive social protection is not explained by their being immobile in the labor market – in fact, as we have seen, they may be very mobile indeed. Nor is it explained by their employers' concerns about their willingness to be trained in the kind of skills that the firms in their country need. Instead it is due to workers' historical capacity, derived from encompassing organization in political trade unions, to extract from capital concessions in excess of what capital would have considered functionally necessary for profitability.

Actually, as we have seen, a country's predominant skill pattern may itself be explained historically by nationally specific institutional constraints and opportunities for capital and labor, in particular with respect to the politics of work organization and of authority at the point of production, although decidedly not as an outcome of cooperative economizing on transaction costs. As far as Anglo-American countries are concerned, relevant factors were the successful particularism in the nineteenth century of elite workers with high but narrow skills; futile struggles of other workers with low or no skills for universal forms of social protection, against both employers and craft unions; and a successful effort at de-skilling by employers fighting the restrictive practices of skilled labor, generating high wage dispersion and an oversized middleclass of managerial "generalists." Outside Anglo-America, by comparison, early elimination of elite particularism among workers, the rise of encompassing political trade unions, compressed wage scales through industry-level collective bargaining and successful political mobilization for universal social rights gave rise, in some countries at least, to a tripartite public policy of general upskilling, allowing for low hierarchies, high flexibility and considerable worker autonomy at the point of production, and in turn enabling as well as constraining employers to specialize on diversified products with high value-added (Streeck 2004). Eliminating class and class conflict from political economy, and replacing the constraints of history and power with the timeless functionalist voluntarism of rational choice, is an ideological project that can clearly not be grounded in the complex reality of the formation and deployment of work skills.

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for a reversal in the originally stipulated causal direction, with social institutions shaping skills and the production strategies of firms, rather than the other way around. In either case, the consolidated triple dichotomy of content, level, and portability involved in the distinction between general and specific skills is bound to produce an oversimplified, and therefore inevitably distorted, picture.

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