Caps and Gowns: Historical Reflections on the Institutions that Shaped Learning for and at Work in Germany and the United States, 1800-1945

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This study explains how and why Germany and the United States institutionalized radically different educational and training systems. Germans rely upon regulated apprenticeships supplemented by vocational schooling to prepare and certify the majority of their youth for work. Nearly 70 percent of all Germans eventually undertake an apprenticeship. Americans, in contrast, educate, train, and certify their young almost exclusively in academically oriented schools. These divergent strategies have strikingly different consequences for the distribution of knowledge and skills, the organization of work, and the division of labor in the two societies.

The strength and popularity of vocational education, training, and certification practices in Germany issue from their effectiveness. Consequently, employers and workers developed a mutual interest in them. This promoted, with the aid of state mediation, the development of a complex system of governance that directly linked vocational programs and certificates to the economy. Analogously, the weakness and low status of vocational education programs in the US derived from their conspicuous record of mediocrity. By subordinating these to the academically oriented system of secondary schooling already in place, Americans relegated them to marginality. Cut off from the workplaces and communities of practice in which vocations take shape and are plied, vocational education did not function effectively.

Both supply and demand factors shaped this German-American divergence. On the "supply" side, the capacity of social actors in the two societies to engage in collective action differed. As a result, while both Americans and Germans experimented with systematic workplace training after 1900, only Germans found a way to sustain and reinforce it over time. This they achieved through a complex regulatory scheme organized through occupational licensing. The historical legacy of handicraft guilds in German custom and law, and

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their absence in the US, played an especially important part in the story. Differences in state structure and administrative capacity counted heavily here, as did the two countries' quite distinct social geographies.

Driven by political and social welfare concerns, the German state acted to shore up and reinforce a legally organized artisanal sector. In contrast to the US, where all firms are subject to the same laws (with minor exceptions), the German "artisanate" operates under a legal code separate from industry's. The development of a legally distinct craft code reflected the fact that small and middle-sized craft firms operate under a "logic" distinct from large industrial ones. Consequently, it was designed to facilitate the collective production of goods and services upon which craft producers depend but are unable to supply for themselves. Educational goods are among the most crucial of these. They include technical and business training, research and development, mechanisms for the collection and diffusion of the latest technological and business information, sources of instruction and advice on financial and legal matters (such as contracts, safety codes, taxes, industrial relations, credit, marketing, business planning), and the like.

A core piece of this legislation came into being in 1897 with the passage of the so-called Handicraft Protection Law. Contrary to what the law's name suggests and historians have commonly assumed, it turns out that this was a progressive self-help initiative designed to orient craft producers to market - not protect them from it. The southwestern states, particularly Baden and Württemberg, made crucial contributions to this outcome. They shaped the Handicraft Law and subsequent training initiatives, based on over a half century of experimentation with bootstrapping policies at home. These had served to promote craft production, on which the people of the southwestern states depended.

Since the Handicraft Law granted the German artisanate control over training and certification, Germany's unions found it difficult to pursue classic trades union strategies. By rendering labor organizations unable to control access to the trades, handicraft training pushed them towards industrial unionism.[1] Furthermore, because it permitted certified craft workers to move easily into skilled industrial jobs - thereby leapfrogging young industrial workers - unions became leading advocates of industrial training after WWI.

In the US, in contrast, America's trades-based labor organizations pursued skill-monopolizing strategies. This made them opponents of public skill formation and placed them in direct conflict with employers over skills, work organization, and shop control. Consequently, unions were highly wary of employer-sponsored vocational programs, which they - in alliance with educators - successfully opposed. Labor's skill monopolization strategies gave employers high incentives to circumvent skilled labor in the production process and, where

[1] This point is not explicitly developed in the dissertation. It owes to the subsequent work of Kathleen Thelen and Ikuo Kume, "The Rise of Nonmarket Training Regimes: Germany and Japan Compared," *Journal of Japanese Studies*, 25 (1999), pp. 33-64.

possible, substitute capital and organization for it.

Artisanal control of skills certification in Germany led in the interwar years to industry-craft conflict over training rights rather than an American-style capital-labor clash over control of workplace skills. German industry, especially in the skill-intensive metalworking and machine building sectors, had difficulty recruiting first-rate apprentices to their training programs because they lacked the legal right to certify graduates of their programs. However, since licensed journeymen from the craft sector could easily find employment as skilled workers in either sector, ambitious apprentices preferred training in craft firms. Thus, Germany's skill-using industrial employers and its industrial unions shared an interest in skill formation and certification. American manufacturers and their workers, in contrast, did not. This was in part because Americans lacked institutional structures that restrained the "social partners" - as Germans often refer to capital and labor - in a way that allowed them realize their mutual interest in skills.

The system of training regulation and certification institutionalized in the German crafts at the turn of the century was transferred and adapted to industry only under Nazi auspices in the 1930s. Two factors counted heavily here: a shortage of skilled labor, one especially palpable in metalworking as Germany's military buildup began to take hold; and the capacity of the Nazis to weaken labor to the point where it had little effective say in training policy - a point that proved crucial to large, Ruhr-based industrial employers. Only after the war was labor given parity within the training system.

Unable to find workable firm-based solutions to training issues, Americans turned increasingly to their schools for initial vocational education and certification. This worked relatively well for those groups, especially white-collar and professional, whose work required high levels of literacy, numeracy, penmanship, and general knowledge. It proved more problematic, however, for the majority of young Americans who entered blue collar occupations in which these skills were less important. At the same time, American schools ignored many human skills that counted heavily at work and in life, but were little valued by academics or proved difficult to teach from a book.

American supporters of vocational education widely advocated independently administered industrial and trades programs - a key component of German practice. After the passage of the National Vocational Education Act in 1917, however, they faced an uphill and ultimately unsuccessful struggle against an entrenched, culturally oriented educational establishment that fought successfully to defend its professional turf. In every state but Wisconsin, vocational education was subordinated to the system of secondary school administration already in place. Put under the supervision of people who cared little about industry and the trades, and knew less, vocational programs quickly devolved into "lyceums for losers" - holding pens for overage, disruptive students.

These outcomes were influenced by "demand" side constraints and opportunities as well. Thanks to a social geography conducive to mass-production

and other rationalization strategies centered in the Upper Midwest, Americans found ways to reorganize work that minimized the need for formal education and training at work. For a number of reasons - an older, more dispersed, locally oriented manufacturing sector, a smaller domestic market, war-induced conditions, etc. - these proved far less available to their German counterparts. Thus Germans possessed stronger incentives to make investments in workplace education and training than did Americans and enjoyed a greater stock of social-institutional resources with which to organize, administer, and protect them.

The dissertation begins with an introduction that outlines the principal goals of the project and sketches its origins. Chapter 2 places the practice of apprenticeship within the agriculturally oriented household economies of the early modern period, one that rarely served as the explicit training device. Rather apprenticeship and service functioned as mechanisms for redistributing "surplus" labor from families without the means to employ it productively (and thus support their children) to others that could. Thus, in order to become an explicit training device, inherited practice had to be transformed. The decline of apprenticeship was a product of paid employment. In most respects, it represented a better, less intrusive means of allocating juvenile labor. Its disappearance had little to do with an alleged "bastardization of skills," widely but erroneously reputed to have accompanied industrialization.

Indeed, Chapter 3 documents a precipitous, late nineteenth century rise in the demand for skills. This was a product of a decisive shift to metals in manufacturing and the building trades. This industrial restructuring drew large numbers of callow youth into the skill-using metal trades, overwhelming the capacity of traditional, highly informal, on-the-job mechanisms to socialize and train them. The degree to which firms faced a shortfall of skilled manpower and the way in which they responded to it depended greatly upon the regionally distinct, social-geographic context in which they operated.

The chapter identifies three elemental forms of urban-industrial order, which it uses to highlight industrial variation. Building upon this tripartite typology, it tracks the social-geographic origins of Germany's modern training system to the comparatively resource poor, long settled, slow-to-develop, dispersed urban regions of the German Southwest, particularly Baden and Württemberg. In contrast, it traces America's characteristic, skill-minimizing work rationalization strategies - especially mass production - to the resource-rich, rapidly developing, nationally oriented manufacturing belt of the upper Midwest. These two regions provided social-institutional models that became available to producers and policy makers in other parts of each country, especially as secondary education developed and was institutionalized in the two nations.

Chapter 4 explores the informal, tacit character of workplace education and training in workshops and factories. It shows that while the skills required of an accomplished machinist were quite different from those of machine operators in textile factories, the means by which they acquired work knowledge was fundamentally similar. Further, it charts experimentation with mod-

ern industrial apprenticeships and corporation schooling in Germany and the US after 1900, innovations precipitated by the way the metals revolution undercut traditional training methods, especially in the skill-using metal trades.

Chapters 5 and 6 describe the institutionalization of vocational education and training at the national levels in Germany and the US. These chapters sketch state structure, development, and administrative capacity in the two countries, and detail how these shaped their divergent approaches to education, training, and certification. At the end of highly complex, contingent, and path-dependent proceedings, each country enacted legislation that crucially shaped subsequent education and training developments within it. Germans passed the misnamed Handicraft Protection Bill in 1897. Americans did not enact the troubled National Vocational Education Act (Smith-Hughes) until 1917, just prior to entering the Great War. This delay proved important, as pressures to train in the US subsided quickly after the war.

In stressing the contributions of federalism to the history of education and training in Germany, Chapter 5 reinforces the historiographic movement away from older, Prussian-centric accounts of German social, economic, and political development. Further, in contradistinction to received opinion, it emphasizes the fundamentally "modern," market-conforming thrust of the 1897 legislation. Whereas the German education and training system proved its capacity to limit the influence of academically oriented educationalists within it, Chapter 6 shows how the relative weakness of the American state before the 1930s created an administrative vacuum into which a powerful, university oriented, professionally organized educational establishment moved. The way in which this happened ultimately severed connections between schools and the economy. Without these, schools were in no position to provide meaningful vocational education and training. As educationalists gradually imposed their values and interests upon the schools, they acquired the power to determine what education was - or at least, how Americans came to perceive it.

In combination, these chapters challenge a number of assumptions commonly found in the historiography and economic literature of the two countries, among which: the relative "modernity" of "free associations;" the "illiberal" character of compulsory organizational forms; the "atavistic" and "monopolistic" character of Germany's corporate organizations; and the inappropriateness of assigning economic interests a voice in public educational policy. They make clear that Germany's compulsory craft chambers were specifically designed to address persistent collective action problems that plagued voluntary associations, not to protect artisans from market competition.

Chapter 7 follows the implementation of this legislation in each country. In essence, Germany's Handicraft Bill of 1897 extended an education-centered model of handicraft self-help and uplift developed in the middle-sized states of the German Southwest to the empire, and superimposed upon it a craft chamber system of self-government and training oversight. This arrangement proved far more felicitous than anyone dared hope, and was followed up by the importation of other components of southwestern trades promotion to Prussia, par-

ticularly industrial continuation and trades schools. Meanwhile, in the United States, Smith-Hughes faced enormous resistance from the moment it was passed. In fact, it was drafted in a way that made it easy for opponents to undermine it. Educational groups, teachers unions, women's clubs, and eventually organized labor closed ranks to see to it that vocational programs were subordinated to academic interests in every state but Wisconsin. Interestingly, agricultural programs proved an exception. Their success and popularity, together with that of commercial and business courses, provide a glimmer of what well-conceived and executed programs might have achieved.

Chapter 8 depicts the consolidation of national patterns of education and training in the two countries up to 1945. In these years, Germans managed to transfer their nascent system of handicraft training and certification to industry and commerce, while expanding access to women. For their part, Americans moved to discontinue corporation schooling and systematic apprenticeship, and to reorganize work in ways that permitted a return to informal, on-the-job training for most blue-collar workers. These developments were an outgrowth of startling productivity gains in metalworking that radically slowed the recruitment of new, inexperienced workers, permitting a return to older, informal forms of on-the-job training. Meanwhile, firms turned decisively to high schools, colleges, and professional graduate programs for the recruitment of white-collar personnel. This effectively put a stop to the blue-to-white collar mobility that had once been relatively commonplace in the metal trades (and appears to have accelerated in Germany). It also progressively transformed school leaving certificates into a de facto, if not highly valid or reliable, system of vocational licensing.

Finally, Chapter 9 summarizes the major findings and spells out some of their implications. It concludes by stressing the role of workplaces as sites of learning. Vocational education was, is, and will remain a central component of human learning. The challenge for Americans is to build institutions that will promote and improve it, and give it its rightful due.