Introduction: Guilds, Innovation, and the European Economy, 1400–1800

S. R. Epstein and Maarten Prak¹

Craft guilds, Adam Smith famously suggested in 1776, are 'a conspiracy against the public', and the government should 'do nothing to facilitate such assemblies, much less to render them necessary'.² As in so much other economic thinking, Smith was a trendsetter in this too. Not only were his ideas about guilds shared by some of his late eighteenth-century contemporaries, they seemed to apply almost overnight when French revolutionaries abolished the guilds, first in France (in 1791) and then in much of the rest of continental Europe. For a long time, historians have interpreted the simultaneity of ideas and policies as definitive proof that the guilds had outlived themselves as the gothic remnants of a bygone age and should make way for the modern world of the steam engine and laissez-faire. Guilds, in other words, were seen as part of an economic system that had prevented the European economy from realising its full economic potential. It was, if anything, a demonstration of the validity of this argument, that England was the first European country to lose its guilds - English guilds were supposed to have vanished through some unplanned process starting in the second half of the seventeenth century and also the first country to industrialise.

The negative view of guilds survived for the best part of two centuries in history textbooks and specialised works.³ A recent survey of the early modern European economy routinely portrays guilds as 'restrictive', as instruments of elite rent seeking, and as hotbeds of economic

¹ The authors wish to thank the anonymous reviewers of this book for several helpful suggestions, Rita Astuti, Tine De Moor, Oscar Gelderblom, Ulrich Pfister, and Jan Luiten van Zanden, as well as the participants of the conference 'The Return of the Guilds' (Utrecht, October 2006), for their comments on earlier drafts of this introduction, and Patrick Wallis also for linguistic assistance. The usual disclaimer applies.

² A. Smith, The Wealth of Nations, Book One, ch. 10, part 2.

³ For a survey concentrating on the German literature, R. Reith, 'Technische Innovationen im Handwerk der frühen Neuzeit? Traditionen, Probleme und Perspektive der Forschung', in K. H. Kaufhold and W. Reininghaus (eds.), *Stadt und Handwerk in Mittelalter und Frühe Neuzeit* Städteforschung, vol. A54 (Cologne: Böhlau, 2000), 23–32.

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conservatism.⁴ In his wonderful work on the history of clocks and clock making, David Landes observes, without much supporting evidence, that because 'most guilds defended the interests of their weakest and most timorous members..., they were compelled to wage a ceaseless struggle against the forces of change'.⁵ Similarly, Joel Mokyr, in his ground-breaking work on the origins of the knowledge economy, blames guilds, together with tax collectors and foreign invaders, for the industrial decline of Northern Italy, Southern Germany, and the Low Countries.⁶

This generally negative evaluation of the guilds slowly started to change, however, in the 1980s.⁷ Anglo-American historians like Steven Kaplan, Michael Sonenscher, and James Farr produced work that cast doubt on the negative impact of guilds.⁸ Concentrating on French towns, their work set out to demonstrate that guilds were of great significance to urban life during the Old Regime, and not necessarily in a negative sense. They each discovered how, in a variety of ways, guilds had, in the course of time, adapted to new circumstances. Far from being the fossilised

- ⁵ D. Landes, *Revolution in Time: Clocks and the Making of the Modern World* (Cambridge, MA: Belknap Press, 1983), 210.
- ⁶ J. Mokyr, *The Gifts of Athena: Historical Origins of the Knowledge Economy* (Princeton: Princeton University Press, 2002), 31.
- ⁷ Also J. Ehmer, 'Traditionelles Denken und neue Fragestellungen zur Geschichte von Handwerk und Zunft', in F. Lenger (ed.), *Handwerk, Hausindustrie und die historische* Schule der Nationalökonomie: Wissenschafts- und gewerbegeschichtliche Perspektive (Bielefeld: Verlag für Regionalgeschichte), 19–77.
- ⁸ Arguably, the first major revisionist publications were R. W. Unger, *Dutch Shipbuilding* before 1800 (Assen: Van Gorcum, 1978), and S. L. Kaplan, 'Réflexions sur la police du monde de travail, 1700-1815', Revue historique 261 (1979), 17-77. See also S. L. Kaplan, 'Social Classification and Representation in the Corporate World of Eighteenth-century Paris: Turgot's "Carnival"', in S. L. Kaplan and C. Koepp (eds.), Work in France: Representations, Meaning, Organization, and Practice (Ithaca, NY: Cornell University Press, 1986), 176-228; id., 'Les corporations, les "faux-ouvriers" et le faubourg Saint-Antoine au XVIIIe siècle', Annales ESC 43 (1988), 453-78; S. L. Kaplan, La fin des corporations (Paris: Fayard, 2001); M. Sonenscher, The Hatters of Eighteenth-century France (Berkeley: University of California Press, 1987); M. Sonenscher, Work and Wages: Natural Law, Politics and the Eighteenth-century French Trades (Cambridge: Cambridge University Press, 1989); J. R. Farr, Hands of Honor: Artisans and Their World in Dijon, 1550-1650 (Ithaca, NY: Cornell University Press, 1988); J. R. Farr, "On the Shop Floor": Guilds, Artisans, and the European Market Economy, 1350-1750', Journal of Early Modern History 1 (1997), 24-54; J. R. Farr, Artisans in Europe, 1300-1914 (Cambridge: Cambridge University Press, 2000).

⁴ P. Musgrave, The Early Modern European Economy (Houndmills, 1999), 71 (quote), 89, 133; see also D. Landes, The Unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present (Cambridge: Cambridge University Press, 1969), 134; H. Kellenbenz, 'Technology in the Age of the Scientific Revolution', in C. Cipolla (ed.), Fontana Economic History of Europe, vol. 2: The Sixteenth and Seventeenth Centuries (s.1: Fontana/Collins, 1973), 243–5; J. de Vries, The Economy of Europe in an Age of Crisis, 1600–1750 (Cambridge: Cambridge University Press, 1975), 94, 238; D. Landes, The Wealth and Poverty of Nations: Why Some Are So Rich and Some So Poor (New York: Norton, 1999), 174, 242–5.

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remains of the Middle Ages, they suggested that guilds were indeed capable of absorbing change in the run-up to the Industrial Revolution. In their work, Kaplan, Sonenscher, and Farr emphasised the social and political dimensions of the corporate world and seemed to suggest that economically guilds were indifferent, rather than a positive or a negative influence. The new keyword for guilds was *flexibility*; guilds were survivors, adapting to changing environments.⁹

This book aims to move beyond the discourse of 'flexibility' and seeks to reinstate the economy into the debate about guilds.¹⁰ It raises fundamental questions about the economic impact of craft guilds:¹¹ were they indeed the rent seeking institutions of middle-class producers, as Adam Smith saw them? Did they uniformly obstruct the introduction of innovations? And was their impact on the fate of the late medieval and early modern European economy at best indifferent, or even outright negative? There are some prima facie arguments against this thesis. The abolition of the guilds was in most of continental Europe a political

⁹ Farr, 'On the shop floor', 25, 54; Farr, Artisans, 88, 91; H. Deceulaer, 'Guilds and Litigation: Conflict Settlement in Antwerp (1585–1796)', in M. Boone and M. Prak (eds.), Statuts individuels, statuts corporatifs et statuts judiciaries dans les villes européennes (moyen âge et temps modernes) (Leuven: Garant, 1996), 207; J. P. Ward, Metropolitan Communities: Trade Guilds, Identity and Change in Early Modern London (Stanford: Stanford University Press, 1997), 146; D. Woodward, Men at Work: Labourers and Building Craftsmen in the Towns of Northern England, 1450–1750 (Cambridge: Cambridge University Press, 1995), 28; see also Sonenscher, Work, 364; G. Rosser, 'Crafts, Guilds, and the Negotiation of Work', Past and Present 154 (1997), 30; or H. Swanson, 'The Illusion of Economic Structure: Craft Guilds in Late Medieval English Towns', Past and Present 121 (1988), 29–48, who makes the same point without using the word flexible as such.

¹⁰ Unger, Dutch shipbuilding, was not only unusual because it was an early revisionist work, and not about France, but also because it claimed that guilds were economically beneficial. It contains many observations underscored and amplified by the work presented in this volume.

¹¹ We would like to emphasise from the outset that this book is not about all varieties of guilds, and not even about all professional corporate associations, but about one specific type, the craft, or industrial, guild. The service sector, where other economic forces are at work, is therefore not included in our discussion; cf. S. R. Epstein, 'Craft Guilds', in J. Mokyr (ed.), The Oxford Encyclopedia of Economic History, vol. 2 (Oxford: Oxford University Press, 2003), 35-9. For the variety of guild types and organisations, see D. Keene, 'English Urban Guilds, c. 900-1300: The Purposes and Politics of Association', in I. A. Gadd and P. Wallis (eds.), Guilds and Association in Europe, 900-1900 (London: Centre for Metropolitan History, 2006), 5-10; G. Rosser, 'Big Brotherhood: Guilds in Urban Politics in Late Medieval England', in ibid., 31; see also the discussion in A. Black, Guild and State: European Political Thought from the Twelfth Century to the Present (New Brunswick: Transaction, 2003), 4-7, and S. A. Epstein, Wage Labor and Guilds in Medieval Europe (Chapel Hill: University of North Carolina Press, 1991), chs. 1 and 2. On merchant guilds: A. Greif, Institutions and the Path to the Modern Economy: Lessons from Medieval Trade (Cambridge: Cambridge University Press, 2006), ch. 4, esp. 93 n2.

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decision, for which economic motivations were at best of secondary importance.¹² New quantitative research has suggested that economic growth in pre-industrial Europe could in fact coincide with an upsurge in the number of craft guilds.¹³ This book seeks to further explore the possibilities of an alternative interpretation of the guilds' economic history, across a range of European countries and regions, and through a variety of approaches.¹⁴ In the language of Douglass North's institutional economics, it claims that guilds helped reduce transaction costs in at least three distinct, significant stages of the industrial process. First, by creating a stable environment, which encouraged craftsmen to invest in training the successor generation. Second, through the coordination of complicated production processes. And finally, in the marketing stage, through the reduction of information asymmetries between producers and customers. Some of the following chapters pursue these aspects for the guild system as a whole: guild organisations, apprenticeship, subcontracting, labour mobility. Others look at specific branches of craft industry, to investigate in detail the contribution guilds made in the Venetian silk and glass industries, the silk industry of Lyon, the painting industry of Holland, and instrument making in various European countries. Special attention will be paid to the craft guilds of Britain, because the interpretation of their history has been so enormously influential in the debate over the economic role of guilds. The purpose of the rest of this introduction is to provide a general framework for the specialised case studies in this book. It will do so by sketching a number of general features of industrial production before the Industrial Revolution, and subsequently demonstrate how these features were handled by guilds. We will concentrate on their contribution to the growth of human capital (through the training of the skilled workforce), the coordination of production functions, the creation of markets, and on guilds' reactions to innovation. We will also briefly discuss the main alternatives to guild organisation.

 ¹² G. Bossenga, 'La revolution française et les corporations: Trois exemples lillois', Annales ESC 43 (1988), 405–26; H.-G. Haupt (ed.), Das Ende der Zünfte: Ein europäischer Vergleich Kritische Studien zur Geschichtswissenschaft vol. 151 (Göttingen: Vandenhoeck & Ruprecht), 2002; Kaplan, Fin, 600–01.

¹³ B. De Munck, P. Lourens, and J. Lucassen, 'The Establishment and Distribution of Craft Guilds in the Low Countries, 1000–1800', in M. Prak, C. Lis, J. Lucassen, and H. Soly (eds.), *Craft Guilds in the Early Modern Low Countries: Work, Power, and Representation* (Aldershot: Ashgate, 2006), 64.

¹⁴ Previous collective works on craft guilds that cover substantial parts of Europe include S. R. Epstein, H.-G. Haupt, C. Poni, and H. Soly (eds.), *Guilds, Economy, and Society* (Madrid: Fundacion Fomento de la Historia Economica, 1998); Haupt (ed.), *Ende der* Zünfte; P. Massa and A. Moioli (eds.), *Dalla corporazione al mutuo soccorso: Organizzazione e tutela del lavoro tra XVI e XX secolo* (Milan: FrancoAngeli, 2004); Gadd and Wallis (eds.), *Guilds and Association*.

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Characteristics of Craft Production

It is now generally accepted that, rather than a complete break with the previous period, the changes of the Industrial Revolution were the outcome of a long process of innovations during the preceding centuries.¹⁵ These innovations were characterised by micro, rather than macro, inventions and hence were incremental, though significant.¹⁶ Most pre-modern industries, in particular those producing traded goods, such as printing (where a macro invention did indeed happen), textile fabrics, glass making, and clock making, as well as shipbuilding and the metal industry, all displayed marked process and product innovations between roughly 1400 and 1800.¹⁷ In view of their specific characteristics, the source of these innovations, and of their transfer and adoption, must have been primarily the organisation of the production process and the training of the (skilled) workforce.¹⁸ Knowledge of how to make things – and make them well – was experience-based, rather than propositional and objectified. Therefore, to understand the process of industrial innovation in pre-industrial Europe, we have to investigate workers' training and the organisation of the various branches of industry, more specifically the institutions that promoted the creation of pools of skills. Given the face-to-face character of the transmission of skills and hence technology, communities of craftsmen were, at least potentially, the sites where technological development, and innovation more generally, were most likely to occur. The institutional framework for the training and clustering of the skilled workforce in 1800 was not fundamentally different from what it had been in, say, 1400: throughout this period guilds were the predominant institution governing early modern Europe's urban industries.

- ¹⁶ J. Mokyr, The Lever of Riches: Technological Creativity and Economic Progress (Oxford: Oxford University Press, 1990), 13; see also S. R. Epstein, 'Property Rights to Technical Knowledge in Premodern Europe, 1300–1800', American Economic Review 94 (2004), 382–3. For a more general reorientation of the history of technology along similar lines, see David Edgerton, The Shock of the Old: Technology and Global History since 1900 (Oxford: Oxford University Press, 2007).
- ¹⁷ E. Eisenstein, The Printing Revolution in Early Modern Europe (Cambridge: Cambridge University Press, 1983); N. B. Harte (ed.), The New Draperies in the Netherlands and England, 1300–1800 (Oxford: Oxford University Press, 1997); Unger, Dutch shipbuilding; chs. 2 and 5; chs. 6–9 in this volume. Arguments have been made for a transition even before the Black Death, as for example in E. M. Carus-Wilson, 'An Industrial Revolution of the Thirteenth Century', Economic History Review 1st ser. 11 (1941), 1–20.
- ¹⁸ As Ian Inkster has underlined, it was the production of 'useful and reliable knowledge' (URK) rather than science that generated technological progress before the 18th century; craftsmen were therefore vital to the promotion of technological innovation: 'Potentially Global: "Useful and Reliable Knowledge" and Material Progress in Europe, 1494– 1914', *The International History Review* 28 (2006), 237–86.

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¹⁵ Cf. Jan de Vries, 'The Industrial Revolution and the Industrious Revolution', *Journal of Economic History* 54 (1994), 250–4.

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Many pre-industrial products made huge demands on the skills of their producers, as anyone will be able to testify who has ever looked inside a watch, tried to paint a realistic human figure, or considered the complicated patterns in many textile fabrics. These demands are in fact not unlike the type of expertise required for work that the readers of this book will perhaps be more familiar with: academic research.¹⁹ From undergraduate to PhD is a trajectory that for most people takes the best part of a decade. Cognitive psychologists have discovered that the time of training required to master complicated skills is in fact remarkably similar across a wide variety of tasks: it takes roughly ten years to become a top-level expert in any kind of skill-based task.²⁰ Obviously, one does not have to go through the whole curriculum to be able to execute certain aspects of a job at a reasonable level. Therefore, the training of skills is usually subdivided into a number of stages. Again the academic curriculum provides a helpful illustration of the point: one can get out with a degree at BA, MA, and PhD levels, and at each point some students will feel they have developed the skills they are looking for, while at the same time it is well understood that there are further levels of expertise they are forsaking.

One reason why it took – and, in fact, still takes – so long for adolescents and young adults to become fully trained, is that crafts (like academic courses) typically combine so-called propositional and tacit types of knowledge.²¹ Propositional knowledge is factual as well as theoretical, logical, and explicit, and can therefore be learned from printed sources. Tacit knowledge, on the other hand, is implicit, non-linear, and addresses 'how' rather than 'why' questions.²² Because it cannot be articulated – 'we can know more than we can tell', as one scholar put it – tacit knowledge needs to be transferred from person to person.²³ This is confirmed by psychological research that demonstrates how this transfer of tacit knowledge happens most effectively in 'communities of practice', like craft guilds;

¹⁹ Cognitive psychologists make no distinction between expertise in crafts and in science: see K. A. Ericsson, 'An Introduction to *Cambridge Handbook of Expertise and Expert Performance*: Its Development, Organization, and Content', in K. A. Ericsson, N. Charness, P. J. Feltovich, and R. R. Hoffman (eds.), *Cambridge Handbook of Expertise and Expert Performance* (Cambridge: Cambridge University Press, 2006), 3–19.

²⁰ K. A. Ericsson, 'The Acquisition of Expert Performance: An Introduction to Some of the Issues', in K. A. Ericsson (ed.), *The Road to Excellence: The Acquisition of Expert Performance in the Arts and Sciences, Sports and Games* (Mahwah, NJ: Lawrence Erlbaum Associates, 1996), 10–11.

²¹ Mokyr, *Gifts of Athena*, ch. 1; Epstein, 'Property rights'.

²² Equivalent terms are explicit and implicit knowledge, or overt and covert knowledge: A. S. Reber, Implicit Learning and Knowledge: An Essay on the Cognitive Unconscious (New York: Norton, 1981), 10, 15.

²³ M. Polanyi, *The Tacit Dimension* (Gloucester: Peter Smith, 1966, orig. 1966), 4.

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modern skills training programmes in fact still reflect this.²⁴ Think of the university again: one can learn a lot about the historian's craft from textbooks, but to become good historians, students must *practice* that craft, over and over again, under the supervision of their teachers. These teachers work not as individuals, but collaborate in collectives of experts that usually identify themselves as, say, a History Department. In fact, the ideal of this learning environment, the university college, where teachers and students work and live together, was originally derived from the guild format; accomplished students still obtain a master's degree, another reflection of that shared origin with craft guilds.²⁵ Given the huge importance of skills for their economic performance, it comes as no surprise that craftsmen, and hence their organisations, showed a marked preference for labour-intensive over capital-intensive innovations. On numerous occasions, they indeed showed a strong dislike of the latter. Yet it would be wrong to equate this with an aversion to innovation per se, as will be demonstrated by many of the chapters in this book.

Guilds and the Pre-industrial Economy

Apprenticeship

So how exactly did craft guilds help promote innovation? The literature, and indeed the essays in this book, suggests that this could happen in a variety of ways. Probably their single most important contribution to innovation and the pre-industrial economy generally was the guilds' involvement in the training of human capital, as S. R. Epstein argues in the second chapter of this book.²⁶ Despite an extensive literature, it is a topic that still gives rise to a lot of confusion. One major source of this confusion is the length of time necessary to learn a craft. In the literature one can detect a tendency to see training, and hence apprenticeship,

²⁴ A. C. Cianciolo, C. Matthew, R. J. Sternberg, R. K. Wagner, 'Tacit Knowledge, Practical Intelligence, and Expertise', in Ericsson et al. (eds.), *Cambridge Handbook*, 623–4.

²⁵ B. B. Price, 'Paired in Ceremony: Academic Inception and Trade-Guild Reception', *History of Universities* 20 (2005), 1–37. Hilde Symoens helped me to identify this source.

²⁶ Owing to its statutory character, English apprenticeship has been especially well studied: C. Brooks, 'Apprenticeship, Social Mobility and the Middling Sort, 1550–1800', in J. Barry and C. Brooks (eds.), *The Middling Sort of People: Culture, Society and Politics in England, 1550–1800* (Houndmills: MacMillan, 1994) 52–83; I. Krausman Ben-Amos, *Adolescence and Youth in Early Modern England* (New Haven: Yale University Press, 1994), chs. 4–5; J. Lane, *Apprenticeship in England, 1600–1914* (London: UCL Press, 1996); for recent contributions on the rest of Europe, see B. De Munck, S. L. Kaplan, and H. Soly (eds.), *Learning on the Shop Floor: Historical Perspectives on Apprenticeship* (Oxford: Berghahn, 2007). See also W. Smits and T. Stromback, *The Economics of the Apprenticeship System* (Cheltenham: Edward Elgar, 2001).

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as one single programme, rather than a series of modules, each providing access to another level of competence and expertise. A subdivision of the training process into separate stages can, for instance, help explain the discrepancies, often observed, between the length of training programmes prescribed in various pre-industrial countries for roughly similar jobs, as well as the fact that many apprentices bailed out of their training programme before completion. Why should it take an apprentice tailor in England seven years to complete his training, in the Dutch Republic three to four years, in the Spanish Netherlands a mere two, but in Paris three to six years?²⁷ On the basis of the foregoing it is easy to see that the most likely answer is that English apprentices who completed the full seven years must have reached a much more advanced level of expertise than their Dutch counterparts after two. But then again, even in the Low Countries the nominal course was seldom seen as sufficient preparation for the independent exercise of a skilled craft. Most Dutch tailors' guilds, for example, formally required two years of experience as a journeyman before admission as a master. The masters of the Amsterdam tailors' guild were on average thirty years old on admission. All this suggests that a complete training took much longer than the number of years specified in the regulations, which must be read as the minimum time to develop a specific and locally defined set of necessary skills.²⁸

The comparison with the university is illuminating in another respect. As in any training programme, a lot of people dropped out on the way. Of almost 2,000 carpenters' apprentices in London between 1540 and 1589, only 40 percent became free of the City, hence entered the corporation. A staggering 15 percent died during their apprenticeship, while the largest number, 45 percent, were recorded as 'gone', that is, disappeared, either into another trade or to set up shop in a non-incorporated community.²⁹ In Bristol the rate of attrition was slightly lower, but there, too, half the apprentices failed to become masters, at least in the local corporations.³⁰ Data for other English towns suggest the same pattern.³¹

²⁷ B. Panhuysen, Maatwerk: kleermakers, naaisters, oudkleerkopers en de gilden (1500–1800) (Amsterdam: Stichting beheer IISG, 2000), 140; H. Deceulaer, Pluriforme patronen en een verschillende snit: Sociaal-economische, institutionele en culturele transformaties in de kledingsector in Antwerpen, Brussel en Gent, 1585–1800 (Amsterdam: Stichting beheer IISG, 2001), 268; S. L. Kaplan, 'L'apprentisage au XVIIIe siècle: Le cas de Paris', Revue d'histoire moderne et contemporaine 40 (1993), 450.

²⁸ Panhuysen, Maatwerk, 156, 302.

²⁹ Rappaport, Worlds, 313 (table 8.7).

³⁰ I. Krausman Ben-Amos, 'Failure to Become Freemen: Urban Apprentices In Early Modern England', *Social History* 16 (1991), 167.

³¹ P. Wallis, 'Apprenticeship, Training, and Guilds in Pre-industrial Europe', paper presented at the XIVth International Economic History Congress, Helsinki 2006.

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Still, the numbers involved in apprenticeship were impressive. Rappaport estimates that in sixteenth-century London, roughly 10 percent of the population were apprentices.³²

There is evidence, discussed in Prak's chapter in this book, to suggest that specific craftsmen trained apprentices in specific skills. Some masters were no doubt better teachers, or, more important, perceived as better practitioners, and could therefore also command higher training fees. These varieties in the supply of skill training created problems, discussed in Epstein's chapter, because of the fact that masters could only gradually recoup the costs of their investment of time and effort in the apprentice's training, and would therefore refuse to make that investment unless they could be reassured that the apprentice would serve the whole length of his (or her) contract. Guilds' apprenticeship arrangements were designed to overcome these externalities.

Nonetheless, there were areas where guild regulations seem to have had a negative impact on human capital formation. The most obvious was, no doubt, gender. In general, guild membership was heavily tilted towards males, but this was especially true in craft guilds. Some of them, particularly in Germany, explicitly excluded women from membership, but even where this was not stated in so many words, the male domination of guild membership speaks volumes.³³ Other exclusion mechanisms might also apply, such as those based on origin and religion. Masters' sons would receive preferential treatment. Religious discrimination often worked through local citizenship regulations; citizenship in most towns was a prerequisite for membership of a guild.³⁴ The available evidence suggests, however, that the net effects of discriminatory rules against aliens and religious minorities were limited.³⁵ Direct descendants

³² Rappaport, Worlds, 232.

³³ For references to the extensive literature, see C. Crowston, 'Engendering the Guilds: Seamstresses, Tailors, and the Clash of Corporate Identities in Old Regime France', French Historical Studies 23 (2000), 342n7; S. Ogilvie, 'How Does Social Capital Affect Women? Guilds and Communities in Early Modern Germany', American Historical Review 109 (1994), 325–59; S. Ogilvie, 'Women and Labour Markets in Early Modern Germany', Jahrbuch für Wirtschaftsgeschichte 2004/2, 25–60; as well as S. Ogilvie, A Bitter Living: Women, Markets, and Social Capital in Early Modern Germany (Oxford: Oxford University Press, 2003).

³⁴ P. Lourens and J. Lucassen, "'Zunftlandschaften" in den Niederlanden und im benachbarten Deutschland', in W. Reininghaus (ed.), *Zunftlandschaften in Deutschland und den Niederlanden im Vergleich* (Munster: Aschendorff, 2000), 11–43; Maarten Prak, 'The Politics of Intolerance: Citizenship and Religion in the Dutch Republic (Seventeenth to Eighteenth Centuries)', in R. Po-Chia Hsia and H. F. K. van Nierop (eds.), *Calvinism and Religious Toleration in the Dutch Golden Age* (Cambridge: Cambridge University Press, 2002), 159–75.

³⁵ The almost universal discrimination of Jews in early modern Europe is an obvious and important qualification of this general observation.

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of guild members were usually a minority of total membership; with some well-known exceptions, religious discrimination rarely determined patterns of craft labour migration and, by implication, of apprenticeship.³⁶ This raises questions about the guilds' role in the discrimination against female workers: how could it be so effective - or was it merely reinforcing other, possibly more significant social mechanisms?

Alternatives to guild-based apprenticeship nonetheless did exist, and especially for women they were of vital importance.³⁷ There was first of all the family. Many teenagers must have received their first taste and experience of a craft while watching and helping their parents at home, before entering their apprenticeship with a non-family master. This would explain why, in many guilds, masters' sons could be apprenticed for a shorter period and against reduced rates: they were assumed to have already mastered some of the basic skills at home. At the same time, the fact that only a minority of craftsmen followed in the footsteps of their parents suggests that the family should not be overrated as a source of training.³⁸ Charitable institutions constituted another alternative. In Paris, the Hôpital de la Trinité already provided craft training in the sixteenth century, partly through masters in its own employment and partly by placing orphan boys and girls with ordinary guild masters.³⁹ In Amsterdam, on the other hand, the Civic Orphanage – many of whose charges came from artisan families, a reason for the institution to care deeply about their education - provided for skills training by placing the boys with guild masters. For girls, who were usually not permitted to leave the premises unsupervised, the orphanage provided in-house training in knitting and sewing, but it is not entirely clear if these were aimed at productive or household use.⁴⁰ A third alternative form of education was provided by a range of non-guild professional institutions, the best known of which are probably the artist academies

³⁶ S. Cerutti, La ville et les métiers: Naissance d'un langage corporatif (Turin, 17e-18e siècles) (Paris, 1990), 167 (table 10), reproduced in S. Cerutti, 'Group Strategies and Trade Strategies: The Turin Tailors' Guild in the Late Seventeenth and Early Eighteenth Centuries', in S. Woolf (ed.), Domestic Strategies: Work and Family in France and Italy 1600-1800 (Cambridge: Cambridge University Press, 1991), 113 (table 5.3); Crowston, Fabricating Women, 334-5 (figure 7.4); J. M. Montias, Artists and Artisans in Delft: A Socio-economic Study of the Seventeenth Century (Princeton, NJ: Princeton University Press, 1982), 150-2 (table 6.3); Panhuysen, Maatwerk, 169-70; Rappaport, Worlds, 293 (table 8.1); Sonenscher, Work, 107-8. Towns with high rates of family continuity include sixteenth-century Ghent: J. Dambruyne, 'Guilds, Social Mobility, and Status in Sixteenth-century Ghent', International Review of Social History 43 (1998), 37-54.

³⁷ See esp. C. H. Crowston, 'L'apprentisage hors des corporations: Les formations professionnelles alternatives à Paris sous l'Ancien Régime', Annales HSS 60 (2005), 409-41. ³⁸ See note 36.

³⁹ Crowston, 'Apprentisage', 418–27.

⁴⁰ A. E. C. McCants, Civic Charity in a Golden Age: Orphan Care in Early Modern Amsterdam (Urbana: University of Illinois Press, 1997), 70-88.