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Apprenticeship and Training in Premodern England

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Apprenticeship and Training in Premodern England¹

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Abstract

This paper re-examines the economics of premodern apprenticeship in England. I present new data showing that a high proportion of apprenticeships in seventeenth century London ended before the term of service was finished. I then propose a new account of how training costs and repayments were distributed over the apprenticeship contract such that neither master or apprentice risked significant loss from early termination. This new account fits with the characteristics of premodern apprenticeship, as well as with what is known about the acquisition of skills in modern and premodern societies.

Jane Humphries has a similarly positive understanding of apprenticeship, suggesting that it “contributed to the premature exodus of labour out of agriculture that is the hallmark of English exceptionalism.” She emphasises the effectiveness of several self-enforcing aspects of the apprenticeship contract, including but not limited to the activities of guilds in policing them, in buttressing this process at least into the eighteenth century.⁴ By contrast, Sheilagh Ogilvie argues that apprenticeship was mainly a device to exclude competition. Guilds, she suggests, were “neither necessary nor sufficient for ensuring craft skills.” Her position extends a critique of both apprenticeship and guilds that goes back to Adam Smith and beyond.⁵

In this paper I re-examine the economics of premodern apprenticeship, focusing on England between the sixteenth and mid-eighteenth centuries.⁶ The standard account of apprenticeship describes apprentices spending the early part of their time in service receiving training before repaying their masters’ investment by working at below-market (or no) wages for the remainder of their contractual terms. While this two-stage model is a useful simplification for some purposes, and may even come close to the reality of training in the late nineteenth and twentieth centuries, it is seriously flawed as an account of premodern apprenticeship. The problems with the standard account are both conceptual and empirical. The account bears little resemblance to our understanding of how occupational skills are acquired in practice, and it is inherently unsustainable if apprentices’ fail to serve their full terms. Mortality and morbidity rates among apprentices present a

⁴ Humphries, “English apprenticeship”, p. 99

⁵ Ogilvie, “Guilds”, p. 312. See: Smith, *Wealth of Nations*, pp. 222-7; Rothschild, *Economic Sentiments*, pp. 87-112; Swanson: *Medieval Artisans*, p. 115; Earle, *Making*, p. 85.

⁶ After the mid-eighteenth century, English apprenticeship changed noticeably: Snell, “Apprenticeship system”, 313-321. I am also not considering the closely related, but distinct institution of pauper apprenticeship here. This appears to have often occurred when children were younger and with much less emphasis on acquiring a skill: Sharpe, “Poor Children”. Colonial American apprenticeship seems also to have taken on somewhat different characteristics: Grubb, “Statutory Regulation”, 62-63.

significant challenge to this system on their own. Even more significant, given the emphasis on contract enforcement in the literature, is the evidence I present here that apprentices in premodern England quit in large numbers, as I show for London in the 1690s in the first part of the paper.

I therefore suggest an alternative model of apprenticeship that could be sustainable in these circumstances. I argue that training was less intensive and more fragmented than in the standard account. Instead of preceding useful work, apprentices' training occurred in

common core, the terms of service and the manner of its arrangement differed across Europe, governed by a mix of law, custom and individual inclination. The key piece of legislation in early modern England was the Statute of Artificers (1562).⁷ This set out basic national rules for apprenticeship which were largely based around London's existing practices—all householders over 24 years can take apprentices, the term of service should be at least seven years, apprentices should be 24 or older when they finish and so on. The Statute also limited the

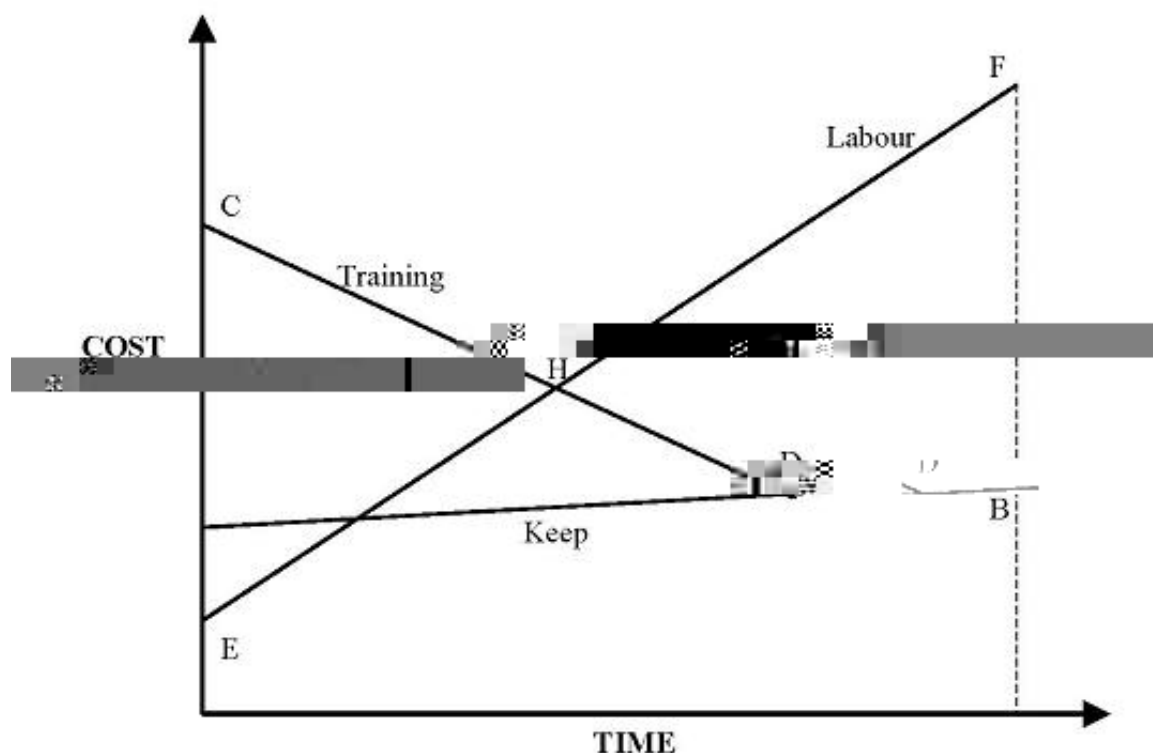
within them, even though, during the seventeenth century at least, all of the major English urban centres were still incorporated boroughs. Indeed, the constellation of rules around English apprenticeship never stopped a number of artisans from ignoring them in practice, although the scale of default is impossible to assess.⁹ Elsewhere in Europe the regulation of apprenticeship varied. In some areas, particularly many German regions, it was more tightly controlled by guilds; in others, such as parts of France and Spain, it largely remained a private contract between apprentice and master.¹⁰

By the seventeenth century in England, apprentices' families often paid a fee or "premium" to the master at the time of binding and gave bonds for their behaviour and honesty; apprentices' clothing and sometimes even their board might also be subsidised by their parents.¹¹ Most apprentices, however, still lived as part of their masters'

to have been more common elsewhere in Europe.¹⁴ When the terms of indentures were broken, guild, civic and other le

form in the 1930s (figure 1).¹⁷ This was a time when contemporary apprenticeship did seem to take this form.¹⁸ As the figure shows, in the early years of the contract the master's investment in the apprentice is greater than the value of labour they receive. The value of the apprentice increases with training until, at point H, he becomes an asset. As R. B. McKerrow, the author of the diagram noted, his "initial value is the area FHDB minus the area CHE. (This ignores risk of death, &c.)."

FIGURE 1. The standard account of apprenticeship



Source: Adapted from: Greg & Boswell, *Stationers' Company*, p. xliii, n.1. I am grateful to Ian Gadd for drawing my attention to this figure

The sequential distribution of training costs and repayment envisaged in this account of apprenticeship presents obvious risks for

¹⁷ Another formal description, based on similar assumptions about the distribution of costs and training, but with board and keep represented as a constant wage, is given in Hamilton, "Market", p. 504 and idem, "Enforcement", pp. 572-3.

¹⁸ Elbaum & Singh, "Economic Rationale", p. 597, 598; Elbaum, "Apprenticeship", p. 343-4.

both masters and apprentices. Early on, apprentices were vulnerable to exploitation by masters who could fail to provide sufficient or appropriate training. Conversely, once trained, apprentices who quit could capture the returns

become freemen or citizens in the town or city where they had trained (table 1). Apprenticeship was the main mechanism through which the freedom of towns was obtained, and becoming a freeman brought significant benefits – settlement and its associated right to poor relief, and the right to work at a trade in the town or city.²² Yet studies of a wide variety of guilds and towns across England have repeatedly found that fewer than half of apprentices became freemen. The contrast with completion rates of over 90 percent in England in the 1920s is dramatic.²³

TABLE 1: Percentage of apprentices who became freemen in England

Location	Date	N	Percentage Becoming freemen
London	c.1450 ¹	4,568	43
	1490-1599 ²	44,000	41
	1633-1660 ³		41
Bristol	1560-1680 ⁴	2,442	30
Norwich	1510-1700 ⁵	5,835	17
Chester	1558-1625 ⁶	183	c.50
Sheffield	1624-1814 ⁷	28,500	47

Sources: ¹ Average of three guilds (Merchant Tailors, 1425-45, 1453-58; Goldsmiths, 1444-1500 Mercers, 1391-1464): Hovland, “Apprentices,” p. 108. ² Fifteen guilds, 1490-1599: Rappaport, *Worlds*, pp. 311-12. ³ Average of five guilds (N not reported): Masons, Carpenters, Stationers, Cordwainers, Drapers: Smith, “Social and Geographical Origins,” pp. 197. Boulton finds the same completion rate for Southwark: *Neighbourhood and Society*, p. 104. ⁴ All trades: Ben-Amos, “Failure,” p.157. ⁵ All guilds: Patten, “Patterns,” p. 122. ⁶ Leather crafts: Woodward, “Sources,” p. 92. ⁷ Cutlers: Unwin, “Apprenticeships,” p. 197.

²² Rules seeking to prevent non-freemen working in English towns were widespread: Dunlop, *English Apprenticeship*, pp. 78-82. See also: Ogilvie, *State Corporatism*, pp. 148-9, 157-8.

²³ Elbaum, “Apprenticeship”, p. 340. See also: Smits and Stromback, *Economics of Apprenticeship*, pp. 27-8.

These data are very far from perfect. They only capture apprentices who entered the freedom of their guild or town, rather than directly measuring completion rates. The process of becoming a freeman involved various costs – fees, gifts or other payments to guilds and urban authorities. While not always large, these served as a disincentive. The benefits it brought were most important to independent artisans and traders; even if they completed their apprenticeships, many aspirant freemen would then have to struggle to gather the resources to establish their own business. Entry to the freedom normally occurred several years after the end of apprenticeship. Most former apprentices presumably filled the gap by working legally as a journeyman while they saved, and many may never have worked in a more independent position that would have made the freedom worthwhile. Hence, freedom rates do not distinguish between apprentices who quit, those who completed but remained as journeymen, and those who completed and then migrated. Nonetheless, these low rates do at least raise the question of whether a significant proportion of apprentices might have left before the end of their term.²⁴

We have limited amounts of more precise information about how many apprentices' left their masters early and when they did so. The only published work on the timing of departure explores early seventeenth-century Bristol, where Ben-Amos found that most of the apprentices for whom a time of departure was recorded left in the first two years of their term (59 of 99). Unfortunately, the sample is small and possibly unrepresentative: departure dates were recorded for only 5 percent of Bristol apprentices, whereas roughly 60 percent of them failed to become freemen.²⁵ For London carpenters' apprentices between 1540 and 1590, the guild recorded their fate, but not the point

at which it occurred: only 39.7 percent were freed. Of the rest, 14.6 percent died and 1.1 percent wed, thus voiding their indenture. The remaining 44.6 percent were simply described as “Gone,” leaving the timing and manner of their departure unknown.²⁶

For London apprentices in the 1690s, it is possible to get a better sense of when apprentices left. By linking tax and guild records, I identified a sample of freemen whose households were recorded in detail in a 1695 tax assessment.²⁷ The apprentices these freemen had taken in the years before 1695 were obtained from guild records.²⁸ I then examined the listings in the assessment to identify which of those apprentices whose contracted terms of service overlapped with the 1695 tax date were actually in residence with their masters at that time. This produced a sample of 166 apprentices bound to 97 masters in a range of London guilds.

Table 2 shows the percentage of apprentices still resident in their original masters’ household, broken down by the time elapsed since their apprenticeship began. Overall, only 56 percent of apprentices were resident with their masters at the time of the tax. The decline over time in the percentage of apprentices who were still in service with their

²⁶ Rappaport, *Worlds*, p. 313.

²⁷ 6 & 7 Wm. & M., c. 6. The details of the tax are discussed in Glass, *London Inhabitants*

original master is clear and significant.²⁹ It is also noticeable that even in the first year of their service a quarter of apprentices were missing. By the seventh year of their term, only 38 percent of apprentices were resident. The scale and timing of their departure suggests that apprentices quit *throughout* their term. It is not the case that apprentices were simply not taking the freedom. Nor is there an obvious cusp, which we might expect if they were leaving after a definable early training period had passed. Freedom records confirm the significance of the pattern of absences in the asse

indications, the 1690s safely predates the period when the guild system in London weakened seriously.³³

Table 2: Percentage of apprentices with original master by year

Year of service	Apprentices (N)	Apprentices present (N)	% with Original Master
1	27	20	74.07
2	31	16	51.61
3	36	26	72.22
4	22	10	45.45
5	21	12	57.14
6	16	9	56.25
7	13	5	38.46
Totals	166	98	59.04

Source: see text.

The levels of absence in Table 2 are, it should be emphasised, an upper bound estimate. As we have seen, some of those who were absent did later become freemen. Some of these apprentices may have been temporarily away when the tax assessment was taken, or deliberately concealed to reduce the tax payable; some may simply have been missed by the assessors. Others would have been working on their master's behalf elsewhere – a normal occurrence for many merchant's apprentices who often went abroad to act as factors for their masters and common in some trades connected to shipping. A few may have lodged elsewhere, although in this period apprentices still usually lived in their masters' households and there is no reason to suspect lodging habits varied over apprentices' terms in a way that might explain

³³ Kellett, "Breakdown"; Walker, "Guild Control"; Schwarz, *London*, pp. 210-11.

the pattern in Table 2.³⁴ The status and role of male servants present in the household listings is another obvious gray area. In addition, there were also a further ten people described as “apprentices” by the tax assessors who could not be identified in guild records. These may have been apprentices who were present “on liking” – the trial period of between a month and a year that was common before formally contracting an apprenticeship – or simply cases missed in the guild records. More definite evidence of this practice is apparent in the five apprentices who were present in their masters household before they were officially bound, one nearly four years in advance of his enrolment. Indeed, they might have been illegally-kept apprentices, although if so it is somewhat surprising that they were described as apprentices to tax assessors.

Apprentices could also be “turned over” to new masters during their term, raising the possibility that some absent apprentices had moved rather than quit. Turning over was only occasionally recorded in guild apprenticeship registers. To obtain some sense of the scale of this, all non-family members listed as resident in masters’ households were compared with lists of apprentices. This identified 18 individuals who had been indentured to different masters but who had since moved.³⁵ As table 3 shows, these apprentices could have been turned over at any stage in their terms. This suggests that roughly 10 percent of all apprentices, or 22 percent of absent apprentices, had left by moving to another master rather than quitting, which fits with the

³⁴ A survey of Depositions and Bills and Answers in the Mayors Court produced evidence of the residence of 58 apprentices in the 1690s. All lived in their master’s home. London Metropolitan Archive (hereafter LMA), CLA/024/05/016, CLA/024/07/81 Because the Court largely heard cases relating to relatively wealthy apprentices, Commissary Court depositions and Old Bailey Sessions Papers for the 1690s were also reviewed. These contained far fewer indications of residence, 8 and 6 respectively, but again all apprentices lived in their master’s home: LMA, DL/C244; www.oldbaileyonline.org (accessed 20 August 2007).

³⁵ The assessors often grouped apprentices and domestic servants under the common label of “servants”. All servants were therefore checked against the apprenticeship lists to see if they had been bound to another master.

excessive correction, abuse, lack of training, and failing to supply food or clothing. Conversely, masters complained about apprentices' running away and refusing to return to their service, being drunkards, attacking them or their family, or embezzling money from the shop.³⁹ Some masters pursued runaway apprentices and succeeded in forcing them to return or else had them punished.⁴⁰ Such formal, and relatively costly, interventions are rare and even then many ended with an attempt at reconciliation. Unsurprisingly, a number of them clearly relate to attempts to recover a portion of the premium paid on binding. These cases, while striking, are likely to have been a small proportion of the total of departures. Court cases only occurred when apprentice or master resisted the ending of the contract. No trace would be left when master and apprentice jointly agreed to end their contract, which was probably the most common way terms ended early. In such situations, legal intervention was unnecessary: "the agreement of the master and apprentice," recorded under his master's hand was enough, as guides for Justices of the Peace made clear.⁴¹ For many masters and apprentices, it must have made sense to end contracts consensually rather than struggle to enforce the original terms.

Leaving their masters could be a positive decision for apprentices. The chance to learn a more suitable or advantageous trade, opportunities elsewhere, inheritances, marriage: all could draw an apprentice onto a different path. In larger cities, in particular, it seems likely that many apprentices always intended to curtail their term after acquiring skills. A few descriptions of their decisions survive. As Ben-Amos describes, one London shoemaker's apprentice, Benjamin Bangs

³⁹ See the records of the London Mayors Court, particularly the Interrogatories and Depositions, LMA, CLA/024/05/001-16.

⁴⁰ Ben-Amos, "Service", 63; Rushton, "Matter in Variance"; Morgan and Rushton, "Magistrate", pp. 64-5.

⁴¹ With slight variation in wording, this is expressed in the numerous editions of the main guide from the early seventeenth century onwards. Compare for example the 1619 and 1742 editions: Dalton, *Country Justice* (1619), p. 74; *Ibid*, [1742], p. 136

quit after three years because he “understood [his] business pretty well;” similarly a Bristol weaver’s apprentice, John Mayes, left after three years to work in the countryside.⁴² As centres of skilled

premodern master artisans were making a loss on many apprentices. The outcome surely should have been a breakdown in the system of training. Yet apprenticeship persisted.

Reinterpreting Apprenticeship

How did apprenticeship survive in the face of death and opportunistic departure? To construct an alternative analysis of apprenticeship that can fit these facts we need to consider both the nature of occupational skills and the organisation of premodern employment and production. In the standard model, it was assumed that training was general, and that it was therefore paid for by the apprentice since he or she will capture the returns through their later earnings, as suggested by standard human capital theory. This is plausible.⁴⁶ Production in most crafts was highly fragmented, giving a wide range of possible employers, and many apprentices would later establish independent businesses. There was little likelihood that apprentices would remain in long-term employment with their master after completion, except in a handful of larger enterprises. Artisans were generally training future rivals not employees—and at the same time were revealing their client, credit and supplier networks to them. In these circumstances, few of the advantages identified to explain modern firms' investments in apprenticeship will apply.⁴⁷

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As this might suggest, a significant proportion of master craftsmen in some crafts and trades did not take apprentices. Many more took only one or two over their careers. Apprentices could have their uses, but they were not essential to many businesses even as a source of cheap labour. Small workshops had limited resources for training at the best of times—and apprentices added a further risk in bad times, for masters remained responsible for apprentices' upkeep even during business slumps or sickness. Clearly, apprentices had good reason to invest in their training; masters much less so. To be fair, apprentices could offer some long-run advantages to their masters. As natural additions to their social, economic and political networks, they might become creditors, collabora

First, it is clear that regarding apprentices as callow youths, of little worth to a business until instructed, is misguided for most of our period.⁵⁰ In early-modern England, apprentices were generally bound in their mid to late teens.⁵¹ From the outset, they could be set to a variety of unskilled yet necessary tasks, such as cleaning, carrying, deliveries, shop-watching and simple preparatory or processing jobs. They might also have some useful skills. Most would have been engaged in productive work in the household or their parent's workshop, farm or shop for years prior to entering service, giving them the chance to acquire skills that would later be useful to their new master.⁵² The most extreme example of this was youths from families involved in the same trade who might well have already obtained craft-specific skills before entering service. Contemporaries' recognition of the value of new apprentices' labour is apparent in official wage assessments from the sixteenth and seventeenth centuries which often included wages for apprentices in the building trades. Although paid to their masters, they underline the point that apprentices' work was worthwhile throughout their term. For example, London tilers' apprentices earned 11d a day without food in 1589, well above the 2.56d. necessary to provide a basic

⁵⁰ It may, of course, be more applicable for pauper apprentices in eighteenth century England, when those bound were often young children who may have had little experience of work.

⁵¹ In late sixteenth-century London, the average age was 17.7 years: Rappaport, *Worlds*, p. XXX. For Bedfordshire children bound in London between 1500-1800, the average age was 17 (n=4,524): Cliff Webb, personal communication. The age of binding was to some extent determined by the existence of city rules preventing freedom before the age of twenty four.

⁵² Ben-Amos, *Adolescence*, pp. 39-48; Ben-Amos, "Failure"; Pelling, *Common Lot*, pp. 110-111; Nicholas, "Child", p. 11w[communicai TDaMany Isoence

diet at that time.⁵³ Apprentices' status should not be confused with their ability.⁵⁴

The second and third assumptions of the standard account, about the early concentration of training and its high costs, are best addressed together. Underlying discussions of apprenticeship are differing views of the expense and difficulty of training in preindustrial crafts and trades. Epstein, for example, maintains that craft skills were complex and hard to learn. By contrast, many others have shared Adam Smith's position that training was quick and simple.⁵⁵ Given what we know of the theory of skill acquisition, it is likely that both views are partially correct: training could be quick and easy for masters, but learning might be hard and long for apprentices. Practising early-modern crafts and trades required a blend of tacit and propositional knowledge. Tacit knowledge is acquired through modelling, imitation, observation and experience. Didactic instruction is insufficient and sometimes ineffective in situations where skilled practitioners find it difficult to articulate how they perform some complex operations; instead immersion in practice is crucial.⁵⁶ Instructing apprentices might thus demand very little time-consuming direct instruction from masters. Instead, the burden of acquiring a craft was put on the apprentice's diligence in observing and particularly practising skills. Of course, this process varied between crafts and individuals, but the speed of learning should not be exaggerated, and it should not be forgotten that apprentices needed to learn commercial as well as craft skills. Some element of instruction was, it seems, expected by apprentices, who did complain about masters who failed to provide

⁵³ Basic budget calculated from Boulton, "Food prices", tables 4, 6; Hughes and Larkin, *Tudor*, iii 40 -42. Wages varied between crafts and locations. Some specify apprentices over an age or level of experience; others include all apprentices. See: Knoop and Jones, "Masons and apprenticeship", p. 358; Minchinton, *Wage Regulation*, 25.

⁵⁴ Smith, "London Apprentices".

⁵⁵ Smith, *Wealth of Nations*, pp. 226-7; Farr, *Artisans*; Ogilvie, "Guilds".

⁵⁶ Polanyi, *Personal Knowledge*, p. 49; Hutchins, *Cognition in the Wild*, pp. 310-111; Keller and Keller, *Cognition and Tool Use*, p. 156; Berry and Zoltan, *Implicit Learning*, pp. 26-8, 129-131; Rogoff and Gardner, "Adult Guidance", pp. 101-3.

training. But it seems unlikely they envisaged intensive guidance that would substantially distract the master from more immediately productive work. This account of how skills are acquired has a further obvious implication: the distinction between periods of learning and periods of production largely dissolves. There are few points at which apprentices were not learning, even if they were not conscious of it themselves.⁵⁷ Lest this seem too optimistic, it should be remembered that given the lengthy fixed minimum term of 7 years for an apprenticeship in England, the period of contracted service—if

array of menial tasks that apprentices undertook would have extended the time it took them to learn the more skilled parts of a trade, but in the short-term this must have significantly increased their immediate value to their master. Throughout their term, apprentices combined useful work with learning, and only gradually moved from unskilled to skilled work.

It is at least suggestive that this analysis has parallels with the findings of modern anthropologists studying apprentice-type learning in traditionally organised crafts today.⁵⁹ They have generally found that apprentices are heavily engaged in productive work from the beginning, with little time dedicated specifically to training. Knowledge gained by apprentices might even be seen as “stolen.” When learning pottery in Japan in the 1980s, one apprentice found herself spending hours cleaning the workshop and preparing clay, literally “earning the right to observe and learn by doing the menial scutwork of the master and the workplace”; direct tuition was almost non-existent, instead she was allowed to observe, practice on a very small scale, and only attempt more complex techniques after a long time in the workshop.⁶⁰ This reliance on a “benign community of neglect” to supply instruction is a common experience.⁶¹ Among apprentice minaret builders in Yemen, for example, “much of learning process involves little or no verbal communication, the apprentice must rely on his/her eyes, ears, and sense of touch to incorporate their Master’s skill into the reproduction of bodily representations of knowledge.”⁶² Instruction is implicit and

Mayors Court Interrogatories on apprentices’ learning experiences between c.1650 and c. 1700: *Making*, 95-100.

⁵⁹ Dilley, “Ways of Knowing”, pp. 33-4; Marshall, “Structural Constraints”, 42-46; Coy, *Apprenticeship*; Lave and Wenger, *Situated Learning*; Simpson, “Apprenticeship”, pp. 158-161 .

⁶⁰ Singleton, *Learning*, p. 14. The description has striking parallels with apprenticeship in Roman Egypt, where one potter’s apprentices were not to try and make pots until they had watched the process for a long time; in the meantime, they were to work as servants in the shop: Westermann, “Apprentice contracts”, p. 306.

⁶¹ Lave & Wenger, *Situated Learning*, p. 93.

⁶² Marchand, *Minaret Building*, p. 138.

fragmented. Questions are rarely posed, and reprimands rather than correction form the majority of feedback to apprentices.

If we take the potential value of apprentices' labour and the nature of their learning together, we find a quite different structure for premodern apprenticeships—one that could thrive amidst high levels of contractual default. Apprenticeship had four characteristics not recognised in the standard account: first, apprentices provided valuable labour services throughout their term, rather than repaying their masters' investment just in the later years of service. Second, any explicit instruction was likely to be delivered in fragments over a long duration. Third, most training was through observation, imitation and practice by apprentices that occurred while they were engaged in useful work—thus even apprentices' learning could even be productive. And fourth, the costs of supplying this training were low enough that they could be met by the value of less-skilled apprentices' work (at times in combination with a premium), even after the costs of their keep. In short, an apprentice's training occurred *in parallel* with their engagement in work that offset the costs of their keep and instruction. Premodern apprenticeship was not a two-stage process of costly training followed by repayment, but a time when work and training were often indistinguishable.⁶³

With work and training intermingled, neither apprentice nor master was likely to lose out substantially when their relationship ended. Apprentices' value to their masters certainly fluctuated, depending on the level of training they received at any point and the value of their labour. They might also be able to advance the training curve through additional payments. As Defoe explained in the early eighteenth century, premiums exempted apprentices from “menial

⁶³ The problems of a two-stage training and work model in a competitive market are discussed in Acemoglu & Pischke, “Beyond Becker”, 118-119.

offices, which were wont to be required of younger apprentices.”⁶⁴ Nonetheless, neither master nor apprentice was ever likely to be at risk of a large loss through opportunism. Inevitably, each did still face risks. For masters, there was the chance of theft, misbehaviour or future competition inherent in any employee. For apprentices, the potential losses from mistreatment or exclusion from the workshop were higher, particularly when a substantial premium had been paid. This supplies a further reason to expect that large premiums were accompanied by a quickening of the training schedule. Similar trade-offs are also implicit in agreements to repay all or part of the premium if an apprentice or master dies or moves; these generally indicate that repayment was only normally expected if this occurred during the early years of the term.⁶⁵

Clearly, this slow training schedule does come at a cost to masters. By putting little effort into apprentices’ training and obliging them to do useful but not instructive tasks, such as deliveries, cleaning, watching shops and the like, the time in which apprentices were most skilful and are thus most productive is reduced. As Epstein predicted “in the absence of credible bans against apprentice opportunism which took the shape of early departure...training would have been less than optimal and would have constrained output.”

any degree of success, at least by the late seventeenth century, and that apprenticeship thrived nevertheless. It is thus hard to accept that guilds primarily existed in order to provide enforcement for apprenticeship contracts. London may perhaps have been exceptional. However, the durability of apprenticeship as a system of training irrespective of the guilds is also apparent from the many examples of apprenticeship existing where guilds did not.⁷⁰ It is hard to avoid the conclusion that guilds were not necessary for apprenticeship to work: co-existence did not imply dependence in this case. As Thrupp noted: “medieval artisan apprenticeship was a product not of gild monopoly, but of the family workshop.”⁷¹

Of course, guilds did *attempt* to enforce apprenticeship contracts and influence the terms they contained. These measures were limited, however, to the area over which a guild had authority. This raises the question of why they sought to become involved with apprenticeship when it could survive without them - and what effect they had on its operation. The answer, as Smith and others have recognised, is that guilds' collective concerns with apprentices largely centred on restricting the numbers of people being trained in order to limit the workforce available to each master and control present and future competition.⁷² It was this anxiety about competition which meant apprenticeship was a concern of all masters, and by extension the guild: apprentice taking was not ubiquitous or smoothly distributed in guilds, but all masters were affected by decisions about labour concentrations in a craft. One

⁷⁰ Loats, “Gender”, pp. 17-18; Nicholas, “Child”, p. 1107; Clark, “Medieval Labor Law”, p. 1108; Epstein, *Wage Labor*, p. 78; Howell, “Guild”; Crowston, “Apprentissage”. Apprenticeship without guilds was also widespread in colonial North America: Hamilton, “Market”, p. 498.

⁷¹ Thrupp, “Guilds”, p. 264.

⁷² Dunlop, *English Apprenticeship*, pp. 45-46, 89; Rappaport, *Worlds*

The attractions of these guild regulations to masters are obvious, and apprentices had little ability to resist such rules. As guilds existed in most major towns, there were few alternative centres of production where high-quality skills could be learned. One implication of the findings here is that the full burden of the arbitrary term of service was only born by a limited number of apprentices, although this included all those who hoped to later work legitimately in the area controlled by the guild; others could and did avoid these costs by departing early. The nature of these concerns also imply that guilds' involvement in apprenticeship might diminish or change in nature in several situations: where their ability to impose limits on apprentice numbers breaks down; if the scale of trade is no longer seen as fundamentally constrained; or if the occupational range of members of a guild becomes so diverse that members are more worried about external than internal competitors. These may suggest further reasons for the relationship between the decline of guilds and apprenticeship in England.⁷⁸

Conclusion

This essay has sought to further the discussion Epstein opened by pointing out that “the economics of preindustrial apprenticeship has been virtually ignored” since Adam Smith. Having shown that levels of early departure among apprentices were almost as high as freedom

enforcing what were, in practice, unenforceable contracts. Like many

I have focused here on premodern England. However, much of the argument about the economics of apprenticeship is likely to be generally applicable across Europe, even though the particular forms of apprenticeship and its relationship to family, trade, corporate law and custom, and guild varied. Apprenticeship persisted in continental towns and regions with weak or no guild infrastructure to sustain indentures; continental masters faced the same general issues of how to instruct apprentices that English masters did; and mortality and morbidity rates alone meant that heavy early investment in training carried significant risks wherever one was based. Unfortunately, quit rates and evidence about the training and working patterns of apprentices are, it seems, as elusive for continental apprentices as they are for their peers in England.⁸³

Preindustrial apprenticeship of the kind analysed here did not seem to survive the economic transitions of the eighteenth and nineteenth centuries. One factor in this in England was the extension of systems of parish apprenticeship, which placed pauper apprentices in a far more dependent and obviously exploited position. But informally structured apprenticeship, without employers concerning themselves greatly in training, will also tend to fail in larger organisations, where the scale of operation is greater, specialization is more extensive, and the distance of master and apprentice extends. This is apparent in some of the ways apprenticeship developed in the later nineteenth century.⁸⁴

⁸³ There are indications that early departure was a problem in a number of locations, including Lyon (Garden, *Lyon*, p. 62), Paris (Sonenscher, *Work*, pp. 109-110), Flanders (Nicholas, "Child", pp. 1128-9; Stabel, "Guilds", pp. 200-201); Vienna (Steidl, "Silk Weavers") and Sweden (Edgren, "Crafts", p. 368-71). Figures vary widely, even for the same location. For Antwerp, completion rates for 17th and 18th century orphans (53 percent-61 percent), and 16th century artists' apprentices (19 percent-27 percent) are low, while almost all 18th century tinsmiths and plumbers finished their terms (95 percent) (De Munk, *Leerpraktijken*, pp. 286-293; Martens and Peeters, "Artists"). Ogilvie finds a large variation in freedom entry rates over time (between 52 percent and 90 percent) in response to changing circumstances in Württemberg: *State Corporatism*, pp. 157-8.

⁸⁴ Aldrich, "Apprentice", pp.20-21; Snell, "Apprenticeship".

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