

CENTRE FOR ECONOMIC PERFORMANCE

DISCUSSION PAPER No. 190

March 1994

**WHATEVER HAPPENED TO APPRENTICESHIP TRAINING?
A BRITISH, AMERICAN, AUSTRALIAN COMPARISON**

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ABSTRACT

This paper examines the development of apprenticeship training in three English-speaking countries where apprenticeship has fared very differently. It declined at an early date in the US in most sectors of the economy; it survived intact in Britain well into the post-Second World War period; and it has survived relatively strongly in Australia up to the present day, though it is now under some pressure. The reasons for this decline are examined and an explanation is preferred in terms of the interaction between the institutional supports and the ability and need felt by employers to sustain the system. Where apprentice training survives in these English-speaking countries, there is much to commend its continued existence. However, to survive in the future or to be revived, it needs significant institutional and government support and incentives or compulsions for employers.

This paper is produced as part of the Centre's
Programme on Industrial Relations

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WHATEVER HAPPENED TO APPRENTICESHIP TRAINING? A BRITISH, AMERICAN, AUSTRALIAN COMPARISON

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This paper examines the training of blue collar workers in three English-speaking countries, chosen because of the historical similarities in the origins of their training systems.¹

It focuses on apprenticeship training because historically this was the main formal method of manual worker skill formation in each country. For the purposes of analysis it also concentrates on the manufacturing sector, historically one of the main areas of apprenticeship training. However, in these three countries, apprenticeship has fared very differently: it declined at an early date in the US in most sectors of the economy; it survived intact in Britain well into the post-Second World War period; and it has survived relatively strongly in Australia up to the present day, though it is now under some pressure. The experience of these countries is in contrast to the German-speaking countries where apprentice systems have grown in coverage and remain very strong to the present date. Though apprenticeship is the main focus of analysis, it is hoped that a consideration of this method of training may allow broader conclusions to be drawn about skill formation more generally.

The paper is divided as follows. The first section provides some definitions and a framework of analysis. Three sections then briefly trace the development of apprenticeship training in each country. A further section seeks to explain the course of apprenticeship training and to investigate what has taken or is likely to take its

place in each of the countries. In the final section implications are considered and conclusions are drawn.

Training arrangements

Apprenticeship is here defined as a method of employment and on-the-job training which involves a set of reciprocal rights and duties between an employer and a trainee (usually a young person): the employer agrees to teach or cause to be taught a range of skills, usually of a broad, occupational nature; in return the apprentice agrees to work for an extended period of time at a training wage which by custom is relatively low compared to the skilled worker rate, but which normally rises on an annual basis until the term of the apprenticeship is completed. A contract between the employer and the apprentice usually exists which may be in the form of a legal indenture, a formal agreement, or an informal understanding.

For the purposes of analysis we would distinguish a number of different methods whereby training may be organised and delivered. In the first place, training can be coordinated by market mechanisms. In other words, market forces of supply and demand determine training decisions, such as the decisions to take on a trainee or to become a trainee; and there is mobility of workers, both trainees and trained, within the external market place. Second, training can be coordinated within the firm or organisation by administrative mechanisms. In other words, the amount and type of training are determined according to administrative criteria and needs within the internal labour market of the firm. External price signals are less important and the expectation is that there will be less external mobility. Third, training can be coordinated and funded by the state and provided within schools and

educational institutions and financed in large part by government allowances. In this case training is likely to be of a more general nature and usually needs to be supplemented by work-based experience.

This simple threefold typology may be further elaborated and developed. There are other, less common, methods of training which might be included e.g. patrimonial training within the family, such as is to be found in many small businesses; and interfirm arrangements where a group of firms combine together to provide training. There are also further distinctions which may be made within each of our three main categories. Thus, there are different types of market arrangements. Some markets for skill formation may be largely unorganised and competitive in the classical free market sense. In these markets, training decisions are mainly shaped by supply and demand and price signals. The expectation is that attachment between trainees, workers, and firms will usually be short term. Other markets may be more organised and regulated. In this latter category we would include what Kerr referred to as guild or craft markets where customary practices and intermediate institutions, such as trade unions and employers' associations, regulate market forces.² The traditional apprenticeship clearly approximates to this category. Firms may also differ in that some, to use Osterman's distinction, may have 'industrial' internal labour markets, with highly defined jobs and formal rules, such as seniority, governing the status of employees and access to training; while others may have 'salaried' internal labour markets, with more flexible jobs and less rule-bound conditions.³ Industrial internal labour markets equate to the kind of highly constitutional systems which exist for blue collar workers in large unionised firms in the US; salaried internal labour markets are more like those which cover many white

collar, professional, and managerial employees, or those which are said to exist for employees in the large firm sector in Japan. Finally, the degree of state involvement in training may also differ, in that it may, on the one hand, be essentially auxiliary and supportive of market- or firm-based training arrangements or it may be highly interventionist and directive in nature. Of course, each of these is an ideal type, and pure forms will rarely be observable in the real world where different arrangements will usually coexist. However, not all forms of training are compatible with one another and, as we will see, one may undermine and displace another.

Apprenticeship usually partakes of a number of these modes. Thus, it is very clearly a system based on occupational markets which shape apprenticeship rules and constitute the job market for skilled workers. More competitive forces of supply and demand also influence apprenticeship training e.g. they influence the employer's decision to take on an apprentice, the young person's decision to be an apprentice, and the starting wage of the apprentice. Apprenticeships are usually served within the one firm and so, for a period of time at least, the apprentice is a part of the firm's internal labour market. This internal labour market may span a range between the industrial and salaried: the apprenticeship may be largely bound by rules or it may be a less contingent and closer relationship. Apprenticeship systems may also overlap with state coordination of training in that apprentices may attend state-funded educational institutions and the apprenticeship itself may be subject to certain legislative requirements.

This paper considers how apprenticeship training has persisted or changed over the years in these three countries, and what alternative arrangements have or may take its place.

The development of apprenticeship training in Great Britain

In all three countries apprenticeship was traditionally the main method of skill formation for manual workers. Either the worker did an apprenticeship or received little formal training. Non-apprentice workers usually acquired whatever skills they needed more or less informally on the job.

In Britain the origins of apprenticeship go back to the guild system and artisanal trades such as building and printing.⁴ Traditionally the apprenticeship was of the domiciliary kind where the youth (invariably male) lived in with the master who agreed to teach him the trade in return for productive labour. By the mid nineteenth century, this form of apprenticeship had more or less died out and been replaced by the live-out apprenticeship. This reflected the growth of larger firms and a more arm's-length waged relationship within the market. By the late nineteenth century legal indentures had almost died out and been replaced by formal or informal agreements binding the parties for between five and seven years. By then apprenticeship had spread from the artisanal trades to the newer metalworking industries of engineering and shipbuilding and at the end of the nineteenth century it also spread to plumbing and electrical work. This suggests that apprenticeship had much to commend itself to the parties concerned. For employers, it performed real economic functions: given low apprentice wage rates and productive output, it was a cheap, and potentially profitable, method of training; given built-in incentives to complete the apprenticeship, it facilitated investment in workers who were potentially mobile; given the widespread coverage of the system in many trades, it meant that employers had some check on 'free riding'; and given notions of occupational standards, it ensured a supply of labour with recognisable skills. Moreover it was

supported by the craft unions which saw it as a way of controlling entry into their trades and regulating other aspects of employment, though alone they were usually not strong enough to enforce apprenticeship rules.

The apprenticeship was usually served within the one firm (though there were some so-called migratory apprenticeships), but it was market-orientated in that training was supposed to be in all-round skills which were externally marketable. This suited all the parties concerned. It suited the apprentice and his family who knew that the youth would have wider job opportunities. It suited the employer who was dependent on craft production methods and required genuine craft skills. It also suited other employers who could subsequently acquire such skills in the market. In addition, it suited the trade union since a long period of training in all-round skills restricted the supply of labour, rendered their members mobile, and provided a support for wage rates. In Britain the system was supported from the late nineteenth century onwards by the development of collective bargaining of a multi-employer nature. This allowed for a measure of union monitoring and enforcement of rules governing apprenticeship. However, it should be stressed that in the British context apprenticeship was given little state support and government intervention was minimal.⁵

At various times in different industries, apprenticeship system came under strain. In the late nineteenth century it was subject to pressure of technological change which made the traditional seven or five year period less necessary in industries where there was a growing division of labour e.g. the footwear, papermaking, and furniture trades. During the First World War, it was subject to pressures of dilution as non-time-served men and women were upgraded and as

firms failed to take on apprentices. During the depression of the interwar years, it also came under strain as many employers used apprentices as cheap labour and provided only narrow training.⁶ During the Second World War, it again came under pressure from dilution, upgrading, and failure to take on apprentices. Again, however, this was temporary and, in the first two decades after the war, apprenticeship training remained the main formal method of skill formation for manual workers.

Of course, over time there were changes in the system of apprentice training. The period of training was gradually reduced during the course of the twentieth century from seven to five and in some trades three years. Before the First World War, apprentices started to attend local government provided night school. By the Second World War a small, but growing number, were allowed day-release, and this and block release became common after the Second World War. Also a growing number began to sit examinations and to receive formal qualifications, certified by educational institutions.

Apprenticeship training was the subject of periodic criticism, and this grew from the mid-1960s onwards. The main criticisms were: that it involved a large amount of unnecessary time-serving and time-wasting rather than training to standards; it was often of a narrow nature not suited to the needs of modern industry; it perpetuated demarcations between trades; and it was exclusive in that it was restricted to young male workers in certain trades.⁷

In these circumstances there began a series of reform initiatives within industry and some major interventions by government. A small, but growing, number of employers and training institutions became interested in training to standards,

modular methods of training, and improvement of off-the-job training in colleges. The 1964 Industrial Training Act, and the levy-grant and Industrial Training Board (ITB) system which this introduced, supported apprenticeship training and also promoted its reform. The ITBs sought to spread the costs of training (including apprenticeship training) and to extend formal training beyond the apprentice trades. They also sought to develop new modular methods of training and set new standards for apprenticeships. Through the 1970s and into the 1980s reforms on these lines were gradually implemented and modular and competency training began to replace time-serving. However, the system was not fundamentally reformed and by this time it was being overtaken by other major changes affecting youth training in Britain.⁸

With rising unemployment from the mid-1970s and the political pressures which this caused, governments introduced a series of schemes to combat youth unemployment and to provide training. The main development was the Youth Training Scheme (YTS) introduced in 1983 and now called Youth Training (YT). This was a one-year, from 1986 two-year, system of training, under which the government provided the funds and employers or other training agents provided the training. The young persons were not apprentices with an employment status but trainees with a government allowance. There was no compulsion on employers to enter the scheme and often there was a dearth of good training places; by contrast, from the late 1980s onwards, there was a compulsion on unemployed youth to accept training places or lose government benefits.

The advent of YT(S) put training on the agenda of many firms which had previously given it little attention and spread formal training to young people who would never have done an apprenticeship. On the other hand, the schemes were

largely intended to deal with problems of youth unemployment and much of the training has been of a low level. Some firms which traditionally had apprentices replaced their programmes with YT trainees. Others used YT as a screening device and later upgraded some trainees to apprenticeship status. Simultaneously therefore YT both supported apprenticeship training by providing subsidies and undermined it by providing a state funded alternative.

Other government interventions in the vocational education and training system from the early 1980s onwards have had a profound, though often contradictory, effect on the British schooling and training system.

In terms of schooling, Conservative governments have sought simultaneously to raise academic standards and to introduce a greater vocationalism into education, though, according to critics, without any significant increase in funding to accomplish these two objectives. They have encouraged staying on at school (though this is still low by international standards), but have in practice done little to change the basically academic system of examinations. It is therefore debateable whether the school to work transition process has been improved. It is certain that nothing has been done within the school system to support apprenticeship training.

In terms of training, Conservative governments have pursued a market deregulatory approach. The Thatcher government repealed the interventionist Industrial Training Act and abolished most of the mandatory ITBs and the levy-grant-exemption system. In the process it also reduced trade union involvement in, and monitoring of, training arrangements. This has been replaced with a private-sector, 'employer-led' system of Training and Enterprise Councils (TECs), locally based groupings of employers, charged with coordinating training locally and spending

central government funds on YT and training measures for the adult unemployed. In keeping with its free market ideas and with the aim of pricing young people into jobs and training, the government pursued various measures to reduce youth pay and allowances. In keeping with its ideas on greater choice, it encouraged private providers and experimented with vouchers for trainees. More recently, it has initiated a national system of vocational qualifications under the National Council for Vocational Qualifications. Under this, employer dominated 'lead bodies' are drawing up a national framework of standards based on 'competencies' rather than time serving. The intention is to create a national system of portable qualifications, though these will be the subject of local employer testing. According to critics, the standards which are being established are often low and the range of skills narrow.⁹ Moreover, given the general nature of the qualifications and the lack of any compulsion on employers, there may well be an incentive to 'free riding' unless employers can make the training sufficiently firm specific to prevent portability.

This set of government interventions from the early 1980s onwards has done little to support the traditional apprenticeship system. Indeed, cumulatively, they have served to undermine it. Thus, taking manufacturing apprentices as a percentage of manufacturing employment, the ratio which had already fallen by 31 per cent between 1969 and 1974 fell by a further 54 per cent between 1981 and 1987.¹⁰ Thus, Britain now finds itself with a very mixed and uncertain system of skill formation: deteriorating occupational labour market training; a move towards unregulated markets; a simultaneous attempt to develop interfirm provision through the TECs; a move towards internal labour markets, though this is uneven and incomplete;¹¹ more vocationalism within schools, but without a real system of school-based

training; and a move towards greater state intervention, in terms of funding and compulsion on the unemployed to take up training places, but without any commensurate compulsion on employers.

The US

In the colonial period the US inherited from Britain a system of craft apprenticeships which were the main formal method of training for manual workers well into the nineteenth century. However, these came under increasing pressure in the course of the nineteenth century and, by the early twentieth century, the traditional occupational apprenticeship had declined in most areas other than construction, printing, and shipbuilding and in some metal working trades in a few large urban centres.¹²

Elbaum has recently described how the traditional apprenticeship declined in the US because it lacked the efficiency advantages of the apprenticeship system in the UK.¹³ In the context of high levels of geographical mobility and employment opportunities, it was difficult for American employers to enforce apprenticeship rules and to prevent apprentices walking off with their employer's investment. Occupational training markets, therefore, ceased to operate effectively and to provide sufficient economic benefits for employers. Jacoby has also described how, through the nineteenth century, the apprenticeship system declined in the US as, during good periods when labour mobility was high, employers found it increasingly difficult to make apprentices complete their terms. Some employers tried to remedy this with elaborate, but not very successful, bonding systems. By contrast, in bad periods, employers found it burdensome to keep on apprentices and felt that their right to

hire and fire was trammelled by apprenticeship rules. This situation led to conflict between employers and unions. In this context, from the late nineteenth century onwards, the traditional apprenticeship in the US was abandoned by most employers and, where it survived, it was transformed into an institution which existed because unions could impose apprentice rules on employers in industries such as construction and printing.¹⁴

When viewed in comparative historical perspective, three other factors should be added to explain the decline of apprenticeship training in the US. First, American employers could look to skilled immigrant labour entering the country, especially from Britain, Germany, and other northern European countries where apprenticeship training systems were strong. As the kinds of skills of immigrants began to change at the beginning of the twentieth century so employers had to turn to other strategies. Second, the development of mass production systems in large US manufacturing firms had a profound effect from the late nineteenth century onwards. These depended on well educated and trained managers (provided by the growing tertiary education system), but could be operated with semi- and unskilled production workers. Third, in the US, not only were unions weaker, but multi-employer bargaining was also less widespread than in the UK. Hence, there was missing in most sectors of the economy an important institutional support for apprentice training and a way of enforcing collective employer provision.¹⁵

Of course, skilled manual workers were still required in manufacturing industry. In the US context, small and medium firms resorted to poaching, immigrant labour, and upgrading informally on the job. From the early twentieth century onwards they also looked increasingly to training provided by expanding

high school and college level educational institutions. Large firms, producing for growing mass markets, using specialised mass production techniques, and pursuing a greater division of labour, adopted an internal labour market strategy. Firms, such as Ford, GE, International Harvester, and Westinghouse, established their own schools, where workers (sometimes called apprentices) were trained in skills which were often more specific to the firm.¹⁶ When these large companies were unionised, from the late 1930s, apprentice training arrangements often came to be organised bilaterally by the employer and the union and were set down in company collective agreements. Access to training was in large part determined by administrative criteria, especially seniority; training was a combination of on-the-job learning and in-house and college-based instruction; and at the end of the training period, because of the seniority accrued, the trainee was likely to stay with the firm. This system had the advantage that training was done in a way that was efficient for specific company production systems. However, it had the disadvantages that it could be narrow - training was for the job to be done, in line with the job-territory rules of the 'industrial' internal labour market; the period of return on investment could be relatively short, because of the age of the apprentice (30s - 40s); and, from a broader social perspective, the system excluded workers who were not insiders in the internal labour markets of big firms.

Thus, in the non-union sector, training for skilled work was and still is provided by a combination of informal on-the-job learning and varying degrees of formal training and college-based instruction. It is mainly in unionised parts of the construction industry that the traditional occupational apprenticeship still persists and a form of in-house apprenticeship also exists in some large unionised manufacturing

companies. At the present time, there is some talk about (re)introducing apprenticeship training in the US, the prospects for which are considered in the final section.¹⁷

Australia

Australia also inherited a system of apprenticeship training from Britain.¹⁸ However, as in the US, by the late nineteenth century, the apprenticeship system in Australia had come under great pressure. Legal indentures had largely died out and been replaced by agreements of varying degrees of formality. Moreover it was becoming increasingly difficult to enforce apprenticeship rules. In part this was because of technological change which made the traditional period less necessary. As in the US at this time, it may also have been difficult to enforce apprenticeship rules in a situation where immigration and labour mobility were high. In an economy where cyclical fluctuations were pronounced, in times of economic prosperity, apprentices quit their jobs, and, in times of depression, employers were reluctant to take on and train apprentices.

However, apprentice training survived in Australia and prospered; and, of these three English-speaking countries, it is in Australia that it has remained the strongest. In 1990 approximately 23 per cent of all employed 15 to 19 year olds in Australia were doing an apprenticeship.¹⁹ A rough calculation of total apprentices as a percentage of the employed labour force may be made for various years from the late 1970s onwards. This provides a figure of just over 2 per cent for Australia, less than 1.5 per cent and declining for Great Britain, and around 0.25 per cent for the US.²⁰ For the metal working industries, apprentices represented roughly 10 per cent

of employment in Australia, 3 per cent in Britain, and around 0.5 per cent in the US.²¹ By international standards the Australian figure is high and is surpassed only by German-speaking and related countries (Germany, Austria, Switzerland, and Denmark) where apprenticeship also covers a broader range of occupational groups.²² If manufacturing alone is considered, Australia in the mid-1980s had a slightly higher proportion of manual worker apprentices (10.6 per cent of all manufacturing employees in Australia as opposed to 10.1 per cent in West Germany).²³ A number of factors combined to ensure the survival and growth of apprentice training in Australia.

The apprenticeship system suited the product and labour market situation of Australian employers. In manufacturing industry, in the early twentieth century, given that product market size was limited and much work was of a small batch, jobbing, or repair nature, scope for capital substitution was low, and what was required by employers were all-round, adaptable skills such as were produced by the apprenticeship system. Firms, which were often small in size and with weak managerial hierarchies, were not for the most part able to develop internal labour market systems of training. The external labour markets in which Australian employers operated were not as subject to mass immigration as in the US in the late nineteenth and early twentieth centuries and, though mobility was high, it was for the most part within a few relatively concentrated urban labour markets. In these circumstances, apprenticeship continued to perform a valuable economic function facilitating investment in training and providing a good supply of workers with all-round, recognisable skills.²⁴

Another major support for apprenticeship training in Australia was the role of the state and the development of a distinctive industrial relations system. From the early twentieth century, the creation of a system of compulsory arbitration and legally-binding awards served to restore and codify apprenticeship rules and make them legally enforceable on employers. As this extensive and elaborate award system developed, it laid down, for each major trade, rules on the numbers, conditions, and wages of apprentices. These awards were either regional or national and acted as a proxy for industry-wide bargaining and a form of market-wide regulation. The award system also served to strengthen trade unions and in this way provided further institutional support for apprenticeship.²⁵

In Australia the state also played an important role in two other respects. First, the largest employers in Australia were federal or state institutions such as the railways and public utilities. In a spirit of public service and a monopolistic market situation, these employers felt obliged and able to support apprenticeship training.²⁶ Second, from the beginning of the twentieth century onwards, Australia developed a strong system of technical institutions where trade courses were taught and which apprentices attended in relatively larger numbers than their counterparts in the UK and the US. Because of the factors cited above this did not displace but rather complemented, apprenticeship training. To this day, the system of Technical and Further Education (TAFE) institutions is prominent in Australia and plays a major part in apprenticeship training.²⁷

It is true that in certain periods the system of apprentice training in Australia came under pressure. During the two world wars, it was subject to pressures of dilution and upgrading on the job. During the depression of the interwar years, it

also came under pressure as many employers used apprentices as cheap labour and failed to train. After the Second World War, the apprenticeship system came under pressure from immigration. Before the war, immigrants into Australia had been mainly from the UK, and British craftsmen could be easily absorbed into the Australian system. After the war, the potentially disruptive effect of higher levels of immigration into Australia, from a broader spread of countries, was regulated by the award system and the Tradesmen's Rights Regulation Act. This legislation, passed in 1946 at trade union prompting, established a system for testing the craft skills of immigrants.²⁸

Of course, over time there were changes in the system of apprenticeship training. As in the UK, the period of training was reduced from seven to five or three years; night school and subsequently day and block release became an integral part of the system - before this occurred in the UK. All these changes were codified in the award system. As in the UK, from the 1960s onwards, there was some questioning of apprenticeship training. Rather more slowly, through from the 1970s and into the 1980s, these criticisms started to be acted upon: modular- and standards-based training began to replace time-serving and off-the-job training in colleges was improved.²⁹

The more recent direction of change and reform of training in Australia has had certain similarities to the UK, but also critical differences and until now it has not undermined the traditional apprenticeship system to the same extent.

With rising unemployment, Australian governments in the 1980s introduced schemes to combat youth unemployment and to provide training for those who might otherwise not receive any. However, the state-sponsored Australian Traineeship

Scheme (ATS) has not been the mass scheme which YT(S) has been in the UK. The ATS provides less subsidy to employers; participants are waged employees of the firm and not trainees on a government allowance; and the scheme has mainly covered areas where apprenticeship training never existed such as female clerical work. Simultaneously the government has also subsidised apprenticeships.³⁰ Like Britain, Australia has recently started to create a system of national vocational qualifications based on competencies and output standards rather than time serving. It is proposing to introduce a system of Australian Vocational Certificates (AVCs) which will provide an integrated national framework of qualifications and career pathways. However, in the Australian case, trade unions have been closely involved in the process and apprenticeship is likely to remain a key part of the system.³¹ The Australian approach has been more to build on its existing system, and it is only in the metal trades that there has been a significant decline in apprentice numbers in recent years.³²

Very important in Australia have been recent developments in the award system and the process of so-called award restructuring and enterprise bargaining. Under this, wages and conditions have been redesigned to provide for broader job bands and to encourage multiskilling within these bands. The intention has also been to create new career job paths and related pay structures. In some cases, this has been done through enterprise bargaining, and, where this has happened, this may well encourage stronger internal labour markets and related training arrangements. In other situations, award restructuring has taken place at industry level e.g. in the metal industry where both employers and unions support the process. In this and other cases, apprenticeship remains a part of the restructured awards and broader

jobs require a broad basis of skills which apprenticeship training can provide. In this sense, the reform of apprenticeship training in Australia has been very much driven by broader industrial relations reform in a way that it has not in the US or in the UK.

Under Labor governments, Australia has not gone down the free market, deregulatory road of the UK where the apprenticeship system is declining, in part because of this policy. Indeed government intervention in the form of the TAFE system remains strong and in 1990 the government introduced the Training Guarantee Act which compels employers to spend a certain amount of payroll on training which may include apprenticeship training. Thus in Australia, the traditional apprenticeship has for the most part remained quite strong and has been supplemented by greater state intervention.

Discussion

There are a number of possible explanations for the diverse fate of apprenticeship systems in these three countries. A first set of explanations might focus on the supply side and on apprentices and potential apprentices. For example, it could be argued that participation rates in schooling and the availability of other forms of education and training have an effect on apprenticeship uptake. Where participation rates are high and further educational opportunities are available, this may have a negative effect on the uptake and quality of apprenticeships. In this respect, earlier higher participation rates in the US may have contributed to the decline of apprenticeship training in that country relative to the UK and Australia in the early twentieth century. The more recent increase in participation in Britain may similarly have contributed to the decline of apprenticeship training in that country

over the last 20 years. However, there are serious problems with such an explanation. It does not really fit the chronology for the US where much of the decline in apprentice training occurs before high levels of participation are achieved, and, in terms of the comparison between Britain and Australia, it does not square with the fact that participation rates in Australia are higher than in Britain, but apprenticeship uptake is also higher.³³ (The case of Germany also suggests that high participation rates may simply improve the standard of entrants to apprenticeships.)

A second and more useful set of explanations might relate to the price of apprentice labour and the return on the investment in an apprenticeship. There are a number of interrelated arguments here: one is that, where apprentice wages are high relative to skilled workers wages, employers will not take on apprentices because of the high cost of training; another is that, where apprentice wages are low relative to the wages of other young people, this will raise foregone earnings and act as a disincentive to the potential apprentice; a third argument is that where the lifetime differential between apprenticed and non-apprenticed workers is low, this will also be a disincentive to doing an apprenticeship.

Unfortunately, we do not have the kind of historical evidence adequately to explore these hypotheses. What can be said is that, in the late nineteenth and early twentieth centuries, apprentice pay relative to skilled workers wages were probably higher in the US than in Britain and high apprentice rates in the US may have contributed to the decline of apprentice training in that country.³⁴ Certainly union-negotiated rates for mature apprentices in US manufacturing in the postwar period have been high. In the UK, apprentice-craftsmen differentials narrowed during and after the Second World War and, over the postwar period, this may cumulatively

have had a negative effect on apprenticeships.³⁵ However, in Australia, apprentice-craftsmen differentials have probably also narrowed over the course of the twentieth century and especially after the Second World War, but this has not had such an adverse effect on apprenticeship numbers. In part this might be explained by the fact that in Australia there have been various schemes whereby the government has subsidised apprenticeships and hence maintained their appeal to employers.

The relationship between apprentice wages and those of other young workers is also difficult to ascertain historically. Wages of apprentices relative to other young people may historically have been low in the US and this may have contributed to the decline of apprenticeship in that country.³⁶ A likely widening of earnings differentials between apprentices and other young people in the UK in the postwar may have had a negative effect on apprenticeship uptake. However, again Australia poses a problem in that there also this differential probably widened, but without a decline in apprentice numbers.³⁷ Equally, in terms of age wage profiles, these are probably steepest in the US for skilled workers and flattest in Australia, but, as we have seen, contrary to what this would imply, the apprentice system remains strongest in Australia.³⁸ We obviously cannot draw very firm conclusions from these observations, but the effect of the price of labour would seem to be somewhat contradictory. It may be more important therefore to concentrate on institutional forces in explaining the decline and persistence of apprenticeship.

It would seem likely that the coverage and structure of trade unions and collective bargaining will have an effect on apprenticeship systems. An argument might be put here that, in the US, apprenticeship declined because of the low levels of trade union membership and limited coverage of collective bargaining, especially

multi-employer bargaining. Where in the US unions are strong, apprenticeship systems still exist, as is the case in some areas of construction and in some large manufacturing plants. Australia would seem to fit this argument well, for, in that country, relatively strong craft unions and the award system (which acts as a proxy for regional or national industry bargaining) have undoubtedly been an important support of the apprenticeship system. The story for Britain is, however, rather more complicated and somewhat less convincing. Relative to the US, strong craft trade unions and multi-employer bargaining probably supported and enforced the apprentice system historically. A problem with this argument is that apprenticeships start to decline in Britain from the late 1960s and through the 1970s, during a period when unions remained strong. However, this was also a period during which multi-employer bargaining declined and single-employer bargaining may have been less effective in regulating apprentice systems. In the 1980s in Britain, union power has declined considerably and this may well have contributed to the decline of apprenticeship systems.

The experience of other countries such as Germany would also lend support to the argument that trade unions and collective bargaining constitute an important institutional prop to apprenticeship training. However, in Germany, the state would also seem to have played an important part in the maintenance of an effective apprenticeship system.³⁹ What role has the state played in these three English-speaking countries? Though in the US legislation regulating apprenticeships does exist,⁴⁰ this is minimal and it could not be said that federal and state governments have given much positive support to apprenticeship systems. However, in the UK, there was also minimal legislative support for such systems of training, yet

apprenticeship survived and prospered well into the post-Second World War period. Later government intervention probably had an effect in the UK: in the 1970s the ITB system probably supported apprenticeships and slowed down their decline; in the 1980s government interventions and hostility probably undermined them. In the case of Australia, we have argued that the award system, supportive legislation, and a corporatist approach to industrial relations generally have been significant supports.

All these explanations are cumulatively important. However, as or more significant have been the needs and capabilities of employers in their respective technological and market contexts. In the US, from the late nineteenth century onwards, employers found the costs of apprenticeship training outweighed the benefits: the costs in terms of wages and restrictions on managerial prerogatives were compounded by difficulties in enforcing apprenticeship. In these circumstances, small and medium employers looked to the external labour market, immigrant labour, and upgrading on the job. Large firms, increasingly using mass production systems and deploying extensive managerial hierarchies, developed their own in-house training arrangements, more in keeping with the internal labour market systems they were putting in place. As Lazonick has described it, this created a system of high levels of education and skill at the top of the firm, but low levels of skill at lower levels within firms and among outsiders.⁴¹

For Britain, Elbaum's argument - that apprenticeship survived because it could be enforced and because it provided real benefits to employers in terms of a return on training investment - is persuasive. But to this must be added an argument about the product and labour market situation of firms. British product markets were historically smaller and more fragmented than those in the US. In many British

industries firms produced a wide range of more customised products and for this they relied on relatively craft-intensive labour such as was provided by the apprenticeship system. Historically British firms were also often small or medium size and even larger firms were usually loosely coordinated. Such firms had weak managerial hierarchies and were reliant on craft labour to organise production. In these kinds of product market conditions, with weak corporate structures and managerial hierarchies, and, given an adequate supply of unskilled and skilled labour, internal labour markets were slow to develop in British firms. It made sense, for British firms, to rely on occupational rather than internal labour markets to provide skilled workers.⁴²

Apprenticeship training began to decline in the UK from the early 1970s for a number of reasons, crucial among which was growing employer dissatisfaction with traditional apprenticeship. A largely unreformed apprenticeship system and high apprentice wage rates made apprenticeship seem less appropriate in the context of growing product market competition and increased technological change. Moreover, from the mid 1970s, with rising unemployment, it became easier for employers to pick up skilled labour in the external labour market. As in the interwar years many opted not to train; others looked to the new state-based YT(S) system; and some large firms increasingly looked to internal labour market methods of delivery.⁴³

In Australia, union and government support for apprenticeship training has undoubtedly been important. Just as important, however, have been the needs and capabilities of Australian employers. Apprenticeship survived in Australia because it has to a large extent continued to meet the requirements of firms. Operating in relatively protected product markets and with still a large part of work of a small

batch, jobbing, and maintenance and repair kind, Australian firms need a relatively large number of all-round, craft-type workers. These they can obtain from the apprenticeship system and the occupational labour market. Until recently there has been little incentive to bypass the external market and build internal labour market arrangements.

It is true that there are some signs that apprenticeship may be under pressure, especially in the Australian metalworking sector.⁴⁴ In a situation of enhanced product market competition and with production technologies which require more flexible labour, employers increasingly feel the need for a more cost effective training arrangements. It has also been easier in recent years, because of high levels of unemployment, to pick up skilled labour in the external labour market. Large firms may seek to train their labour forces within their own internal labour markets.⁴⁵ On the other hand, total apprenticeship numbers have held up well in Australia and there are forces which will make for the survival of apprenticeship training. Much of Australian manufacturing industry is still of the small batch kind and requires retro-fitting and in-house maintenance. Technological change is breaking down barriers between trades and demanding a more flexible labour force, but the apprenticeship system, reformed on the lines of award restructuring and the AVC system, may be able to provide this. Australian firms have not yet developed very strong internal labour markets and, indeed, there is no strong incentive for them to do so when occupational markets work reasonably well.

In assessing apprenticeship and alternative methods of training in these three countries, a number of points may be made, in the context of our initial typology of methods of skill formation.

A free market-based system of training may have some advantages in terms of greater responsiveness to market forces and greater mobility between firms. This may make skill formation more relevant to the real needs of industry and encourage allocative efficiency within the economy. However, market failure can mean free-riding and a short-sighted approach to training. In turn, in periods of economic upswing this will mean skill shortages, poaching, and a bidding up of wages. This has been a phenomenon of Britain in the 1980s.

Internal labour market provision has advantages in that firms may be more willing to invest in skill formation and training arrangements can be integrated into the firm's total human resource system. Initial training of young workers and further training of adult workers can be better related within a company's internal labour market. On the other hand, internalised systems are, by definition, exclusive of outsiders; they may lead to training in narrow, firm-specific skills; and where they are uneven in coverage, they do not have the benign effect on levels of training throughout the economy. The US has captured many of the advantages of internal labour market-type training, and, for those who gain access to American internal labour markets, lifetime training may be higher than in the UK and Australia where training is more confined to entry level training of the traditional apprenticeship type.⁴⁶ However, the US has also suffered from some of the disadvantages and, in the case of manual workers, few firms have developed anything like strong 'salaried' internal labour markets. In the case of Britain, and even more Australia, it would seem that internal labour markets are not sufficiently well developed to deliver significant training advantages for the economy as a whole.

State intervention may overcome some of the problems of external and internal labour market failure. State provision of training and funds may improve access and

extend training to the broader population. More directive state intervention, such as was attempted in Britain in the 1960s and 1970s and in Australia in the 1980s, may put training on the agenda of firms which previously neglected training. State-based quasi-apprenticeship systems such as YT(S) and ATS can subsidise and improve access to training. There are also some merits in the creation of a national system of vocational qualifications such as is being put into place in both Britain and Australia: these can create recognisable career paths and portable qualifications. However, the disadvantages of state intervention are that it often gives priority to job creation, and the quality of training, especially on-the-job training, can be low. France moved in the direction of a state-based system in the 1980s, but there the government has invested considerable resources and brought about major changes in educational systems in a way that has not happened in the three English-speaking countries.

Apprenticeship training, even as gradually reformed as it has been in Britain and Australia since the 1970s, has many disadvantages: it is still restricted to certain trades; it has tended to exclude women and older workers; it may create an entry level or once-and-for-all view of training; and it may still perpetuate demarcations in industry. However, on the other hand, apprenticeship training has much to commend it. It is a work-based system of initial skill formation which makes possible employer investment in employees who are potentially mobile. If endowed with the right sort of institutional supports, it can ensure training by a broad spread of employers and in a broad range of skills. These skills can then later be built upon throughout a working life and transferred within an occupational labour market. Such a system exists in Germany where it is generally acknowledged to be one reason for that country's competitive advantage. However, it would be difficult to create or recreate such a system in the US and the UK without significant institutional

supports. Yet, where it still survives, and where it is relatively strong as in Australia, it would seem sensible to retain it.

Conclusions

Apprenticeship has fared differently in these three English-speaking countries: it declined at an early date in most industries and firms in the US; it survived reasonably intact in Britain well into the post-Second World War period; and it is still relatively strong in Australia. Over the last decade, free market-based approaches to training were in vogue in the US and Britain; there may also have been a move towards a strengthening of internal labour market systems in Britain and Australia, though these are still underdeveloped compared to the US; in all three countries there has been greater state interest in training, though this has ranged from the purely facilitative in the US, to the more interventionist in Britain, and the even more directive in Australia. The outcome of these changes is that these three countries find themselves with very mixed systems of training which are commonly held not to compare well with Germany (with its apprenticeship system), Japan (with its strong internal labour market-based system), or France (with its school-based system). Where apprentice training survives in these English-speaking countries, there is much to commend its continued existence. However, to survive in the future or to be revived, it needs significant institutional and government support and incentives or compulsions for employers.

ENDNOTES

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1. This article is part of a larger project comparing apprenticeship training in a number of countries. Other more detailed articles are available on Great Britain and Australia.
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 3. Osterman, Paul (1988), *Employment Futures: Reorganisation, Dislocation, and Public Policy*, Oxford University Press, New York.
 4. Webb, S., and Webb, B. (1920), *A History of Trade Unions*, Longmans. For the two best recent historical studies of apprenticeship see Knox, W. (1980) 'British Apprenticeship, 1800-1914', Edinburgh University, PhD, and More, C. (1980), *Skill and the English Working Class, 1870-1914*, Croom Helm, London.
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minimal.

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8. Senker, P. (1992), *Industrial Training in a Cold Climate*, Avebury, Aldershot.
9. See the work of S. Prais and colleagues at the National Institute for Economic and Social Research.
10. See Department of Employment, *Employment Gazette*, various years and Gospel, H.F. (1993), 'The Decline of Apprenticeship Training in Britain', mimeo.
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12. Commons, J.R. (1918), *History of Labor in the US*, New York, Macmillans; Douglas, P.H. (1921) *American Apprenticeship and Industrial Education*, New York, Longmans.
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 17. See, for example, Rosenbaum J.E. *et al.* (1992), *Youth Apprenticeship in America: Guidelines for Building an Effective System*, Washington, W. T. Grant Foundation Commission on Youth and America's Future.
 18. For the best account see Shields, John (1990), 'Skill Reclaimed: Craft Work, Craft Unions and the Survival of Apprenticeship in New South Wales, 1860-1914', PhD, Sydney University.
 19. Australian Bureau of Statistics, (1990), *Transition from Education to Work*, Australian Government Printing Service, cat. no. 6353.0, Canberra.
 20. The Australian figures may be obtained from Department of Employment Education and Training, *Apprenticeship Statistics*, Canberra, Australian

Government Printing Service, various years; British figures may be obtained from the *Labour Force Survey*, London, Department of Employment, various years; Elbaum provides the American figure. Apprenticeship is more extensive in Germany, Austria, and Switzerland, where it occupies around 5 per cent of the civilian population and one third to one half of persons aged 15 to 18.' Elbaum, B., *op. cit.*, p. 194. Reubens, B.G. (1980), *Apprenticeship in Foreign Countries*, Washington, US Department of Labor, Employment and Training Administration, R&D Monograph 77. For the recent decline in the UK, see Gospel, H.F. (1994), 'The Decline of Apprenticeship Training in Britain', Discussion Paper No. 189, Centre for Economic Performance, London School of Economics.

21. These rough figures are calculated as follows: for Australia for the years 1978-92 from Department of Employment Education and Training, *Apprenticeship Statistics*, Canberra, Australian Government Printing Service, various years; for Britain for the years 1978-90 from Department of Employment, *Employment Gazette*, London, Department of Employment, various years; and for the US for 1979 and 1991 from statistics provided to the author by the US Department of Labor.
22. *Report of the Commonwealth/State Working Group on Skills Shortages and Skills Formation*, presented to the Conference of Commonwealth and State Labour Ministers, 31 October 1986.
23. Reported in Sweet, R. (1990), 'A Brief Look at Some Empirical Issues Associated with the Youth Labour Market', Australian National University, Canberra, Centre for Economic Policy Research, Discussion Paper No. 243, p.

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25. Macintyre S. and Mitchell, R. (1989), *Foundations of Arbitration: The Origins and Effects of State Compulsory Arbitration 1890-1914*, Melbourne, Oxford University Press; Shields, J., *op. cit.*
26. This was also the case in Britain, though the public sector was and remains relatively larger in Australia.
27. Committee on Technical and Further Education, *TAFE in Australia*, (1974), (Kangan Report), Canberra, Australian Government Printing Service; for a historical perspective in the context of apprenticeship training see Shields, J., *op. cit.*
28. For the example of the metalworking industry, see Sheridan, T. (1975), *Mindful Militants*, Melbourne, Cambridge University Press.
29. See, for example, Industrial Commission of New South Wales, *The Apprenticeship System in New South Wales* (Beattie Report) (1968), Sydney, New South Wales Government Printer.
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32. Gospel, H.F. (1993), 'The Survival of Apprenticeship Training in Australia?', mimeo.
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of 17-year olds as a percentage of the total age cohort, in the school year 1987-88, as US 89.0, Australia 74.3, UK 52.1 per cent. Vickers, M. (1991), 'Building a National System of School-to-Work Transition: Lessons from Britain and Australia', Cambridge, Mass., Jobs for the Future.

34. Elbaum, B., *op. cit.*
35. Ryan, P., *op. cit.*
36. Elbaum, B., *op. cit.*
37. This reasoning is in part based on the tightness of youth labour markets in the two countries in the first quarter century after the Second World War and in part on the fact that apprentices had fewer opportunities to increase their basic rates by piecework or overtime earnings.
38. For two comparisons of certain aspects of wage structure between the three countries see, Brown, W., Hayles, J., Hughes, B. and Rowe, L. (1980), 'Occupational Pay Structures under Different Wage Fixing Arrangements: A Comparison of Intra-Occupational Pay Dispersion in Australia, Great Britain, and the United States', *British Journal of Industrial Relations*, Vol. XVIII, No. 2, July; Daly, A. (1990), 'An International Comparison of Relative Earnings in Australia, Great Britain, and the United States', PhD, Australian National University, Canberra.
39. See, for example, Backes-Gellner, U. (1993), 'The Institutional Embeddedness of Corporate Training Strategies: A Comparison of Training for Intermediate Skills in Germany and Great Britain', unpublished paper, IAAEG, University of Trier.
40. The main piece of legislation governing apprenticeships is the National Apprenticeship Act 1937.

41. Lazonick, W. (1990), *Competitive Advantage on the Shopfloor*, Cambridge, Mass., Harvard University Press.
42. See Gospel, H.F. (1992), *Markets, Firms, and the Management of Labour*, Cambridge, Cambridge University Press, chapters 4 and 8.
43. *Ibid.*
44. See Gospel, H.F. (1993), 'The Survival of Apprenticeship Training in Australia', mimeo.
45. Curtain, R. (1990), 'Internal versus External Labour Markets: Choosing an Appropriate Enterprise Skill Formation Strategy', *Business Council Bulletin*, November. It may also be the case that young people, staying on longer at school, do not wish to go into apprenticeships.
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