

Legal Incentives to Promote Innovation at Work: A Critical Analysis

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Abstract

The allocation of any benefit that arises from worker-generated innovation is complicated by the importance of three separate areas of law — employment law, intellectual property law and equity — and the distinction between those types of innovation that attract intellectual property rights and those types that do not (the latter being a category that is often referred to as ‘know-how’). The purpose of this article is to engage with the legal scholarship on the principles that are relevant to innovation. To date, the discussion has focused on two distinct approaches — what may be termed the economic and the fairness perspectives. The former may be seen as a justification for the current regime, while the latter has focused on the perceived needs of workers (in large part in opposition to the employers). Our argument is that these two approaches are both incomplete. In an attempt to get closer to a workable framework for the effective allocation of benefits, we offer a third approach; one that is based on the practices that are central to the employer-worker relationship.¹

Keywords

Employment law; intellectual property; innovation; know-how; allocation of benefits.

1. Introduction

This article discusses the law that regulates innovation at work, in particular those laws that regulate the way in which the benefits and outcomes of innovation at work are allocated between employers, and those who work for them. Our focus is therefore predominantly on those aspects of employment law, intellectual property (IP) law and equity which establish the default rules as to how the outcomes of innovation are to be allocated. We use the term ‘the outcomes of innovation’ to indicate, in a preliminary way, that the concept ‘innovation’ is not one that fits completely or easily into the available legal categories. Most

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importantly, it must be remembered that not all outcomes of innovation that are valuable give rise to intellectual property *rights*. Rather, many fall into a broad category that is often referred to as 'know-how'. The legal means by which to protect valuable know-how, and indeed the very content of what is capable of being legally protected, are subject to significant uncertainty.

The primary purpose of this article is not, however, to explore these uncertainties, or even those that may attend the ostensibly more concrete field of IP rights. Rather, our aim is to re-consider what is known about the goals and effects of the default legal rules in Australia concerning the allocation of the outcomes of innovation. As a starting point for our work, there is a considerable body of Australian and international legal scholarship on employment law principles that are relevant to innovation, although not all commentary directly contemplates how these principles might affect incentives for innovation. Generally, the principles are considered from two main perspectives (Wotherspoon 1993), although these are not mutually exclusive and contain overlapping elements. The first is an *economic* perspective. It considers whether the current system of allocating benefits provides optimal economic incentives for innovation. The second places a premium on the importance of *fairness* and cooperation in employment relationships. It questions how the law's treatment of worker interests may affect incentives for innovation in the workplace, suggesting that innovation is best encouraged by giving workers a 'fair deal' (see, for example, Riley 2005a; Stone 2004; Orkin and Burger 2005).

Our central argument is that these two perspectives reflect different conceptions of workers and employers. We argue the need to acknowledge this difference in order to think more clearly about whether the existing legal regime effectively promotes innovation in the workplace and, if not, what might be done to change that. In an attempt to get closer to a workable framework for the effective allocation of benefits, we offer a third approach; one that is based on the *practices* that are central to the employer-worker relationship. Before we develop our analysis of the three approaches, we set out a preliminary discussion of what is meant by 'innovation', and of the key features of the law in the area.

2. Background

The value of the research in this area is founded on the ever-increasing economic importance of successful innovation — demonstrated not least by the growth in government policy designed to promote innovation (see, for example, Productivity Commission 2007; Cutler 2008). Innovation has become increasingly important to many businesses, providing a competitive edge that can lead to a stronger market position and higher profits. Indeed, according to Sullivan (2000: 3ff), 'Intellectual capital exploded onto the business scene in the 1990s' with strategies for encouraging and managing innovation then becoming core to business practice.

In the global 'knowledge economy', enterprises rely increasingly on innovation in processes and products to sustain their growth and profitability (see, for example, OECD 1996; van Caenegem 2002: 11–12). What this means in practical terms, is that these enterprises rely increasingly on the ability of their workers

to generate innovative products and processes. This brings into focus the rules governing the allocation of interests, as between employers and workers, in the products and knowledge that are generated — and which can only be generated — through innovation by workers. The use of the term ‘worker’ in this article covers both employees and independent contractors; avoiding, where useful, the differences between the rights and duties owed by the two categories of worker in their work relationships.

What is Included as ‘Innovation’

Innovation may be defined as ‘creating value through doing something in a novel way’ (Cutler 2008: 4). Innovation is often associated with technological inventions, but not exclusively so. On the contrary: innovation can also refer to incremental improvements to existing products, processes or methods; applications of existing technology to new markets; or the use of new technology to serve existing markets (see, for example, Casselman, Quintane and Reiche 2006: 6). Innovation is best conceptualised as a complex, non-linear system or process with ongoing inputs and outputs (see, for example, Productivity Commission 2007: 7; Arup 1993: 7–8), that requires continuous public and private sector investment. The human dimension of this process is an important aspect of a firm’s (and the employee’s) human capital, with workers producing innovations — innovating — while also building relationships and negotiating channels of communication between different actors — including related businesses, consumers and academic institutions. As we have noted, by no means do all of these types of innovation lead to outcomes (new technologies, for example) in which it is possible to say that IP rights can be sought and granted. Where they do not, they fall into the more nebulous category of ‘know-how’.

The law of IP does, nonetheless, play a key role in determining who directly benefits from innovation in the workplace. Intellectual property can exist in a range of forms, in relation to a variety of innovative activity. IP includes copyright, patents, designs, trademarks and plant breeders’ rights. Copyright covers original expressions of creativity such as literary works, sound recordings, films and performances, while patents cover inventions such as drugs or methods to manufacture drugs. Trademarks have a similar function to these other types of IP, but operate in a different way: they are signs used to link particular goods and services to particular providers of the goods and services. The requirements for the protection of these forms of innovation, and the benefits that accrue to them, are regulated, in Australia, by specific (Commonwealth) statutes: the *Copyright Act 1968*, the *Patents Act 1990*, the *Plant Breeder’s Rights Act 1994*, the *Trade Marks Act 1995*, and the *Designs Act 2003*.

Concrete outputs, such as worker inventions, can be the subject of proprietary rights. To be clear, one very important consequence is that IP involves legal *rights* (to that IP) which may be held, assigned, or dealt with in other ways by the rights-holder (for example, *Patents Act 1990* s 13). Property rights that attach to the product of innovative activities are generally understood to play an important role as incentives to create (see, for example, Bently and Sherman 2004). The granting of a patent for an invention, for example, gives the holder of

the patent — the patentee — control over the use of the invention and the patent. Plainly this control can be exchanged for cash or other benefits.

There is of course a large body of scholarship which analyses critically the operation of IP rights in practice, and a good deal of it casts doubt on the accepted rationale for the grant of IP rights. Some commentators, for example, argue that innovation will still occur without monopoly protection (for example, Boldrin and Levine 2002); and others recognise that monopoly rights are not the only way to protect innovation (for example, Jaffe and Lerner 2004: 46–48).

In the workplace context, such proprietary rights generally attract a legal presumption of employer ownership.² As we consider below, there is legitimate scope to argue about whether or not default rules *should* allocate IP rights to employers rather than to workers. Leaving that to one side, however, IP rights, *qua* rights, have important characteristics that differentiate them from know-how. That is, because it is a system of allocating *rights*, IP provides a simple basis for an employer and a worker to bargain over the benefits arising from an innovation that might give rise to IP rights, including over the possibility of assigning the rights themselves.

Know-how is different. It can include the ‘special skills, experience and knowledge of individuals, in the performance of teams and in organisational architecture and routines specific to particular workplaces or enterprises’ (Hunter 2002: 13). What know-how does not, and cannot do, is have any of the characteristics of property. Perhaps as a result, there is no equivalent to the statutory regimes established to regulate the operation of IP. Although know-how does not give rise to IP rights *per se*, it is certainly not without legal protection, especially for trade secrets and confidential information. These are regulated by a range of common law and equitable doctrines and techniques, including contractual terms that restrict the post-employment movement of workers. In short, a combination of contractual and equitable doctrines has the effect that a significant proportion of the value of any innovation by a worker during the course of any particular employment will normally accrue to their employer. In practice, this means that an employer has the ability to restrain a worker, or a former worker, from using the value of that innovation for their own purposes. Indeed, within certain limits, courts will enforce ‘restraint of trade’ clauses, which have the effect of limiting the ability of an employee to compete with a former employer, usually within a specified geographic area, and during a specified time period.

One of the consequences of know-how *not* being, or giving rise to, a body of hard legal rights is that it is a far more difficult subject of negotiation, and it is much more difficult to transfer from one person to another. For some, it is also harder to justify in terms of providing protection. Trade secrets, a common example of know-how, can be seen as ‘suspect’ as ‘they do not involve the socially beneficial public disclosure which is part of the patent and copyright process’ (Hettinger 1989: 52). In addition, as we note below, there is a significant degree of uncertainty about the operation of the various legal and equitable doctrines that are involved in disputes over the value of know-how. But this does not make it value-less; it has, for example, been claimed to be ‘driving today’s economic transformations and growth’ (Australian Business Foundation 2005: 3). The

lack of a statutory regime that regulates the allocation of interests in know-how, coupled with the contingent nature of the application of those legal and equitable doctrines that are relevant, mean that know-how raises particular issues about the extent to which the law operates as an incentive to innovation.

Employment Law as it Relates to Worker Innovation

Employment law, as it stands, provides a (loose) framework for the allocation of benefits that arise from worker innovation. The employment contract that is the fundamental legal basis for the relationship between the employer and the worker is the primary instrument for regulating interests arising out of worker innovation. One of the core obligations in all contracts of employment is that an employee will serve their employer in good faith: that is, an employee has a duty of fidelity to their employer (regulated via an implied contractual term). The application of this doctrine is at the heart of most disputes over the right to exploit the value in know-how. At the same time, for these purposes 'employment law' should be taken to include the application of certain equitable doctrines, in particular the accepted notions first, that an employee will often stand in a fiduciary relationship to their employer, and secondly, that they owe their employer a duty of confidence. Other workers, such as independent contractors, may also owe a fiduciary duty to the person or company who is paying them. Whether any person owes a duty to another depends upon the nature of the relationship between the two (see *Hospital Products Ltd v United States Surgical Corp* [1984] 156 CLR 41).

The application of these equitable and legal doctrines to the specific context of particular employment relationships can be a complex, indeed sometimes an indeterminate process, leading to uncertainty for all parties (Stewart 1992). What might generally be accepted, however, is that in many situations the employer is in a strong position to claim rights and interests in relation to worker innovation (Raper 2004: 1). That is, there is a presumption at common law that an employer will have the right to control the value in any innovation that is created by a worker during the course of employment. In the absence of any express agreement, a term is implied into the employment contract that a tangible innovation made by a worker in the course of employment is held on trust for the employer (*Sterling Engineering Co Ltd v Patchett* [1955] AC 534). Where know-how is involved, the employer will be able to insist on the enforcement of certain 'negative' rights, that is, rights to require a worker or former worker not to use certain information, either at all, or in certain specified circumstances.

Central to an employee's common law duty of good faith to their employer, and its application to innovation, is the rather indeterminate question whether or not the innovation occurred 'in the course of employment'. To determine this question, courts consider a number of factors, including the use of time, opportunity, information or facilities provided by the employer (Sappideen et al. 2009: 245–246). Courts also examine the nature of the worker's tasks, and the question whether they were 'hired to invent' (*Victoria University of Technology v Wilson* [2004] 60 IPR 392). Where a worker's day to day tasks involve invention, or where a worker was explicitly directed to invent something, it is more likely

that courts will find that the invention was made in the course of employment, and the employer will be able to claim ownership rights. Also, the more senior the worker and the higher the salary, the greater the likelihood that they are bound to share the invention with the employer (*Worthington Pumping Engine Co v Moore* [1902]RPC 41). Where a worker has used an employer's resources to develop an invention, the employer will have a stronger claim to ownership rights. On the other hand, if a worker uses their own resources to develop an invention in their own time, which is wholly unrelated to their employment, they will probably retain ownership rights in the invention.

Ownership rights are less clear-cut in other situations, which might arise, for example, from the flexible nature of the modern workplace: the boundaries are often blurred between a worker's home and the workplace, or between creative pursuits and work time (Harris 2004: 67). Further, an express clause in the employment contract that assigns all invention rights to the employer will not necessarily mean that the employer is entitled to ownership: courts have been reluctant to uphold assignment clauses that purport to give employers ownership of inventions created outside the scope of a worker's employment (see, for example, *Electrolux Ltd v Hudson* [1977] FSR 312).

As noted, the employment relationship can give rise to a fiduciary duty (see, for example, *Hospital Products Ltd v United States Surgical Corp* (1984) 156 CLR 41), whereby a worker is under a duty not to profit from the relationship at the expense of the employer. An employee also owes their employer a duty of confidence. Both these equitable obligations overlap with the contractual duty of good faith, and in some respects they go further: the duty of confidence, for example, can endure past the end of the employment relationship. It can also operate to restrain third parties to the employment relationship from using certain information (Sappideen et al. 2009: 240).

The case of *Victoria University* illustrates the operation of the equitable doctrine of good faith in practice. The broad principle can be more narrowly expressed and applied in the employment context to the proposition that where a worker is presented with an opportunity to claim an interest in an invention or creation, and that opportunity could have been exploited by the employer, the worker breaches their fiduciary duty by taking that opportunity without the express agreement of the employer. In *Victoria University*, the employer was able to claim an equitable interest in a worker invention because the worker was found to have breached his fiduciary duty to avoid conflicts of interest by taking an opportunity that the university might have exploited itself. As with legal doctrines, however, the precise application and scope of the relevant equitable doctrines will vary according to the exact position and duties of the worker. For a critique of the application of the doctrines, see Riley (2005b).

Issues Raised by the Intersection of IP and Employment Law

The binary division we have sketched here between IP and know-how is necessarily over-simplified. So too is the impression that there is a clear distinction between the fields of IP and employment law when it comes to determining the allocation of the outcomes of worker innovation. Indeed it transpires that

employment law plays a significant role *within* the law of IP. This arises because the common law of IP generally defers to the common law of employment — that is, to the terms of common law contracts of employment — in setting default rules.³ A better understanding of how the two areas of law intersect might, in turn, promote innovation in the workplace.

Two central issues that inform the balance of this article relate to (1) the complexity of workplace regulation — in particular with respect to the variation evident across Australian workplaces; and (2) the centrality of control over innovation. The brief discussion above of the ‘in the course of employment’ test was implicitly founded on an understanding that there are significant differences in the nature of the employment relationship across the various industry sectors of the economy — including, but not limited to, the above mentioned distinction between employees and independent contractors.

Control over the value resulting from innovation is central. IP covered by the statutory schemes (and applicable common law rules) is more easily controllable because of the simple fact that the outcome of the innovation is (or gives rise to) a form of property. Control of know-how is just as important; however, as noted, there is no regulatory scheme that operates to facilitate employer control of the value in know-how. Instead, control over the value in know-how has traditionally been asserted through the use of a combination of contractual and equitable obligations implicit in, or arising from the employment relationship. In addition, many employers include post-employment restraints in their employment contracts. These restraints are designed to restrict workers from competing with the employer for a defined period (and within a defined geographic area) once the employment relationship is over. These clauses thus prevent workers from exploiting the value in an employer’s know-how to their own advantage (and so to detriment of the former employer). They also prevent workers from competing with the employer by using accumulated knowledge of the employer’s customer base.

However, although employers may have a legitimate interest in protecting trade secrets and customer information, courts in principle begin their consideration of post-employment restraints from the proposition that such provisions constitute a restraint of trade likely to interfere with the worker’s ability to seek further employment. Indeed, these restraints are considered *prima facie* void, and it falls to the party seeking to enforce such a clause to demonstrate that they are reasonable, and in the interests of the parties and the general public (*Nordenfelt v Maxim Nordenfelt Guns & Ammunition Co Ltd* [1894] AC 535).

These post-employment restraints, therefore, allow employers to maintain some control over the products of a worker’s innovation even after the worker has left the employment relationship. The issue as to whether this is appropriate remains, for the present authors at least, open. The exploration of the two well-known frameworks for justifying a particular approach to the allocation of the benefits of innovation — the *economic* and the *fairness* approaches — allows for a deeper understanding of what may be considered to be ‘best-practice’ for the allocation of such benefits. At minimum, it provides an understanding of how we might move toward better practice.

3. Economic Approach

This discussion of the *economic* perspective on the allocation of benefits of worker innovation is in two parts. The first relates to innovations protected by IP rights — what might be thought of as ‘hard’ IP — particularly copyright and patents. The second relates to know-how. This distinction is necessary given the different control issues that arise from the two categories of innovation, as well as the differing legal doctrines that are relevant.

Hard IP

In terms of the allocation of benefits of hard IP, the focus here relates to the ownership of the property rights that arise from innovation, in this case, the rights attaching to inventions by workers. This is a different issue from that of who may exploit the innovation. Van Caenegem argues that, in most cases involving patented inventions, it is more efficient for employers to exploit the invention, as they can most effectively gather the necessary skills and resources (2007a: 95). This may be the case irrespective of who owns the patents. The worker could own the patent, and therefore the ‘right’ to exploit the invention, but there could be a licensing deal between the worker and the employer to actually exploit the innovation for the benefit of both.

There are several economic arguments to support the legal status quo regarding worker inventions. Merges (1999: 2–3), for example, argues that the ‘verdict from economic theory’ is that the presumption of employer ownership of worker inventions is ‘overwhelmingly justified’. Indeed, McKeough, Stewart and Griffith (2004) consider that arguments regarding worker ownership are so outdated as to be no longer relevant. In their view, the question of worker incentives should be left to the market, suggesting that the prime issue is how to encourage investment in innovation from business rather than how to encourage workers to engage in the process: the ‘assumption being that those with private capital or public expenditure at their disposal will themselves create the necessary incentives for individuals to be creative’ (2004: 24).

From an economic point of view, it is argued that employer ownership of worker innovations is more economically efficient than allowing proprietary interests to accrue to workers. If inventions, in the case of patents, were owned by workers, it is suggested that this would potentially lead to higher costs for enterprises, which would act as a dampener on business investment in innovation (Merges 1999: 13; van Caenegem 2007a: 95). The argument goes that worker ownership would lead to increased transaction costs, as workers may try to bargain for abnormally large sums of money from the employer, potentially holding up the process of commercial exploitation of an invention (see further Landes and Posner 2003: Ch. 1). Further, Morgan reasons that a worker’s idea may only be the starting point for innovation, and that considerable investment is required to commercialise an invention, with respect to matters such as prototypes, tooling costs, regulatory consents and marketing (Morgan 1994: 156).

It is also argued that worker ownership would lead to inefficiencies in the workplace. For example, Morgan argues that it may produce inequalities in the

workplace. That is, workers who create intellectual property should be no more entitled to extra reward than workers who manually create physical property for an employer (1994: 153). Second, as most innovation involves teams of people rather than individuals (Merges 1999: 21; van Caenegem 2002: 12), it may be difficult to work out appropriate compensation systems where teams are responsible for an invention.

Further, as Landes and Posner (2003: 318) emphasise, innovation, particularly with respect to patentable inventions, tends to be cumulative — rendering the issue of appropriate compensation for all contributors even more problematic. If workers were given a fixed pro-rata share of the increased profits generated by the team, Merges (1999: 22) suggests that this could encourage individuals to idle and allow other team members to do most of the work. Further inefficiencies might be created as workers might be more inclined to focus on inventing work to pursue personal gain at the expense of other business tasks, including team work, marketing and product manufacturing (Merges 1999: 26).

Merges, further, claims that this prospect ‘more than anything else explains why researchers are compensated primarily by salary’ (1999: 27). Van Caenegem (2007a: 95) notes that salary is a ‘blunt instrument’ to encourage innovation but Merges (1999: 38) argues that enterprises recognise this and implement worker reward systems in response. These rewards may include: payments tied to patents; bonus schemes; enhanced prospects for promotion; career path progressions that reward significant inventions; spot bonuses for significant inventions; output based bonus schemes, and; more elaborate reward systems based on administrative assessment of the value of an invention and an individual’s contribution.

For Merges (1999: 38–40), it is more effective to allow the market to devise incentives for workers than to construct a statutory worker ownership right, since private worker reward schemes offer greater variation and flexibility for individuals and enterprises. On the other hand, Collins (2003: 114) argues that bonus schemes may be too discretionary to be a real incentive and that the best incentive may be that workers with good ideas can leave and set up their own businesses, either in competition with their former employer or as a joint venture. Indeed, Van Caenegem (2007a: 95) contends that worker ownership might make it more difficult to retain talented workers, as they would be more likely to leave the employer’s business in order to better exploit patent rights.

Finally, it is argued that the presumption of employer ownership of the benefits of innovation is also justified on an economic risk analysis: the employer bears most of the risk in relation to the process of innovation, in return for which it is appropriate that they receive ownership of innovations in return for bearing that risk. Merges points out that employers bear the risks associated with innovation and contribute significant resources to ensure that innovation can take place, while workers get paid whether or not a particular line of research bears fruit. That is, by taking a salary, worker inventors are expressing a preference for a low-risk reward instead of the high risk-reward that they might attain if they started their own company. For Merges (1999: 30–31), then, workers should not be able to avoid the costs and risks associated with innovation, yet still claim the ownership of successful inventions.

Know-how

The *economic* perspective on worker-generated know-how focuses on the validity of post-employment restraint clauses in employment contracts (for a review of the economic analyses of such restraints, see Lester 2001). Merges (1999: 45), for example, argues that the ultimate economic stimulus to competitiveness and innovation may be the freedom of workers to leave their employment and become entrepreneurs by starting up their own companies. Further, he considers that the possibility of worker departure helps to constrain employer opportunism in relation to worker innovation, and that this acts as a counterbalance to pro-employer rules regarding worker inventions. In short, this perspective has an emphasis on an efficient market as the regulating institution — while it is better that employers own IP rights so that they can make the investments and exploit the outputs, at the same time they should be ‘kept on their toes’ by a free flow of workers and the knowledge they retain.

Opportunities for worker mobility also contribute to innovation by allowing the movement of knowledge and human capital between businesses. Even though it may be logical from an individual enterprise’s point of view to restrain competition from a former worker, there are strong economic arguments that the overuse of post-employment restraints is not an efficient use of human capital, and that this impedes industry competitiveness over the long run. Gilson (1999), for example, argues that the mobility of workers between enterprises leads to crucial ‘knowledge spillovers’ or cross-fertilisation between enterprises and a more dynamic, innovative and competitive business environment (see also Saxenian 1994). Gilson (1999: 586) compares the performance of two high technology districts in the US — Silicon Valley in California and Route 128 in Massachusetts — and concludes that Silicon Valley’s superior success is due, at least in part, to California’s blanket prohibition on post-employment restraints and the consequent ability of workers to move easily between employers or to start up their own businesses. It may be noted, though, that Gilson does not argue in favour of the total abandonment of post-employment restraints, as he acknowledges that they may be used to protect valid business interests: rather, restraints should be treated with caution.

Others also argue, from an economic perspective, in favour of some use of post-employment restraints. Posner, Triantis and Triantis (2004: 1) note the difficulties in balancing the economic objectives of labour mobility and human capital investment: ‘When labour is mobile, human capital moves to its highest valued use, but employers are discouraged from investing in training their workers because the investment pay-offs are captured by future employers.’ Further, Rubin and Shedd (1981: 97–98) argue in favour of a limited version of post-employment restraints (ones that apply only to trade secrets) on the grounds of creating incentives for employer investment. They consider that employers are more likely to invest in the development of worker knowledge of trade secrets if they can protect it with a restrictive covenant that prevents its use on behalf of a competitor. According to this argument, without this protection employers would be discouraged from developing this information or would be forced to use it in a guarded and inefficient manner. However, they note that there is a

danger that some employers might use restrictive covenants in a more general way to restrain workers from using not only trade secrets, but from using their general human capital.

Summary of Economic Approach

For the most part, economic theory evaluates the allocation of the benefits of innovation in terms of which incentives are most likely to result in increased levels of innovation; it also tends to focus on encouraging employer investment by maximising returns. Although successful innovation can offer significant financial reward to businesses, innovation involves risk: it can take time and money to develop innovative processes or products, with no guarantee of success at the end and there is the possibility of imitation by competitors. The economic approach described here relies in large part on the assumptions of neo-classical economics, and applies them to the employment relationship.

This means, to a large extent, both parties to the relationship are perceived as independent, rational parties with sufficient knowledge and bargaining power to contract as equals. For example, Morgan argues against workers receiving control of the value in their innovations as of right, but instead is in favour of them receiving a 'reward separately negotiated' (1994: 153). The argument is that this pre-assignment of rights is economically 'efficient' as it minimises transaction costs and deals with them before the invention is made — thereby reducing hold-ups in the innovation and exploitation of innovation processes. Merges (1999: 16), for example, argues that any hold-up problems may be solved in the context of worker ownership by agreeing on licence fees for intellectual property rights in advance, so that excessive fees cannot be extracted.

Obviously enough, this idea of bargaining amongst equals may not accurately describe the capacity for negotiation in all workplaces — particularly at the time an employment contract is signed. This is the point at which the employer may be risk averse and offer less, because the worker is an unknown quantity. At the same time, the worker may demand less because getting the job is more important than maximising potential income and benefits.

The *economic* approach, then, may be most applicable to circumstances involving experienced, successful innovators being employed by experienced, successful companies that rely on innovation. This limited set of circumstances, however, may not be representative of the majority of employment relationships. It may not in fact cover much of the innovation that takes place in the workplace. Ultimately, these are empirical questions. We discuss further below the limitations of the economic approach to the allocation of the benefits of worker innovation; before that, we provide an introduction to the competing perspective — the *fairness* approach.

4. Fairness Approach

The *fairness* approach focuses on the need for employment laws to integrate fair treatment of workers *as well as* economic efficiency. In this sense, many commentators argue that a high degree of innovation can only be achieved through an employment relationship based on fairness, trust, cooperation and mutual

benefit. Collins (2003) and Riley (2005a) both argue that fairness and competitiveness necessarily go hand in hand. Riley (2005a: 2), for example, argues for the necessity of 'fair dealing' in employment relationships, which she defines as 'fair treatment in the economic exchange of work for remuneration and other economic benefits'. In her view, disputes regarding human capital have an impact on both the fair treatment of individual workers and on competitive labour markets (Riley 2005a: 166–167). Collins maintains that a 'command and control' strategy from employers cannot elicit the necessary levels of cooperation, flexibility and willingness that are necessary for the innovation process, which relies heavily on worker knowledge and ideas. Instead, he considers that employers need to 'commit' to treat the workforce fairly and, perhaps, to share in the profits arising from better cooperation. In particular, he argues (2003: 115) that employment law can be instrumental in creating rules and institutions that allow employers to make the 'credible commitments to treat their workforce fairly in return for better cooperation'. Again, we discuss the fairness approach first in terms of 'hard IP' and then 'know-how'.

Hard IP

Riley (2005a) assesses the frameworks around the allocation of IP rights arising from worker innovation and criticises, in particular, the role that equity can play in the allocation of those rights. An example of this is her critique of the above-mentioned decision of *Victoria University*. Even though the academic in question had a contractual entitlement to pursue his own consulting work, ultimately the court determined that he was also still obliged to seek the express consent of his employer before taking any profit-making opportunity for himself. Riley (2005a: 177) concludes that equity overreaches in favour of employers: the 'default position is always that the employer can claim the property. The onus is on the employee to obtain consent'. She therefore argues (2005a: 26) that equity should not become the 'handmaid of oppression'.

Some scholars, from other jurisdictions, also question the fairness of employment law principles that apply to worker inventions (see, for example, Bartow 1997). Orkin and Burger (2005: 84) argue that US worker inventors do not receive fair compensation for their inventions, especially if the compensation on offer is only the promise of continuing employment (see also Orkin 1984).⁴ They highlight the value of overseas approaches, where workers receive a percentage of royalties (Germany), or compensation (Japan). Wotherspoon (1993) explores the UK approach, which includes a right to compensation for workers where their invention has resulted in 'outstanding benefit' to their employer, and considers that here also the balance is tilted in favour of employers. There is an imbalance, resulting in an 'uphill battle' for workers to gain compensation, because the 'outstanding benefit' requirement sets the bar too high, requiring workers to show that they have revolutionised their employer's business (Wotherspoon 1993: 131).

Know-how

With respect to the post-employment restraint clauses that maintain the control of know-how in the hands of employers, Stone (2002) in the US and Riley in Australia argue that the growing use and reach of such restraints does not promote the fair treatment of workers, or competitiveness more generally. They consider that the enforcement of restraints on worker mobility is inconsistent with modern patterns of employment, where jobs are less secure and workers move between jobs more frequently (for example, Riley 2005a: 168–169).

Stone notes that simple efficiency and competence are no longer sufficient in modern workplaces, as successful enterprises increasingly require their workers to take a more innovative and entrepreneurial approach to their jobs. Further, enterprises no longer offer job security in return for this increased innovation. Instead, ‘the goal of today’s management is to engender commitment without loyalty’ (Stone 2002: 733) and they may also try to restrict the mobility of innovative workers through the use of post-employment restraints. In this sense, Stone argues that the workers who are most successful — through interacting with their employer’s networks, developing and employing knowledge about customers, business practices, competitors and the context in which the enterprise operates — are more likely to be unfairly penalized by current rules and ‘frozen out’ of subsequent employment opportunities (Stone 2002: 758–759). Implicit in this assessment is the judgment that innovative behaviour is potentially a double-edged sword for workers.

In Riley’s view (2005a: 169), legal arguments that seek to protect individual employers’ interests at the expense of ‘free and fair competition’ should be shunned. In this sense, she argues that the interests of fairness and economic efficiency are compatible: ‘workers’ interests in maintaining a liberty to exploit their own knowledge and experience in future engagements coincides with the community’s broader interest in making the most efficient use of all economic resources’ (2005a: 167). Riley acknowledges, however, that while certain restraints may be necessary, some restraint clauses can be thinly disguised attempts to stifle competition, rather than genuine efforts to protect confidential information (2005a: 179). This is particularly the case especially where there are well established legal mechanisms, including trade secret law and breach of confidence actions that allow an employer to protect its tangible and intangible property rights against misappropriation by workers. Collins (2003: 155–6), in addition, suggests that there is a strong case for disallowing post-employment restraints altogether, except where they restrain the use of highly confidential information, such as trade secrets. He argues that the free movement of workers tends to make business as a whole more innovative and competitive in the long run, facilitating the movement of ideas and know-how between different firms.

Summary of Fairness Approach

The *fairness* approach differs from the *economic* approach in two significant ways. First, it acknowledges the ongoing relationship that exists between the employer and the worker — that is, it conceives of the employer and the worker in fuller

terms than as mere independent contracting parties that only come together in the processes of negotiation. Second, the approach privileges the worker's 'personhood' or sense of self (see, for example, Cherensky 1993). In these respects, the *fairness* approach presents a more complete perspective of the worker, but in some cases it is at risk of doing so without including an equivalent perspective of the employer. This imbalance in conceptualisation contributes to a significant limitation of the approach — the term *fairness* seems to be without precise definition in the literature. Without an adequate understanding of the complexity of the positions of both employers and workers, it is more difficult to assess, and therefore to agree on, the fairness of any given allocation of the benefits of worker innovation. It is, in part, the failure to recognise the potential for multiple motivations for a given action that suggests that neither the economic nor the fairness approach is sufficient to provide an adequate understanding of how legal incentives to promote (worker) innovation might best be structured.

5. A 'Third Way' — Practice-Based Approach

In commenting on the economic approach, we noted that it might be best suited to particular types of employment relationships, but that how the law operates in practice is in the end an empirical question. As it turns out, this is *generally* true of the areas of employment law and IP law with which we are here concerned. At least so far as the academic literature is concerned, in large part we simply do not know the extent to which the legal principles have a practical effect on businesses, and/or on innovation. It has been suggested that the law does not have a significant impact on whether enterprises decide to invest in innovation, and that businesses are more likely to consider profit and/or recognition when deciding whether to invest in innovation. Miller (1974) argues that if the law does have an effect, it is at best neutral. According to this view, the law is not likely to create positive incentives, but it can act as a barrier to innovation. Other research has shown that, even in the area of hard IP, the protections offered by the law do not mean that all industries use the patent system to protect their knowledge (Levin et al. 1987; Allison and Lemley 2000; Burk and Lemley 2003). That is, the available empirical evidence is inconclusive on the question of whether the existence of IP rights or legal protection has an influence on business decisions whether or not to innovate (van Caenegem 2002: 17). It is at least possible, indeed likely, then, that the norms and practices of individual firms or particular industries have a more important role in encouraging innovation than do the formal legal regimes.

Privileging of Practices

The practices of individual firms and industries also suggest that neither the economic nor the fairness approach is sufficient in itself to offer a complete account of how the law should allocate the benefits of worker innovation so as best to promote innovation. Both approaches are insufficient because neither is based on a sufficiently nuanced understanding of either workers or employers; the underlying conceptions of the two categories, under either approach, are too

limited to account fully for the dynamics in play at the intersection of employment relationships and the processes of innovation. A framework that focuses on ownership may, for example, be less relevant where a worker owns a patent but the company owns the only means of production that makes the patent valuable. Broadly speaking, the economics approach is limited in that it sees both employers and workers only as rational, risk-calculating individuals. The fairness approach, on the other hand, focuses almost exclusively on a perceived need for the legal regimes to privilege the interests of the ‘personhood’ of the worker — as that is what is ‘*fair*’. A more nuanced understanding would accept that aspects of both approaches are relevant.

Our proposed ‘third way’ approach is one that focuses on the *practices* of workers and employers. This approach is based, substantially, on the literature that has arisen out of the work of Michel Foucault. For a practice-based analysis of the patent system, for example, see Dent (2007). ‘Practice’, for these purposes, is understood to cover a wide range of behaviours and attitudes — it covers inventive activities (such as using scientific equipment for the development of a new pharmaceutical); repetitive actions (those that are carried out on a daily basis as a standard part of a job); creative thoughts (the flashes of inspiration that produce a new approach); and attitudes, perceptions and motivations (the thoughts that prompt actions and reactions to the outside world).⁵ A focus on practices immediately allows for differentiation between industries and job descriptions as it acknowledges that the practices of each are, to an extent, unique. This approach also sidesteps the binary of owner/non-owner and, therefore, allows a more nuanced understanding of the issue.

As we have already suggested, it is arguable that the economic approach is unlikely to lead to rules shaped in a way that realistically takes into account the whole spectrum of employment relationships. In this sense, a practice-based approach may facilitate thinking about the structure of legal incentives to innovate which is capable of being more flexible, and so effective. A practice-based approach also has the advantage that it draws on the insights of each of the other two perspectives. First, in the same way that the fairness approach highlights the complexity of the worker’s position, a practice-based approach recognises the complexity of the position of the employer. Second, it attributes economic power and decision-making to *both* sides of the relationship. At the same time, however, it does not consider this to be the most important practice in the constitution of either workers or employers.

A practice-based approach acknowledges the multiple motivations of both workers and employers. If patents are taken as an example, there is evidence to suggest that inventive workers are motivated by all sorts of factors to invent, with money being only one of them. The Productivity Commission (2007: 263) has highlighted the following factors as being important to some workers: autonomy of research, utilisation of skills, peer group esteem and the ability to add to existing knowledge. In the copyright area, it has been argued that some creators are intrinsically motivated rather than motivated by external factors such as profit. For example, creators ‘would sooner sacrifice money income in order to be able to work more hours in their profession’ (Abbing 2003: 438).

In terms of the motivations of employers, other research indicates a number of benefits that may prompt a firm to pursue patent protection for an invention. These include a desire to protect technology; to create 'retaliatory power' against competitors; to create 'better possibilities of selling licences'; to provide 'motivation for employees to invent'; to provide a 'measure of R & D productivity'; and to improve the 'corporate image' (Granstrand 1999: 78).⁶ Neither the economic nor the fairness approach appears to recognise this range of motivations that can underpin the key actions of both workers and employers.

One idea from the literature taking a fairness approach that is useful for a practice-based approach is the notion of the 'psychological contract'. This term, originating in organisational theory, encapsulates the 'implicit and explicit understandings that employees and employers bring to their jobs' (Stone 2002: 730; Anderson and Schalk 1998). This concept of contract centres on the *beliefs* of the parties about the promises made and the obligations each owes to the other.

In a study of workers' beliefs about the ownership of ideas generated at work, respondents were varied in their opinions as to who would own any ideas. When asked about a scenario in which an idea was generated at work as part of a project looking for new ideas, 94 per cent of workers thought the employer would own the idea, 3 per cent thought the worker would and the rest thought it would depend on other factors. When asked about a scenario where an idea was generated at home (but where the project they were working on in the workplace was focused on generating new ideas), 12 per cent thought that the workers would own the ideas, 19 per cent thought the employer would and the rest said it would 'depend on other factors' (Hannah 2004: 220). Importantly, one side's view of the (psychological) employment contract will not necessarily be the same as the other side's. This is the case even though each party usually believes that both sides share the same interpretation, or the same expectations, of the contract. Further, 'unlike formal employment contracts', a psychological contract is 'not made once but rather it is revised throughout the employee's tenure in the organisation' (Robinson and Rousseau 1994: 246). This idea, then, fits well with the notion of a practice-based approach; though unlike Stone's focus on the worker's perspective (2002: 730–731), a practice-based approach would give weight to the perspectives and practices of both parties in the relationship.

The notion of the employment 'relationship' is important — both sides have their own expectations, perceptions and desires. Sometimes, the desires differ; though, in most instances, both parties share a desire to maintain the relationship (or, at least a desire to find and maintain an employment relationship). Both parties are also, usually, motivated by a desire for economic security. An acknowledgement of the existence and importance of the relationship does not, however, presuppose a balanced relationship. In most instances, there will be an imbalance in knowledge, skills, finances and what may loosely be termed 'power'. An example of this is the manner in which the law can be accessed, and used, by one party against the other. In the case of post-employment restraints, it is possible that employers insert broad restraint clauses into employment contracts, in the knowledge that many workers will be deterred from competing

by virtue of the presence of the clause, regardless of whether the restraints are legally enforceable or not.⁷

A further consideration that generally favours employers is that restraint clauses are most often enforced through interlocutory decisions, without the benefit of full argument (Riley 2005a: 179). In other words, employers, with a greater knowledge of the law and access to the courts — and employers are more likely to be able to afford lawyers, whose fees are tax deductible — can exploit these differentials to the detriment of the worker, though either party resorting to the courts usually means the relationship has turned sour.

Control over the Benefits and Value of Innovation

The notion of ‘control’ is central to this practice-based assessment of the allocation of the benefits and value of innovation; it also serves as a useful example of the application of the approach to the worker-employer relationship. Control, like ‘power’ in a Foucaultian analysis (see, generally, Gordon 1980), is a complex idea. The control of the benefits and value of innovation constitutes a relationship between the controller and the innovation. Control constitutes a relationship between the controller and others who want to use the innovation. Control is also important for the relationship between the controller and any person whose behaviour, with respect to the innovation, can be directed by the controller. Control, therefore, may also be seen in terms of practices — as all relationships are necessarily governed, and expressed, by the practices of those in the relationship. The practices exhibited with respect to control, and indeed with respect to every aspect of the worker-employer relationship, are constrained. They are constrained by the experiences of the person (they can only do what they know) and by the expectations of the person (they will do what they think is part of the psychological contract).

Control includes ownership. A worker may control a patented invention if they are the patentee. Control also includes the capacity (as opposed to the right) to exploit the invention. An employer may control the invention if the patentee worker has given the employer a licence to manufacture a product covered by the patent (irrespective of whether the worker demands payment for the licence). Control includes the capacity for a worker not to share newly generated know-how with their employer (possibly with the goal of resigning and working for the competition or setting up a new firm to exploit the innovation). Control also includes the capacity for an employer to renew, or to refuse to renew, an employment contract based on the actions of the worker (and the employer) with respect to any innovation.

In each of these circumstances, control is productive — it allows the controlling party to act in a way that would not be possible without that control. The obvious example is where the employer owns a patent; if the employer were not the patentee, they would be limited in their capacity to manufacture a product covered by the patent. Further, control by workers of the benefits of innovation directly contributes to their mobility (see, for example, van Canaegem 2007b; Kitch 1996). Their movement from one employer to another could have both

positive and negative effects for employers and the industry. The skills, expertise and know-how of workers can drive innovation in individual enterprises, but its diffusion and movement throughout an industry can lead to higher levels of innovation in an industry. Workers' intimate knowledge of an employer's business, its processes and its customers is an invaluable asset that can lead to higher levels of efficiency and innovation within the enterprise. But it can also transform former workers into a competitive threat if they choose to change employers or to start their own business.

It is important to emphasise that the allocation of control over innovation is fundamentally different from the allocation of monetary rewards for the innovation. Money — whether in the form of cash bonus, or shares in the firm — is not as productive with respect to a worker's career, or with respect to the enhancement of the industry. The impact that worker share ownership may have on the control of the innovation will depend on the size of the firm and the percentage of shares given to the worker. It has been argued, however, that in some sense workers, regardless of share-holdings, can be seen to 'own' the firm that employs them (Njoya 2004). If this ownership sense forms part of a worker's beliefs, then the issue of control of an innovation that arose in the workplace would take on a different perspective.

Control, unlike cash, may also be shared between workers, or between workers and employers. Shared control may be used to strengthen the worker-employer relationship as an ongoing process of discussions about the use of the innovation. Denial of control, if it goes against the expectations in the psychological contract, is more likely to damage the relationship to the detriment of the worker's commitment to the work, and the firm's profitability. The importance of control, however, does not make it a simple process to divine how any benefits arising from worker innovation should be allocated.

Application of Practice-Based Approach to Allocation of Benefits

The application of this 'third way' to the allocation of benefits that arise from worker innovation is not clear cut. The approach is founded on both an acknowledgement of the diversity of roles, workplaces and industry sectors in the economy, and of the importance of the worker-employer relationship. This multiplicity of factors means that there must be an acceptance that there is not likely to be a single allocatory principle equally applicable and equally beneficial across the whole economy. In other words, there are difficulties to be had in applying the practice-based approach in a normative manner.⁸ This does not mean, however, that the approach has little value.

By allowing for a wider range of actions and motivations to be included, it would equally value the expectations of the employer and the worker. Acknowledgement of an expectation does not require its acceptance as binding (or even persuasive) with respect to allocation of benefits. An employer, for example, may have an expectation of a worker's loyalty as part of a contract of employment, however, the employer may have to make do with a worker's commitment to the job instead (Cappelli 2000: 103). It would also be possible, were the employer to be a company, to consider the perspectives of share-holders. However, as there

is usually not an ongoing relationship between workers (as generators of innovation) and share-holders, there is less of an imperative to draw on investors' expectations. The argument for the practice approach reflects, and also reinforces the impression that large empirical questions are involved in the debate about the effect of employment law and IP law as incentives to worker innovation.

Under our concept of the practice approach, it seems that the likely range of matters that could be included in an assessment of the appropriate allocation of benefits is so broad that it would be difficult to carry out that assessment *without* empirical research.⁹ For example, important issues being probed in the project investigating the role of restraint of trade clauses (see Endnote 1) include attitudes of workers and employers at the commencement of employment, and at the end of the contract; the extent to which either side sees the salary/wages paid as sufficient consideration for post-employment restrictions; the degree to which the attitudes of parties involved change across industries and whether the size of the employing enterprise affects expectations; and the extent to which either party seeks legal advice with respect to any restraint clauses. The last matter is of particular importance — the degree to which the obligations of workers and the preferences of employers are informed by specific legal advice will provide insight into the impact the law, now, has on actual contracts. And the other questions will offer information as to the extent to which parties feel limited by the drafted clauses. Without a clear understanding of the role of the law (either statute or case law) on the behaviour — the practices — of workers and employers, it is impossible to be confident of the effect that any change to the might law might have.

Of course, it is too soon to say what the outcome of this empirical work will be. It is possible that such work will lead to the view that industry-wide standards for the scope of restraint clauses may be appropriate. This approach is already taken, to some extent, in the regulation of occupational health and safety, where industry-wide (and specific) standards play a key role. It could also indicate that firm-specific, or position-specific, models should be adopted (with the models informed by more widely applicable guidelines).

Central to the expansion of this empirical work is the understanding that innovation is commonplace. The Productivity Commission reports that over a third of businesses innovate (2007: 707). The 'ordinariness' of innovation means that the know-how and any patents or copyrighted material produced are, for the most part, not going to make anyone rich. Moreover, those that are of great value risk being litigated to the fullest extent possible — such as in the case of *UWA v Gray* ([2009] FCAFC 116). That does not mean that regulation in this space does not matter: the appropriate awarding of the control of innovation goes to the daily existence (and practices) of employers and workers as self-interested and self-reflexive entities functioning in the broader economy. The acknowledgement of the ordinariness of innovation, instead, highlights the importance of everyday norms and practices in constraining actions, and de-emphasises the role of legislation in circumstances where enforcing rights and duties is an expensive and time-consuming process.

6. Conclusion

It is often said that innovation is central to the health of individual firms and of the economy as a whole. The role that workers play in the generation of innovation is similarly uncontroversial. The manner in which the benefits of worker-generated innovation are allocated is, however, a matter of some debate. To date, the discussion has focused on two distinct approaches — what may be termed the *economic* and the *fairness* perspectives. The former may be seen as a justification for the current regime, while the latter has focused on the perceived needs of workers (in large part in opposition to the employers). In this article we have argued that these two approaches are both incomplete. The option presented in their place, the *practice-based* approach, would allow for focus on the specifics of a particular industry, technology type, or workplace. This flexibility means, however, that blanket statements on how the benefits of worker innovation should be allocated are not available. Empirical research is necessary in order to provide statements on the allocation of benefits that are relevant to the industry/workplace the subject of the research. Research of this nature is at the heart of further stages of the larger project of which this article is a part.

Notes

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2. See, for example, the *Copyright Act 1968*, s 35(3), and the *Designs Act 2003*, s 13(1)(b). For a recent decision relating to the allocation of copyright in an employment context, see *EdSonic v Cassidy* [2010] FCA 1008.
3. The recent decision in *University of Western Australia v Gray* [2009] FCAFC 116 shows the currency, and many of the complexities, of this issue.
4. It may be noted that US workers may be in a better situation than Australian workers as they can lay claim to the patents over their inventions (subject to a royalty-free licence in favour of the employer) as long as they are not hired to invent, even if they have used the employer's resources to develop the invention. For a discussion of the relevant US default principles (*Merges* 1999: 5–7).
5. Thoughts may be understood to be actions, or practices, internal to an individual (Foucault 1983: 208).
6. Other reasons that have been cited include 'to obtain financing and boost market valuation'; to use 'as signalling mechanisms'; and 'to deter others from suing' (Lemley and Shapiro 2005: 81).
7. It is certainly true that some employment contracts contain so-called 'cascading' restraint clauses. These clauses contain, in essence, a variety of progressively less weak restraints. They are designed in the knowledge not only that former employees may not wish to challenge the operation of such provisions, but also that it is difficult to prepare a restraint clause with certainty that it will

- be considered valid by a court. Such a clause was considered in the decision of *Australian Insurance Holdings v Chan* [2010] FCA 781.
8. This is not unique for the approaches described in this article. Fairness is problematic as fairness itself is not defined (and perhaps not usefully definable in this context — save for the prescription to respect workers more); and for a critique of the normative aspirations of the psychological contract, see Fisk (2002). The economics approach does not need to engage, in this manner, as it is, substantially, a justification of the status quo.
 9. Fisk (2002: 784) also said of Stone's work on the psychological contract, the 'prospects for the success of her work in achieving our shared version of a more just and equitable employment relationship cannot be adequately assessed without empirical work... work that no one has yet done'.

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