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KEY CONCEPTS AND WHY THEY MATTER SO MUCH TODAY

Intellectual property (IP) has a history bound up with the rise of capitalism. Intellectual property rights (IPRs) extend monopoly control over a range of immaterial things, thereby excluding competition and maintaining or increasing profits for the rights holder. In recent decades neo-liberal policies have deregulated labour markets while strengthening IPR regulation globally. Physical production costs have fallen while value added from IP has risen. Market forces are used to discipline labour, but monopolies have developed to protect property and in particular IP. By using IPRs to halt competition, prohibitions against 'legal' market entry (illegal or pirate market entry may still be available) lead to super-profits (profits in excess of what a competitive market would afford). This situation makes IP infringement increasingly attractive and in some cases the only opportunity for economic participation.

The formation of today's global network society was not simply the liberation of culture, politics and economics from the 'dead hand' of state regulation, whether in the form of western Keynesianism or in the form of the former Soviet Union and its satellites. The post–Cold War construction of today's global world has involved a very particular combination of regulation and deregulation and is not a 'natural' consequence of the end of history or the triumph of the free-market. The establishment of the World Trade Organization (WTO) and its first act, the creation of the Agreement on Trade Related Aspects of Intellectual Property (TRIPS), set up a very particular ratchet that has been neo-liberal globalization's governing principle ever since – on the one hand, the increased global regulation of IPRs and, on the other, the further global deregulation of labour.

This book seeks to trace this ratchet through the myriad types of IP, the construction of the concept of IP itself and how the global ownership of IP may shape our future lives. We will

investigate the role of global IPRs in staking out ownership over the world of ideas. The rise of the global network society, a concept developed by Manuel Castells, has been accompanied by an equal rise in the significance of IPRs as a core set of regulatory principles governing human interaction and inequality in a world where information flows through and beyond traditional boundaries and formal borders. Yet, it would be a mistake to believe that the rise of a network society, where technology makes possible both global connectedness and large-scale automation of what was once the greater part of human labour, inevitably led to the greater economic valuation of 'ideas' relative to 'physical labour'. This has been a path chosen, and yet one that has been challenged and which is not set in stone. In this chapter we lay out the basics of IP, what the concept entails and how the paradoxes of a capitalist IP system shape the global flow of ideas.

GLOBAL NETWORK CAPITALISM AND THE TRIPLE PARADOX OF IP

In today's global network capitalism, IP has become more fundamental than ever for three reasons – the enhanced globalization, digitalization and capitalization of the world – themselves the three key elements in today's global network capitalism. However, each of these elements is contradictory to the point of being paradoxical – at least in terms of the significance of IP. Through all three of these processes, IP is becoming more significant than ever, yet in all three dimensions IP is more seriously hard to control, and is therefore more vulnerable, than it has ever been before.

The Paradox of Globalization for IP: The Transnational Firm, Outsourcing and Global Supply Networks

The neo-liberal form of today's global network capitalism promotes what Robert Frank and Philip Cook (1996) call a 'winner takes all' economy. *Regulation* to protect property is combined with *deregulation* to increase competition between workers. The roll-out of global property protection is particularly focused upon enforcement of IPRs beyond borders. This has fuelled the growth of global IP monopoly holding firms (the world bestriding transnational corporations – TNCs). These companies have ruthlessly outsourced manufacturing across the planet to reduce labour and regulation costs. While production is moved elsewhere to be done by others, TNCs still claim the right to own the finished product and, in the case of IP-protected

goods, the right to be the only ones allowed to sell such products. As such, global deregulation of production and regulation of IP offers TNCs the best of both worlds, minimizing costs while at the same time maximizing profits by retaining control and excluding competition. A handbag designed in London, for example, can now be manufactured in and shipped from China at a labour cost only a tiny fraction of the price the trademark-branded object can then command back in London (or even in China itself). The same cost reduction and global distribution works for medicine, autoparts, cigarettes and clothing.

Nonetheless, the creation of global trade and production networks challenges the ability of IP-rich TNCs to fully control that which they claim to own. Outsourcing might reduce cost and legal liability, but it also makes it harder to control the release of unauthorized extra copies being made and circulated outside the control of the commissioning corporation. Reduced border controls on manufactured goods and the containerization of transportation also increase the scope for such *overproduction* to circulate as widely as *authorized* products. Foreign direct and indirect investment linked to reducing costs and/or outsourcing production also lead to the transfer of IP-rich technology that is then reverse-engineered and reproduced illicitly around the world. Global flows of technical labour also transfer valuable knowledge beyond IP control.

While IP evasion is most evident in the copyright field, where file-sharing software allows digital copies of content to be freely circulated more efficiently than either IP holders or commercial pirates can match (see next section), global supply networks enable making and purchase of generic drugs, counterfeit branded goods and even seeds beyond corporate IP holder control.

Thus, IP's first paradox is that while global trade and production capabilities extend the scope of TNCs to reduce costs and expand markets in ideas, at the same time global supply networks afford alternative global connections that evade IP controls.

The Paradox of Digital Networks for IP: Networks of Control Versus the Empowered Network Individual

What Manuel Castells (2000a) calls the rise of the network society combines a technical mode of development with a continued capitalist mode of production. Cold War arms spending, state welfare expansion, automated manufacturing and international corporate trade expansion (noted above) all fuelled the rise of network computing, but digital networks have themselves

come to drive forward change in new directions. As Castells (2009, 86) notes, the creation of a global digital network media architecture, the collapse of the Soviet Union (and the subsequent roll-out of a totalizing capitalist globalization), as well as a new global framework for trade and IP (the WTO and its first-born TRIPS), all came together in the formation of today's global network capitalism. International trade, itself a prior driver of network development, is also boosted today by the ability not just to coordinate trade globally but to distribute production via digital networks. Digital production, coordination and distribution reduce costs and expand markets. The reduction of costs is at its most extreme in the realm of pure digital goods (software, music, film, television, etc.), but the same market networks for digital goods also intensify the control revolution in the production and distribution of patented, trademarked and other IP-protected goods.

The scale of cost reduction and market expansion afforded by the new digital networks is staggering, but it has an Achilles' heel for the globalized economic system. Just as the perfect profit storm afforded by global digital networks first hit the music industry in the 1980s with the advent of the CD, so it was the music industry that first felt the full force of free digital online file-sharing in the late 1990s (David 2010, 2013). The challenge to IP posed by small-scale actors right down to the level of networked individual consumers has been enhanced and globalized. The rising threat of individual consumers has led to a shift in law towards the prosecution of individuals for IP infringement. Such individualization is a radical departure. In the past the threat of infringement came from commercial actors capable of making the physical objects required to use IP content, not the fans, consumers and end-users of that content. Today's IP infringement has been disintermediated. For example, a computer user can copy any amount of copyright-rich content without the need to press records or manufacture video cassettes, etc. The development of 3D printers (see Rifkin 2014) means that the same globalization of individual agency will soon enable internet users to start downloading trademark fashions, patented drugs and industrial design objects just as they already download or stream music, film television and software.

The network mode of development is not reducible to network capitalism. Legal monopolies have been redrafted and bolstered. However, their technical circumvention continues to outmanoeuvre all such attempts to clamp down. What started in music now encompasses the whole cultural sector and beyond. The second paradox of IP is that while digital content is

formally protected for sale worldwide, digitization also makes content freely available to everyone everywhere.

The Paradox of Capitalism for IP: Property Versus Markets

The most counterintuitive paradox of IP within today's global network capitalism is one within the supposed essential character of capitalism itself, its synthesis of private property and free-markets. It may be assumed that property rights and free-markets are essentially compatible bedfellows within capitalism. If one person is to sell another person a loaf of bread, it must be assumed it is the first person's to sell, and that the second had no right to take it without paying. Property is a necessary condition for market exchange. However, IPRs extend a conception of property (one that will be examined in more detail as this book progresses) beyond any particular object to the right to make copies of that object (and in the case of IPRs – intangible object) This creates monopolies in the provision of those objects protected, prohibiting competition (market entry) and hence enabling higher prices. The extension of property rights over the copying of intangible goods is therefore antithetical to the existence of free-markets, and limits have almost always been placed upon IPRs accordingly. However, in recent years, such limits have been reduced, increasing the significance of the paradox of capitalism in relation to IPRs – strong IP suspends markets in the interests of protecting property.

Colin Crouch (2011, 7) notes the distinction between 'ordo-liberalism' (anti-trust regulation of mergers to prevent competition leading to the suspension of markets such as when dominant players buy up smaller ones and hence create monopoly conditions) and 'neo-liberalism' (which defends private property even to the extent that unregulated competition allows dominant competitors to buy up and/or drive out weaker rivals and hence suspend real market conditions). Ordo-liberalism requires authorities to break up monopolies to preserve free-markets (such as when the US National Football League introduced the 'draft' system to ensure that successful teams in earlier seasons did not monopolize all the good players in the following seasons – perpetuating success but reducing the excitement of the competition). In contrast 'neo-liberalism' promotes – and has been promoted by – the growth of powerful TNCs. Neo-liberal policies have allowed for the elimination of competition by TNCs, promoting their monopoly position with powerful extensions of IP to reduce competition further and, as such, prioritizing property over markets for powerful actors even as deregulated labour markets are used to further discipline non-property owners.

Today's global network capitalism has adopted the neo-liberal pathway. However, there is a catch. IP protection promotes 'pirate' markets and anti-capitalist sharing. IP monopolies inflate prices and so encourage a pirate capitalism which functions as a shadow-market providing consumers with access to IP-protected products at more affordable prices. IPRs also encourage forms of 'anti-capitalist' sharing, which infringes IPRs not for profit but simply to access use-values without their sublimation under exchange-value. Thus, the third paradox is that while IP is necessary to maintain scarcity and hence a 'market' at least in the sense of ideas being sold at all, IP monopolies suspend the free-market itself to defend property rights, but in so doing encourage piracy and sharing alternatives.

THE SIGNIFICANCE OF IP IN A GLOBAL NETWORK WORLD

Global tensions regarding the protection, sharing and use of those things covered by IP laws abound. Take, for example, recent concerns over patenting genes. While not the first of its kind, Myriad Genetics' 1994 and 1995 patents on genes linked to breast cancer were a global legal victory that exemplified the extension of IP from protecting inventions of novel, useful and new things to also protecting the 'discovery' of natural and already existing processes. While the patents were issued in 1994/5, a 2013 US Supreme Court decision revoked Myriad's BRCA gene patents (but not the cDNA patents), thus marking a momentary retreat from the extension of IP ownership over the 'natural' world (Barraclough 2013). However, even as Myriad lost its battle to own the BRCA gene, multiple other living organisms and genetic sequences remain patented and thus controlled via IP laws (Leong 2014).

A second example concerns copyright. The 1998 US Digital Millennium Copyright Act, which signed into domestic US law the conditions of the WTO's TRIPS treaty, criminalized the creation and use of any technology that could be used to violate copyright. This anti-circumvention legislation targets those technologies that have the capacity to unlock the digital rights management associated with control of music, open e-books so that blind readers can have access to the text and offer methods for users to more freely use their devices. While the full impact of anti-circumvention laws has been tempered by 'dual use', 'fair use' and/or 'fair dealing' rulings which create 'safe harbours' and space for expression, again, IP lobbyists are pressing hard to extend, widen and deepen protections and further contain what they claim to be unauthorized use of culture.

Globally, not all countries have adopted the same attitude towards IP protection. Brazil's 2014 legalization of 'generic' medicines challenges the global expansion of transnational pharmaceutical companies' IP claims. In the face of resistance, treaties like the highly secretive Transatlantic Trade and Investment Partnership (TTIP) between the US and EU, and Trans-Pacific Partnership (TPP) between the US and East Asia seek to bind states into upholding the IPRs of transnational firms, rights that cover a diversity of products from medicines, seeds, designer goods, music, books, computer programs and much more. Such transnational treaties, negotiated in secret with the interests of industry in clear sight, are designed to bypass resistance to the expansion of IP, even if not always successfully. Resistance to IP efforts to establish monopoly controls via transnational agreements remain globally significant. These resistances in the name of citizen rights and access to such things as affordable health care, education; the right to participate in cultural life and to freedom of expression present a different global approach to development concerns.

These tensions are at the heart of a world in which information as property has become central to the global political economy. The global flow of goods – accompanied by the abstraction of property rights so that IP coverage is increasingly extended as the distinctions among 'ideas', 'tangible expressions' and 'physical carriers' is diminished, and even more importantly the right to reproduce, innovate upon or copy these objects – makes essential a global debate over the scope and limitation of IPRs in a free society and culture.

WHAT ARE IPR'S?

IP is a social contract, a legal protection extended by society to the holder(s) of such rights. This protection affords the holder certain privileges when it comes to using and/or selling access to use. IP protection, therefore, constitutes a limitation on use by others such that the IPR holder has some degree of monopoly control over that to which the rights pertain. The duration of such monopoly controls varied greatly historically and between different forms of IP. The extent of control has also varied between states. Recent attempts to 'harmonize' such differences between national IP regimes have highlighted the significance of IP today as well as the significance of the drivers that have pushed for such a global regime (Halbert 1999; May 2000; Sell 2003; Richards 2004; Gervais 2007, 2014).

All rights and laws are social contracts. Ideas of natural justice and claims to 'find' universal rights that transcend the specific conventions of particular regimes, while potentially ethically valid (Held 2010), are only substantiated if enforced by social institutions (Rawls 1971). That all rights are social contracts is particularly important to recall in the case of IP, as debates about IP get confused when the question of whether IP should be seen as 'property' gets raised. It is often forgotten that physical 'property' is also just a legal (and therefore a social) convention. Contemporary debates over IP suggest that a similar erasure of the social construction of rights has occurred in this field as well.

Intellectual?

What counts as 'intellectual' in the case of IPRs? The term intellectual here is used to refer to products of the human mind. By product is meant a tangible expression of mental activity, not 'an idea' in abstraction. Copyright covers expressions, not pure ideas; patents cover manifestations of invention shown to be useful, original and non-obvious, not speculative inventions that cannot be seen to 'work'; trademarks cover recognizable signs, not general symbols, etc. However, the distinctions between an idea and its expression, as between an invention and a discovery, or between a specific sign and a generic symbol, are not clear-cut and so become the substance of ongoing and significant dispute in courts, legislatures and in academic commentary. In addition to its increasing economic significance, temporal extension and geographical spread, attempts to widen and deepen the intellectual 'reach' of IPRs (what gets covered) can be seen as a move towards what we have termed 'owning the world of ideas'.

The distinctions between general idea/specific expression, discovery/invention, specific/generic signs, etc., are not themselves self-evident. Thus, decisions have to be made to balance the danger of offering monopoly control over too much of general culture or the natural world against the opposite danger of offering too little incentive to those that would create novelty and progress in 'ideas'. Offering protection to products of the mind seeks to afford such products something of the security physical things possess by dint of firstly their sheer physical form and secondly the application of the notion of 'property' to them (and hence the protection of law). Taking an 'idea' is easier than taking a table or even a spoon, though taking an idea is not the same as removing it, as would be the case if one were to 'take' a spoon. To take an idea is to copy it, not to remove it. Also, extending property rights to non-things is problematic for the same reason it may seem necessary in the first place. If the expression of

an idea, of an invention or of a recognizable sign needs protection because it can be so easily copied, there is a danger that overly protecting expressions/inventions/signs might itself choke off any future creative work/invention/trade. Future works of the mind will almost inevitably draw upon and resemble past works. Too long or too extensive a form of protection would make all future creativity an act of infringement.

Strong IP defenders seek to minimize the distinction between idea and expression, between discovery and invention and between specific identifiers and generic symbols, signs and language itself, so as to extend protection as far 'up' into 'ideas' as possible (Fuller and Lipinska 2014). Strong IP critics (Vaidhyanathan 2003; Lessig 2005) seek to maximize these distinctions even to the point of detachment (such that every 'expression' is seen as unique and hence remains totally 'free' within a shared and common culture). The scope of protection remains a constant tension underlying the global debate on IP.

Property?

Despite claims to the contrary and the general belief that one might be able to assert a property right over ideas, IP is not 'property' pure and simple. A distinction is drawn between IP and physical property. Whereas property rights over a house, a car or a spoon are generally 'absolute' and 'perpetual', IPRs are designed to be limited. Ownership in ideas, even when this is limited to creative, functional or recognizable manifestations, creates a monopoly in 'knowledge' that inhibits future creativity and thus is not the same as owning a house, a car or a spoon.

Most particularly, IPRs are, with one exception, time-limited. As such, IPRs are manifestly balanced 'social contracts' between society and creators/inventors. Society extends 'quasi-property' protection to rights holders as a reward/incentive for their efforts. In exchange, the creator/inventor's work eventually becomes the common property of society when the protection runs out. This balancing of interests between creator and society makes IPRs more obviously 'social contracts' than is the case with physical property – where the term 'private property' emphasises owner rights over the balancing of interests (May and Sell 2006).

Time-limitedness in IPRs is then distinct from perpetual ownership in physical property. However, there are exceptions. Trademarks are perpetual so long as they remain in use, and physical property rights are not always absolute and may not always be perpetual, as various

environmental, planning/zoning, squatting and adverse possession regulations attest. However, historically and in contemporary debates over IP, the question of whether IPRs should or should not be perpetual has been and is discussed in terms of whether or not IP should be understood as property 'like any other'. Yet, 'perpetual' property rights in things are also a social contract, not a natural 'property' of things (such as apples having the property of sweetness, or birds naturally having the property of flight). All legal protections are 'social' contracts. In our capitalist societies, perpetual property rights in things have come to be taken as 'natural' and hence a benchmark against which to measure the seemingly 'artificial' construction of less absolute rights (Piketty 2014). However, claiming something is a natural right does not make it so. As we will discuss in the next chapter, it is precisely in a context where claims that IPRs are 'property' rights are so readily asserted, taken for granted and assumed to thereby be natural that understanding the social nature of both IP and physical property rights is important.

Rights?

The terms 'intellectual' and 'property' stand as totemic symbols within culture and economics (Phythian-Adams 2014). Similarly, 'rights' carry a sense of absolute, universal and inalienable deserts in and by means of politics and law, just as the term 'property' stands as an absolute for some in the economic domain. Those who hold most to the idea that property ownership should be a fundamental human right find absolute claims to other rights (such as to education, shelter and asylum) an affront to property rights when taxation is levied on property holders to fund these other social rights (Hayek 1946; Friedman 2002). However, Thomas Piketty's (2014) international bestseller advocating global and progressive taxation on wealth and its reception indicates a renewed debate over the balance to be struck between property rights and other social rights.

The demand that IPRs should be upheld in countries other than that of the rights holder parallels claims that citizens (or stateless persons) should have their rights upheld in, and even by, regimes other than their own (Held 2010). This extension is termed 'national treatment'. However, when rights appear to clash as they sometimes do between the variety of property and social rights, how might they be balanced? Are some rights inalienable, while others can and should be traded/set aside (see Brown 2014)? Advocates of strong IPRs argue that IPRs, like physical property rights, should be understood as 'universal human rights' alongside universal rights such as those to shelter, food, education and free expression (Helfer and Austin

2011). If so, all member states of the UN would have an obligation to uphold foreign and domestic IPRs just as they are required to shelter refugees, feed the starving and educate children. IP critics argue that IPRs are lesser rights than those that warrant access to food, medicine and education, and, as such, IPRs may reasonably be limited/suspended if in doing so greater fulfilment of 'higher' material rights (such as when medical patents are suspended in order to supply affordable health care – Halbert 2005, 87–111) and non-material rights (such as in accessing educational and cultural resources – Álvarez 2014) is achieved.

Just as the terms 'intellectual' and 'property' fail to give the term 'intellectual property rights' absolute fixity, neither does the term 'rights'. Rights may or may not be extended to cover certain groups for certain entitlements, and rights may or may not be traded, overridden or treated as 'universal'. What has unfolded over time and what currently stands is a balance of competing claims and counterclaims made by shifting alliances of social actors. As such, just as IPRs are central to maintaining and intensifying contemporary global network capitalism, so it is power and resistance within global network society that is key to shaping the present and future of IPRs (Halbert 2005; David 2010).

Who?

Protecting IPRs is not always the same as protecting the artist/inventor who produced the work. IPRs can be 'alienated'. Authors and musicians sell copyrights to publishers and record labels in exchange for royalties. Employers can claim ownership over the innovations of their staff. Universities can sell their IPRs to private companies. Over time there has been a consolidation of IPRs into corporate hands (Halbert 2014).

Generally speaking, IPRs are held by individuals who create something new, though the bar for creativity in copyright is set quite low. The copyright owner, however, controls the reproduction of a copyrighted work and also controls many possible transformative uses of their work. So, for example, if a new work of art is 'substantially similar' to an already existing work, it may be deemed a copyright infringement by the courts. This was the case in the US court decision in *Rogers v. Koons* (1992), where Jeff Koons produced a sculpture based upon a postcard he found entitled 'A String of Puppies'. Despite the fact Koons argued his work was transformative, in part because it was a sculpture and not a photograph, and in part because it was a parody of American banality, the court found that he had infringed the copyright of the photographer.

Patents also are designed to protect that which is novel. However, patents especially those written broadly may cover a substantial range of possible future products. In patent law, the demand for novelty in inventions should prevent possible claims of ownership over aspects of the common culture and prior art. Patent law specifically prohibits patents on those inventions seen as part of prior art. However, while in theory the public domain should be protected, in practice there have been numerous cases where indigenous and traditional community practices have been prey to 'biopiracy/bioprospecting' and other forms of cultural appropriation. Indigenous knowledge in the 'public domain' where existing group knowledge is simply copied by outsiders with no reward or recognition being 'paid' to the originators/custodians of that knowledge is one of the political dilemmas created by a capitalist system of IPRs (Shiva 1997).

Recent additions to the stable of IPRs include rights over geographical indicators (GIs) and other possible mechanisms for protecting traditional knowledge (TK). Such rights are in effect assigned to reward custodians for prior innovations and, as such, differ markedly from the logic/rationale given for IPRs in general, which is to reward innovation rather than to reward preservation. That trademarks can be issued in perpetuity also incentivizes preservation over innovation.

Moves to further extend both copyright and patent terms mean the holder of IPRs is increasingly the preserver of old knowledge rather than the creator of new knowledge. Minimizing the distinction between expression and idea, and making claims far more generic, will also give today's copyright holder far greater scope to claim future expressions that impinge their rights. The same will be true if invention is allowed to further extend into what was once deemed discovery, as even the basic building blocks of reality will become subject to patent thickets (laying down speculative patent claims on basic knowledge so that future developments which have to 'pass through' the thicket find themselves having to pay substantial 'rent').

Why?

Laws and rights are social contracts supposedly protecting members of society, however defined. Such a contract may be said to reflect natural or divine order, a bulwark against a state of nature that would otherwise be 'nasty, brutish and short' (Hobbes 2008), or a distortion of natural harmony in the interests of powerful actors (Rousseau 2008). The Hobbesian vision of

an absolute monarch issuing arbitrary rights, patents and monopolies to favoured subjects and others to further the strategic interest of the state describes rather well the world prior to the legal formalization of IPRs – which started in the 18th century.

Regarding the legal formalization of such IPRs, popular rationales refer back to Locke (1988) and/or Hegel (1991). For Locke, rights over property extend from the investment of labour. Property rights are seen as 'natural justice' based upon the effort undertaken to establish physical and, by extension, mental properties. For Hegel, less in contrast than in (historical but not natural) extension of Locke, ownership rights in ideas should be accorded as a moral extension of the creator's personality (itself – for Hegel – a uniquely modern – but no less legitimate for that – recognized identity), a right to be recognized as the creator as indicated by the fact the work carries 'your' name.

In Locke's labour theory, tilling the soil creates a claim to that land (in colonial conditions blurring the distinction between discovery and creation – Shiva 1997). Whether developing a new plough gives rights over future uses of all such ploughs is less clearly the logical extension of Locke's view because the development of a new plough is contingent upon earlier versions. Thus to accommodate these more social aspects of immaterial property, as noted above, some form of time limit on 'ownership' in ideas might follow, even if Locke's theory of natural justice regarding physical property is typically regarded as warranting perpetual ownership. The time limit demarcates the difference between labour spent making a particular physical object property (which remains 'rivalrous', meaning it cannot be used by others without reducing its utility to the first user) and time spent on an idea that – if successful – could be used by everyone at the same time – a 'non-rivalrous' good. A perpetual monopoly over a 'non-rivalrous' good would create a reward to its inventor so great, and hence a cost to society so high, that society might reasonably feel that granting protection over that innovation should only be for a fixed term. Otherwise, a perpetual monopoly will force everyone to keep paying monopoly rents or remain excluded from accessing the idea.

It should be noted that interpretations of Locke are divided. Some emphasise Locke's argument for 'natural justice' in property ownership based on effort expended and assert that such 'natural justice' is as true for ideas as for physical products. Such a view sees rights in IP as no less a natural and perhaps perpetual right than those over physical things. This extension of Locke is typically referred to as the 'natural rights' theory in IP. While never absolute, this

view has held greater sway with British law makers than with legislators elsewhere. Where this view is most strongly held is among IP holders themselves. In contrast to the 'natural rights' interpretation of Locke when extended to IP, 'utilitarian' interpreters of Locke start from his attention to the investment made in the creation of things (physical and intellectual) but draw a stronger distinction between the potential for individual effort in making specific things and the interconnected nature of making mental 'things', both in their original creation and in the subsequent creation of new ideas thereafter. Utilitarian philosophers (such as Jeremy Bentham and John Stuart Mill) accepted Locke's base theory of property but sought to balance it against a defence of markets and the wider distribution of utility. As full property rights over an idea would give control of all applications of it, not just the individual and first version (in parallel to the making of a singular physical thing), utilitarian theory draws a radical distinction between property in physical things and a more limited conception of ownership in immaterial things. This utilitarian view was always dominant in the US, and its baseline distinction – such that IP be time-limited in most instances to prevent undue concentration of power – is generally accepted in law, even while IP holders continue to press (rather self-servingly) for what they think are their 'natural rights' for perpetual protection.

The Hegelian personality theory, in contrast, asserts that even if our book is extended a limited copyright protection, our names should remain attached to the work even after the copyright runs out. The Hegelian 'moral rights' model moves beyond simple economic considerations of IPRs. Using a Lockean analysis, IPRs are justified because they reward effort and/or if they strike the right balance between rewarding past efforts, allowing future innovations and enabling maximum utility of new ideas. For Hegel, a creation should always be seen as an extension of its creator's personality and hence carry their name in perpetuity. Whether emphasis upon balance or perpetual recognition in IPRs warrant differences over limited or perpetual economic control in creations/inventions or whether it is just a distinction between economic (payment) and cultural (recognition) as 'valuation' is another bone of contention. A follower of Rousseau would most likely conclude that all such attempts to legislate for who can and cannot use the products of the human mind diminish the common culture and simply enforce the interests of dominant actors.

KEY FORMS, RANGE AND DOMAINS

What then are the key forms of IP and what do these cover?

Copyright protects creative expression, covering textual, visual, musical and other 'works' (such as computer games and functional software). Copyright does not simply apply to 'fictional' work but protects 'non-necessary' form – a photographer's image of a landscape, or a historian's description of the past. Copyright does not require registration. An expression must be fixed in a tangible form, but the law does not require an assessment of quality, only that it is the original expression of the author who fixed it. In other words, a copyrighted work does not have to be good, but it does have to be unique.

Moral rights associated with copyright protect the author's right to be named as author and to ensure the work in their name is not corrupted/distorted. Additionally, moral rights may mean that creators of works retain a commercial interest in the resale of original works. In France, resale of a painting sees the artist receiving a part of the resale value – unlike in, for example, the UK. The US does not fully recognize the moral rights of authors, despite provisions of the Berne Convention requiring doing so.

Patent protects 'inventions' (although the discovery/invention distinction is as contested as the idea/expression distinction is in copyright). Unlike copyright, all patents require registration and are 'granted' by 'Patent Offices' that typically require applications to prove the invention meets specific criteria. Specifically, the invention must be non-obvious, novel and have utility ('that' it works, 'how' it works and what 'use' it serves). Unlike copyright, patent typically assumes 'progress' – not just novelty but 'improvement'.

Trademark is an IPR protecting brand images, associated logos, signatures, names, sounds, etc. Infringement of trademark is a form of counterfeiting – parallel to piracy in relation to commercial copyright infringement. Counterfeiting luxury branded goods is just that, while counterfeiting medicines and technical products most likely also involves patent infringement. Generic drugs however may infringe a patent but not the trademark. Trademarks, unlike other IPRs, can be perpetual.

Trade secrets may or may not be secret but refer to recipes and product particularities that would not be sufficiently technical to warrant patent protection, nor sufficiently creative to warrant copyright protection. Trade secrets relate to what makes a product distinctive and which is 'recognized' as stemming from a unique and traditional aspect of a particular maker rather than their competitors. The use of this IPR against 'industrial espionage' can become rife when free access to information is restricted.

GIs parallel trademarks but focus on place of origin in relation to the use of certain product names. Champagne is the most famous example of a product that can only carry that name if it comes from the Champagne region of France. GIs originated in European law and their globalization in recent years has been resisted by US corporations that prioritize universal copyrights and patents. This tension between IPRs as a defence of tradition and regional location against universal corporate ownership via global copyright and patent laws has been exacerbated by the extension of GIs as a defence of local, traditional and indigenous knowledge (commonly combined in the expression of 'traditional knowledge') by and for communities in the 'global south'.

Plant breeders' rights refer to IPRs that extend protection to strains of seed that have been selectively bred and hybridized. Such rights have allowed breeders to claim ownership over seed and hence to try and prevent replanting of seeds harvested from current crops. Such legal attempts to control farmers have been combined with more recent attempts to genetically engineer patented seed that cannot be replanted, but these things combined to produce a counter movement for *farmers' rights* which seeks to parallel the extension of rights to TK as noted in the previous paragraph.

Industrial designs cover a wide range of applied arts and manufactured objects deemed unsuitable for either copyright or patent on the grounds that 'designs' reflect more functional necessity than innovation relative to the pure arts or inventions. A chair has a number of functional characteristics that largely determine its design. Some countries (UK) offer no protection to stylized 'designer' furniture manufacturers, while others (Italy) protect 'style' much more, even in functional objects.

BINARIES IN DISPUTE

The notion of IP, then, embodies a number of crucial tensions that will be explored in the remainder of this work. These can be summarized as follows:

Between expression and idea. As has been pointed out, it is more than a purely abstract question as to where the distinction between expressions and ideas should be drawn. If 'expression' is loosely understood, such that anything with the look and feel of a prior expression could be said to be an infringement, then more control is given to the owner of the prior expression. Does, for example, any children's book about wizard schools infringe on

Harry Potter? A strong demarcation between idea and expression, one which could make any difference between two manifestations of an idea sufficient to establish an independent copyright claim, would leave every expression unique and hence immune to claims to be infringing. Similarly, when designer labels use particular colours and words in association with their product, at what point does such visual content become 'theirs'? While drawing a line between where an idea ends and a specific expression begins can be problematic, abolishing the idea/expression distinction could allow the full ownership of the world of ideas to become a reality, which would be equally problematic. As such, you could not 'Just do it'.

Between invention and discovery. If an invention allows use of already existing, but previously invisible, objects, where does ownership end? Should the inventor just own the technique used to 'discover' these naturally occurring objects? Or, should ownership extend over the objects themselves? Whereas in the macro-world of continents and forests the invention/discovery distinction has been robustly maintained (in IP law at least – if not when modern farming techniques ideologically excused colonial land theft), in the micro-world of particles, genes and bacteria, recent legal decisions have fundamentally blurred this distinction. Rather, in parallel with owning 'ideas' through the undoing of the idea/expression dichotomy, patenting microorganisms makes it possible for IPRs to flow 'upstream' from the specific invention to the source – reality itself. Rights holders could own the world via owning ideas as manifested in naturally occurring objects that were previously unpatentable. Everyone else must now pay rent to stand on the shoulders of such giants.

Between monopoly and free-markets. While a capitalist society combines property ownership and free-markets, the two are not necessarily aligned. The promotion of free-markets requires regulation of monopolies, but protection of IPRs requires restriction on market entry through regulation of 'free' copying. IP protects non-rivalrous goods – those that have no natural scarcity because an expression/invention can be used by an infinite number of people at the same time without diminishing its functional utility. Free access to such non-rivalrous goods, however, would undermine the exchange value of such goods and so supplies must be limited to maintain a price. IPRs represent a suspension of free-markets in favour of monopolies in the interest of rewarding rights holders who it is assumed were motivated to innovate because they would be granted such monopoly rights. Such a control of markets may require additional interventions to prevent these monopolies from overly exploiting the suspension of competition. Free-market 'pirates' are a threat to IP concentration – to put it

another way, such pirates bring lower prices to consumers labouring under the yoke of monopoly rents. Perpetual IPRs would indefinitely suspend markets and uphold IP at the expense of free-market competition. Imposing time-limits to monopolies reintroduces a possible ground for markets, but if IPRs are totally suspended then the benefits of property protection in enabling free-market entry may also be disrupted.

Between creators and the wider society. IPRs give protection to immaterial things that might otherwise be copied easily without limit. However, the vulnerability of immaterial goods – their ability to be replicated widely – which is said to warrant IPR protection is also what makes such protection so valuable (and potentially dangerous) if it could be achieved. The lock on your door protects far less than could be gained from owning rights over lock mechanisms in general.

Attempts to collapse IP into property in general (by whittling away at limits) parallel attempts to extend protection of expression closer and closer to basic ideas, collapsing discovery into invention and the neo-liberal prioritizing of corporate monopoly rights over price-regulating (i.e. genuinely competitive) markets (Crouch 2004, 2011). While IPRs are a social contract like any other property right, particular attention has been paid to the need to regulate rights over immaterial things because their unlimited extension (in time) would be so costly to the wider society (an unlimited monopoly on something that itself has no natural limits in its replication).

CONCLUSIONS

Global network capitalism is characterized by global flows and the transition from the primacy of physical goods to informational content as the key to value-adding profitability. As such, global deregulation of markets and global regulation of IPRs stand as the two reinforcing, if also contradictory, pillars of our current world order. The increased economic value of immaterial content, which parallels the devaluation of increasingly automated and interchangeable products and processes of production, is no natural effect of any 'post-industrial' or 'globalizing' logic as such. Technical automation could see immaterial content's economic value decline alongside, if not more rapidly than, the price of automated physical goods. Automation can just as (if not more) easily mass-produce films, music, chemical formulae and computer games as it can produce the cameras, CD players, bottles and consoles

that might contain them (and very much does so). Fully deregulated global flows would see immaterial goods sold at free-market prices, prices which might well be very little indeed, if the same forces of deregulation as applied to labour markets and production regimes worldwide were applied to products of the mind. To some degree such free-market pricing happens in the form of free (but copyright infringing) file-sharing and live-streaming. It can also be found in trademark and patent infringing markets for 'knock off' designer goods, generic and counterfeit medicines etc. However, to the extent global network capitalism can remain dominant, it does so through the global regulation of property, including IP, while deregulating labour rights and global production networks. IPRs and their global enforcement are central to the ongoing domination of global network capitalism.

IPRs are social conventions that regulate access and use of the products of the human mind to promote/balance particular interests and must be studied as such. IPRs cover a range of immaterial content (from songs and stories to drugs and seeds). They take a number of forms (from copyright and trademarks to patents and breeders' rights). Their form, coverage and duration vary (between types, countries and across the years). In addition, finally, the rationales put forward to justify their existence, form and coverage are both divergent and contested. This chapter has sought to show that the very elements of the term itself, the notions of 'intellectual', 'property' and 'rights', are sites of dispute, not the foundations of any clear and natural basis for compelling assent to any particular regime. The centrality of IPRs in the global regulation of property, even while labour and production are deregulated, and the attempts by corporate lobbies and pliant states to present IPRs as naturally universal and absolute make it all the more necessary to bring such misrepresentations into question.

Where the boundary lies between expression and idea, between invention and discovery and between monopoly property rights in providing certain goods and the role of markets in allowing new entrants and price competition is neither natural nor necessary. Global network capitalism itself is riddled with both contradiction and resistance: between protecting property and promoting competition, between expanding markets via global networks and shoring up such channels against their alternative uses as conduits for highly 'efficient' free-sharing, and between an increasingly global regulation regime and the capacity of networked individuals to bypass both corporate intermediaries and harmonized regimes of control.

Chapter 2, on the history and globalization of IPRs in general, will develop this 'denaturalization' account. Chapters 3 (copyright), 4 (patents) and 5 (trademarks, GIs and design rights) will explore in more detail the specifics of ongoing disputes in these fields. In each case IPRs are shown to be central to contemporary global network capitalism's attempts to regulate property while deregulating labour rights and production regimes. However, at the same time each chapter highlights resistance to and contradiction within such attempts at 'owning the world of ideas'.

As this book will set out, since the end of the Cold War and through the creation of WTO and TRIPS, a new neo-liberal framework for global network capitalism started to be put in place. At the core of this new regime has been increased regulation (protection) of IP and decreased regulation (a reduction in protection) for labour. IP extension in duration, depth and geographical reach has been at the heart of all this, yet global circulation of people and ideas challenges IP control even as it also offers potential for greater profit. Digital networks similarly cut both ways, and protecting IP itself undermines free-market principles even while it does encourage unprincipled 'pirate' capitalism and anti-market sharing.

Just as the reality of global IP extension is fragile and contradictory, so also is the supposed justification for having IP protection at all. This book will highlight the weakness of claims that IP protection actually incentivizes invention and creativity more than it prohibits them and challenge the IP protectionists' argument that strong IP delivers maximum utility (overall benefits), an open and free culture, fair access to medicines, development enabling technology and/or environmentally friendly technology transfer.

As such, while significant elements of a global IP regime have been put in place, this regime is neither secure in practice nor defensible in principle. While IP protectionist lobbies remain well-resourced and influential players in business circles, the corridors of state and within international and global forums, resistance too is strong and growing, within both formal institutional arenas and in the alternative practices of those who simply bypass IP in their everyday sharing and purchasing.

Efforts at further roll-out of IP extension – in time, space and depth – continue, but such efforts have experienced significant opposition and have in some cases been defeated – at least in the short term. Beyond simply preventing further roll-out, some instances of roll-back have been achieved. Suspension and even abolition of IP in particular places and cases has also taken

place (such as with generic drug licencing for essential medicines by some developing countries). One final scenario, prefigured in the everyday practices of many millions, is simply the withering relevance of 'global' laws in actually regulating the everyday lives of most people, not so much abolishing overextended legal protectionism but rather ignoring its claims – and being able to ignore them when such laws cannot be enforced. In this scenario claiming the right to own the world of ideas is just a very extreme case of global hubris. King Canute may have ordered the tide not to come in just to show that his law really did not govern reality. Our rulers appear to have no such modesty. Claiming to own the world of ideas they appear not to have noticed that their feet are getting wet, or if they have noticed they still believe they have the right and power to command that the tide turns back.