

INVENTING LAW: THE CREATION OF LEGAL PHILOSOPHIES IN
THE AMERICAN AND EUROPEAN PATENT SYSTEMS

by

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For Orion Gustav Ibsen,

My son who came to life with my dissertation but quickly outran it

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ABSTRACT

Although the patent systems of the United States and Europe have become continuously more similar their underlying legal philosophy continues to be different. This study examines how the two patent philosophies emerged out of different social situations and why and how patent systems can develop similar formal arrangements without experiencing a similar harmonization of underlying philosophy.

As patent laws are historically unique to western culture it provides a lens through which to observe its relative social appreciation of industry, technology, commerce, and the role of the law. This study argues that the two separate ‘patent philosophies’ emerged as results of unique historical situations and that the reason as to why they have been able to maintain their distinct natures is that a similar ideological pressure has not been present since.

The patent law of the United States, which is based on an ‘inventor philosophy’, was the product of the ideological currents of the movement toward American independence. This philosophy is friendly to inventors and entrust them with all responsibility over their inventions. Its individualistic and democratic character resonated well with the country’s anti-colonial and anti-monarchical political campaign. A similar ideological pressure to revise fundamental opinions on technology and law has not emerged since.

Virtually all European nations are today part of the European Patent Organization which administers the world’s only true regional patent office. This European system is

based on an ‘invention philosophy’ which was designed in the late 19th century by German industrialists. This philosophy is anti-monopoly and sees the State as a guardian of the public benefits which arise from technological novelties. Due to German industrial efficiency, it was used to model European patent law.

Although both philosophies have proved viable, the case of patent law suggests that the role of legal philosophy must be reduced. Apart from being crucial in the creation of a new legal system, this study argues for the need to drastically reconsider the relationship between substantive and formal law. Both patent philosophies have consistently lost importance over time to the point where they today support two formally very similar systems.

CHAPTER 1 – INTRODUCTION

Patent Philosophy

“Patent Law”, an expert on the subject noted over a century ago, “admits of less reduction to precise rules and axioms than any other branch of jurisprudence” (Curtis 1873:v). Some of this difficulty undoubtedly has to do with the complicated technical nature of patent law’s subject matter, but more important is the fact that the legal justification for patents has an inherent tension at its core.

Put differently, oppositional ideological forces which pull in opposite directions form a constitutive element of patent philosophy. On the one hand, patent law protects the exclusive right to information with the result that the interests of “the few will thus be favored”, as James Madison put it in a letter to Thomas Jefferson.

On the other, this right is not construed similarly to other forms of property, which are considered to be natural entitlements which must be recognized by any liberal and democratic society worthy of its name. Instead, the patent property is thought to be the only way to assure that others in society will share ownership to protected information *after* the patent has lapsed. Patents are justified with reference to both simultaneously, despite the fact that they are logical opposites. It is thus subject to the “inevitable paradox”, that “in order to stimulate invention [it] must inhibit diffusion” (MacLeod 1991:885).

Patent philosophy is thus both individualist and collectivist, a protection of personal and societal rights at the same time. Other rights too, of course, could be

characterized as dualistic in this way: freedom to own and invest in property is both thought to be a foundational individualistic principle of democratic governance and, at the same time, a source of economic growth and prosperity of society in the aggregate.

This type duality is different than the one in patent philosophy, though, since it is not meted out from an inherent ideological tension. The right to ownership is the fundamental justification and it seen as an atomic entity in the larger political edifice; economic prosperity is a secondary concern which only bolsters the legitimacy of ownership. The unavoidable restrictions on property ownership do not form an integral part of its ideological status but are the results of practical and utilitarian considerations.

Neither is freedom to own property losing or gaining political support in accordance with fluctuations in the national economy. Patent philosophy, on its part, has experienced just that; its charters and provisions have been shaped under constant negotiation and experience with industrial development, and under pressure from strong interest groups. The patent system survives because it serves the social purpose of technological development, but the way it accomplishes this is by favoring certain individuals. No one has successfully proposed to give the State full control over the patent property because individual rights of inventors and applicants have always stood at the core of the patent system too.

A patent philosophy is the ideological balance of this ideological tension. It is the justification and guide as to how the rights of society and the rights of individuals must be weighed and ordered. It is therefore a compromise, though not as conventionally

understood, that is, as settlement between two opposite opinions. It is not so because patent philosophy constitutes a separate and independent thought-system.

In other words, it is not a balance struck between those who desire that individuals should have automatic, perpetual, and exclusive rights to every new technical idea they should have and, on the other, those who wish that the State should assure that all information should be made available to everyone for free or that it should be able to do with it as it sees fit.

The simple reason is that it is not so because no one is demanding either alternative. Or, more precisely, neither argument is being taken seriously in contemporary politics; in 1851, on the other hand, Belgian professor Jobard did argue for complete control over one's ideas – what he called the “*monoautopole*” – as a human right. On the other hand, the present Open Source movement has free access to software technology as its foundational principle. But, in reality, life-time patents have been permanently abolished in all countries for nearly two centuries, and no country is considering a no-patent alternative – even the Soviet Union had a patent system in place.

A patent philosophy must therefore be understood as a complete system of legal justification for the rights and conditions of patenting, and as the basis for a patent system with which all laws and regulations must be in accordance. It expresses the grounds for legitimacy for the awarding of a temporal monopoly to pieces of technical information.

Research Questions

It is true that the world's patent laws have become more similar and that patent philosophy is not an area of radical controversy in the present age. Still, without ideological support, patent systems would encounter massive problems for the legislature, the courts, and patent offices themselves.

Moreover, patent law has to deal with constantly changing technology and new forms of commercial exploitation by patent holders. In forging its future treatment of industries, inventors and investors, patent law needs yardsticks on which to evaluate its situation and stake its course into the future. Patent philosophy is one such yardstick, the one stuck deepest into the ground and reaching highest above it.

Today, there are two patent philosophies worldwide to which all the national patent systems adhere. That is not to say that all patent offices can be neatly separated into one of these philosophies, nor are the two logics fundamentally opposed to one another in practice. Nonetheless, the unique characteristics of both philosophies have existed, despite the fact that they rubbed elbows for more than a century of international politics and been surrounded by the more or less the same technological and industrial environment and subjected to the pressure of the same powerful actors.

This study investigates the histories of these two patent philosophies. In doing so, three related research questions are addressed, two of which require little theoretical explanation or historical context: (1) *what are the patent philosophies of today?* (2) *why do they differ?* The first question requests a qualitative and a comparative exercise, the second historical exposition.

The third research question emerges from the fact that patent laws have become increasingly similar in most areas throughout the past hundred or so years. A myriad of different national laws existed until World War II, but have since grown more alike and adopted similar standards and procedures. The two philosophies have not, on the other hand changed to the same extent. Hence, (3) *how can legal philosophies remain distinct while legal form and procedure is becoming assimilated?* Only careful historical and theoretical analytical mediation is able to shed light on this question.

Relevance

The world has witnessed an explosion in patenting activity over the past century; both in terms of number of applications and granted patents, court litigation, spread of patent law globally, and the kinds of industries eligible for protection. Patent law has always contained a global scope but international contact between different regimes has increased steadily in pace with the growth of patents commercially and expansion of their geopolitical importance.

Virtually all nation states have today erected systems for protection on technical ideas through temporal patent monopolies. This institution is inherently western in both origin and in the creation of legal templates that has later on been adopted world-wide.

Social scientists who have investigated patent law have highlighted the political struggle underlying its expanding area and global application (most thoroughly by May and Sell 2006). To the extent that they have focused on the ideology underlying patent

systems they have mostly inferred ‘Western’ individualism and technological enthusiasm (for instance, Friedland 2001; Strathern 2001).

Economists have been more concerned, broadly, with the efficiency of intellectual property arrangement and conditions for wealth maximization (for instance Landes and Posner 2003). Legal scholars, on their part, have paid close attention to details of existing patent institutions (for instance Bently and Sherman 2004) and historians have investigated their origins (for instance Gispén 2002; Khan 2009; Kranakis 2007).

All researchers have provided unique and important insights, but little has been done to try to consolidate the different analytical directions. The claim here is that the understanding of patents will be more thorough if this is done, and it will yield new understandings as to how and when ideology, power, and law interact to produce certain institutional arrangements.

As the historical and theoretical sections will establish, patent law has followed a unique trajectory throughout which i the national and international levels have interacted. Patent law also contradicts one of the standards assumptions about the relationship between legal ideology and formal law.

This study thus connects with a variety of theories by drawing insights and directions from different research traditions. It is of relevance to legal history, sociological understandings of ideology and law, and cultural studies into the role of science and technology in society.

CHAPTER 2 – THE LOGIC OF PATENTS

General

A Patent is frequently referred to as a “Faustian pact” between a patentee and the State (Bently and Sherman 2004:323): in exchange for disclosing an invention, the patentee receives exclusive access to the commercial exploitation of the invention for a limited time. The *raison d’être* of the patent system is the expectation that the granting of a temporary monopoly on the commercial exploitation of an invention makes sure that information that would otherwise have remained secret becomes publicly available. The information traded must be new and technical and, hence, of potential future benefit to other individuals and businesses involved in various types of industry.

Patent law thus belongs to a peculiar breed of law that routinely has to deal with new and changing subject matter. Although enactments in all legal areas are intended for future cases – indeed, the possibility for any retroactive legislation is universally restricted to rare instances – only patent law is intended to change the status of its subject matter for each and every decision. From the moment a technical product or process has been deemed patentable, it will never be so again. The product or process will, on the other hand, enter the universe of knowledge called the ‘prior art’, meaning, the yardstick on which patentability of future applications are determined.

Functionally, a patent is unique among intellectual properties in being simultaneously a technological, a commercial, and a legal document. This can be shown by the three near-universal requirements for patentability of novelty, non-obviousness (or

inventive step), and usefulness (or industrial applicability) at all operating patent offices of the world. It does not matter how strongly an applicant fulfils one, or two, of the requirements; as long as the trinity is incomplete, the application will be declined.

Correspondingly, patents fulfil different functions to the three different social fields of economy, law, and technology. Expressly, the economic gains of holding a patent emerge from the fact that its information is new to the market, which is mirrored by the novelty requirement during examinations; the industrial boon is found in the technical information disclosed in the document, attested by the usefulness requirement; lastly, though, there would not be any economic or technological advantage of an invention if it is not considered to fulfil a certain standard for inventiveness as it is defined by the law, that is, the non-obviousness requirement.

All forms of intellectual property, namely, patents, copyrights, design- and trademarks consist of ownership to information, which – unlike physical possessions – are wholly dependent on governmental protection. Unlike Trademarks and Copyrights – which protect ‘expressions’ – patents confer broad rights to ‘ideas’ to holders. Unlike other types of intellectual property rights which can be received automatically (such as copyrights) or through use and familiarity (trade marks), patents must actively be applied for and maintained by its holder. Applicants have to delineate the rights they demand through so-called ‘patent claims’. In addition, a patent has to be kept alive through payments of several renewal fees throughout the potential life-span of a patent. Infringement on patent rights is not pursued by the state, but has to be litigated by patentees themselves.

On the other hand, a patent can be traded, licensed, and included in the balance sheets of companies. Some have therefore proposed a functional definition of the patent property as a temporal and conditional right to collect taxes provided by the State (Drahos 2010).

Major Current Issues

The world is today witnessing a global explosion of patents applied for, granted, and litigated (WIPO 2010). This is a development of commercial, technological, as well as legal importance; although the latter – the legal – stands in factual pre-eminence due to the fact that patents are, first and foremost, creatures of the law. Without detailed and predictable codification, there would not be any way for inventors to licence, trade, and exploit the fruits of their labours; nor would it be possible for them to include their inventions in a company's balance sheet and thereby raise venture capital through financial loans. The law makes all this possible.

Judging from the global explosion of production and commerce the last century, not to mention the spectacular growth of new innovations, it should be no surprise that patents have increased in their commercial attractiveness (counted as number of applications), their political importance (seen, for instance, in the establishment of patent offices in virtually all countries, not to mention the inclusion of intellectual property provisions in international treaties), and technological information value (measured in the number of patents awarded as well as the industries that are eligible for protection).

Several establishments and developments attest that patent laws are homogenizing internationally. In earlier periods, different countries would impose different restrictions on applicants, or – when they were basically the same – they would impose them to different degrees (see historical expositions in chapters 6 and 7). Different patent offices would also apply different technological classifications for the same inventions, and award patentees with different periods of protection; not to mention the different fees applicants were required to pay at different national offices.

The rationalization of the patenting procedure has taken place both nationally and internationally; although the two developments are difficult to divorce since international consolidation occurred during the same period as most nation states erected or upgraded their own patent systems. Up until the mid-19th century, only some few and industrially prosperous countries had a system for granting industrial protection of inventors' ideas.

The period of international consolidation began only slightly later with the Paris convention in 1883 (see chapter 7) which removed one of the difficulties of deciding the 'prior art' by introducing the 'priority right' for applicants filing in several countries member to the convention (the U.S. signed the convention in 1911). In this way, the 'prior art' would be judged according to the date the first country received its application. Although patents were still – and even today are – a matter of national rights, this institution was the first official recognition of the international nature of technological progress.

Most of the national patent systems survived the anti-trust sentiments which were looming in the mid-19th century (see chapters 6 and 7), but few drastic alterations of

national laws or international agreements followed for another half century. In more recent times, the inclusion of intellectual property provisions in the WTO agreement after the 1994 Uruguay summit has been identified as a milestone. Contrary to what many believe, this event has not changed the fundamentally national nature of intellectual property rights; rather, members to the WTO agreement are under stronger observation as to their enforcement of protected intellectual rights.

If we shift focus from commercial interests and global politics, the second half of the 20th century saw the emergence of two regional blocks with seemingly marginal ideological differences: that of the United States and Europe. The two sides of the continent have coordinated their international efforts on important legal questions, and are today unofficially characterized as two of the three sides in the so-called ‘trilateral patent’ (Drahos 2010), Japan’s system constituting the last. Whatever international development in patent law and policy the future holds in store, it will be heavily influenced by the parties of this trinity.

CHAPTER 3 – THEORETICAL CONTEXT

Where form and substance are inseparable, it is enough to look at the form only.

– Justice Curtin, *Winans v. Denmead*, 1853, U.S. Supreme Court.

Introduction

Research on globalization has been marked by the opposite viewpoints of those who consider the world as becoming increasingly homogenous politically, culturally, and socially (Meyer, Driori, and Hwang 2006; Ritzer 2007) and those who view regionalization as a countervailing force contributing to continued national and local divergence (Brady, Beckfield, and Seeleib-Kaiser 2005). Most of the works from both sides have maintained a macro-orientation with particular attention to legislative and political processes but not on legal institutions per se: “Sociological studies of globalization largely neglect law.” (Terrence C. Halliday and Carruthers 2007:1135).

Of the studies that have overcome this neglect, focus has mostly been on how particular legal models get diffused into new geographical and geopolitical areas (for overview, see Terence C. Halliday and Osinsky 2006). The range of legal domains and political loci investigated varies, yet one particular idea is shared, more or less explicitly stated; namely that the ideology of law spreads before legal procedures are accepted or, at least, that both are adopted simultaneously.

The most prominent research tradition on globalization and institutional diffusion is known as ‘World Society’ theory, which has revolved around the various works of John Meyer and his associates (for instance, Meyer et al. 2006; Krücken and Drori 2010).

World Society theory is less concerned with the distinction between formal and substantive law than with the conditions for diffusion of certain institutional arrangements.

The empirical premise of the theory is that there has been a global diffusion of institutional systems, modeled on a western democratic model, which cannot be accounted for by political pressure alone. Hence, it is implied, the motivation for the adoption of an institutional template must come from voluntary adoption which, in turn, rests on the fact that core set of ideas have been accepted as legitimate.

It is therefore a central notion of 'World Society' theory that institutional forms have followed from the adoption of certain ideologies. The works by John Meyer and colleagues which have specifically focused on the spread of legal models have articulated this connection expressly.

For instance, in the study of the spread of laws protecting children, Boli-Bennett and Meyer (1978) state that such diffusion is not primarily a "social organizational process but an institutional and ideological one". Their study found that the diffusion of child protection laws in national constitutions was unrelated to a country's constitutional history, its geopolitical position, or level of economic and technical development. Hence, the process was suggested to be, above all, ideological according to them.

In a theoretical proposal, Boyle and Meyer (2002) similarly present the view that a certain type of law is spreading globally because local legal debates have accepted some higher "Platonic ideals" from which identities, practices, and interests are derived.

This firmly affixes legal ideology as a causal forerunner for the establishment of legal procedures; the former being universal, the latter a matter of local expression.

In other sociological work on the globalization of law the distinction between formal and substantive law is not carried out empirically but lapsed together in the heuristic phrase “norms and practices” (Terence C. Halliday and Osinsky 2006), although it is implied that the “norms” have, at some point in time, originated in the world’s geopolitical core. In another study the term “form” has been used to capture both procedural issues of “regulation” and substantive ones of “meaning” (Terrence C. Halliday and Carruthers 2007).

The notion that the presence of a legal form reveals that the ideology of the same legal system has also been accepted harps back to the relationship between substantive and formal law as it was spelled out by Max Weber (1978c) – the original articulator of the distinction: legal form follows legal substance. The proposition is intuitively persuasive; if a system of law is adopted we expect this to mirror prior recognition of the substantive philosophy on which the same system is based.

What is currently missing from the sociological literature is an awareness of Weber’s distinction between substantive and formal law when legal systems are studied comparatively, historically, and internationally. When this distinction is not analytically included, it is impossible to understand fully the conditions of continuity or diffusion of the law, or the order in which substantive and formal law is adopted.

The only way to distinguish between law’s ‘ideological’ and ‘technical’ aspects; its ‘substance’ and ‘form’, is by carefully examining the code or codes pertaining to a

specific legal area and their historical trajectory. The fact that extant studies are less successful in developing this distinction and investigating its consequences should be attributed to their empirical focus, which is directed to the patterns of what they see as *one* legal model; namely, that of ‘western’ law.

In this way, these studies are forced to leave the substantive/formal distinction untouched, since they take for granted that the spread of certain legal practices signals the implicit adoption of its underlying norms – be it carried out by means of cultural imperialism or voluntary adoption.

Identifying Topic and Concepts

This theoretical chapter has two main goals. Firstly, theoretical advances, both from legal scholarship and the sociology of law tradition, will be considered in order to delineate the theoretical front from which this study embarks and to which its findings are of significance. Secondly, it will argue for the need to consider the substantive/formal dimension of law in order to understand continuity and change of legal systems. In reviewing the relevant literature it will become clear that the analytical potential of this distinction has not been sufficiently exploited thus far.

This might, at least partially, be due to theoretical obscurity: Weber’s treatment of substantive and formal aspects of authority is at times ambiguous, something which have been noted for a long time among commentators (see, for instance Bierstedt 1954; Spencer 1970). To some extent this stems from the fact that Weber’s treatment of the relationships between the two is very nuanced and encompassing. More important,

though, is the inherent contradiction between substantive and formal aspects of control and legitimacy Weber emphasized and which refutes any schematic treatment of either.

The position taken here is that it would be a gross theoretical mistake to either dismiss Weber's analysis of law for that reason, or to disregard the tension he identifies within it. Rather, both historical investigations and studies of the globalization of law will benefit tremendously from carefully exploring Weber's conceptual framework and the tensions he postulates as inherent to modernity.

Moreover, this study considers the substantive/formal distinction as a necessary theoretical prerequisite in order to investigate the origins and fates of separate legal philosophies of patent law. A patent philosophy, as here understood, is strongly associated with what Weber considers to be the substantive aspects of the law, and it is hence crucial to connect the two conceptually.

Substantive and Formal Law

The idea that substantive law must be analytically distinguished from formal law informs all of Weber's legal sociology. To Weber, it could even be said that this distinction guides his entire comparative work on legal classification, and that it serves as a basis for his historical exposition of modernization of western society (Trubek 1972; Kalberg 1980; Feldman 1991; Ewing 1987).

In a phrase, substantive aspects of the law characterize its responsiveness to considerations that are external to the legal system, such as ethical or utilitarian values. A legal system embodies substantive justice if it is structured to routinely allow non-

juridical ideals to shape what becomes law and to influence how the law is applied in concrete cases.

Formal law is, on the other hand, a matter of the autonomy of the legal system, or its immunity from external interferences (see Trubek 1972; Shamir 1993). Legal formalization is thus an expression of the law's systemic separation from its social and political environment with the result that the law and its application is purely a matter of rules and axioms written as law and practiced by lawyers.

The distinction is not entirely clear-cut in practice, however – at least not as it was initially articulated by Weber. The reliance on legal precedent in the Common Law tradition of the Anglo-American world, for instance, can be seen as both a formalistic quality – because it implies that future interpretation of the law will be influenced by higher ranking tribunals consisting of legal experts – or an expression of substantive justice – due to the admittance of discretion on part of judges in finding sources of custom and law and in allowing legal interpretation to be altered with societal changes (on this, see Shamir 1993).

Similarly, national constitutions serve as the ultimate source of legal authority for legislatures and courts in advanced countries and hence play a decisive role in formalizing their legal systems; yet, several substantive aspects are also expressed in them, such as protection of certain religions or monarchical privileges, human rights, and so forth, all of which can be considered as substantive demands.

It must therefore be stressed that no national legal system today is purely substantive or purely formal, but contain aspects of both. However, modern law,

according to Weber, does imply a relative intensification of its formal qualities which enhances its conflict with extra-legal substantive consideration (something which will be dealt with more thoroughly below).

The distinction between formal and substantive justice is also meaningful on lower analytical levels, in studies of particular legal systems or even application of specific laws. Whether those in charge of articulating laws or putting them to practice operate with concern for external considerations or not constitutes a crucial feature of justice and a defining feature of that particular legal area.

In the case of patent law, the distinction is also more or less expressed in the distinction between ‘substantive’ laws and ‘procedures’. The former express the basic intentions of the patent system, its foundational principles, as well as the relevant sources of legal influence.

A logical consequence of the fact that substantive patent laws constitute overarching principles is the fact that they are fewer in number than procedures. In the European Patent Convention, for instance, only 22 out of 178 articles are listed as substantive. The latter, unlike substantive articles, also include a constantly increasing number of rules and provisions for their implementation.

If one sticks to a lexical interpretation of patent law, it is thus a simple task to categorize legal provisions according to Weber’s distinction. However, the task is more complicated when the meaning of substantive and formal justice is considered more carefully. The reason is simple: many of the patent laws which are called ‘substantive’ have a more procedural character, and some procedural laws have substantive

implications in that they establish criteria for various patentability issues of extra-legal nature, such as societal interests, technological progress, or commercial efficiency.

The three basic patentability requirements of novelty, non-obviousness, and usefulness are all substantive, both in name and meaning. In particular the two latter which cannot be determined by legal reference alone but must be gauged by reference to the progress an invention makes to a particular technological field (non-obviousness) or the benefit or potential harm it poses to society (usefulness).

On the other hand, the requirements as to what the patent application must contain to be considered eligible (for instance, EPC, Art. 69) are above all formal provisions, despite the fact that it is listed as a ‘substantive law’. Other principles and conventions have not been officially established as substantive, but still have a substantive effect. For instance, the so-called ‘Graham factors’¹ relied on by American courts to decide non-obviousness recognizes retrospective evaluation of “secondary considerations”, such as “commercial success” as relevant.

The approach to substantive and formal law taken here follows Weber’s focus on meaning and consequence rather than lexical attribution. In the analysis of patent philosophies in chapter 5 the guiding understanding is that a better use of Weber’s distinction is accomplished when the position and functions of different laws is considered and not merely the terminology of headlines in the legal text.

¹ Established by the U.S. Supreme Court in *Graham v. John Deere Co.*, 1966.

Patent philosophy is thus taken as an overarching substantive concern, or the *substantive aggregate*; the general and systematic direction when a patent system searches for the ultimate authority of its laws and the direction in which it ought to move.

Insoluble Conflict

To Weber, conceptual classification was but a preliminary exercise to his ultimate theoretical aim which was to apply his categories to historical analysis. For his categories of law, as for so many of his other concepts, Weber intended to give a narrative of a ‘rationalization’ of western societies (Brubaker 1984).

However, in perusing Weber’s original writings, theorists have noted a lack of clarity on Weber’s part as to what exactly he means by ‘rationalization’ and how he understands its relationship to both substantive and formal justice. Kalberg (1980), for instance, identifies four separate definitions of ‘rationality’ in Weber’s texts, and Brubaker (1984) as many as 14.

In terms of legal development, Weber’s saw rationalization as two alternative processes. Legal systems, he thought, can be rationalized according to either substance or form. In effect, he thus created a four-category typology of legal systems into those that are (i) formally irrational, (ii) formally rational, (iii) substantively irrational, and (iv) substantively rational (see Weber 1978a). Although the typology is admittedly crude, it is important to remember that Weber was more interested in developing legal ideal-types than investigating degrees of rationalization.

In doing so, Weber shows two different logics for rationalized legal systems. The first has to do with the degree to which the law and its implementation is shaped by extra-legal ethical concerns and normative authority (substantive rationality); the other has to do with the clarity and predictability of the law and its execution (formal rationality). To importance of a specialized legal profession in advancing the latter has frequently been emphasized (by, for instance, Treviño 2008:180–184).

This taxonomy, of course, pertains to legal systems in their entirety and was not developed by Weber to classify specific areas of law (although there seems to be no apparent violation of his theory to do so; indeed, Weber himself devotes a great deal of attention to particular legal areas and instruments, such as contract law). The important thing to notice is that Weber's scheme postulates different ideological underpinnings for the support of each ideal-typical kind of system.

This is true regardless of level of social development. Whether irrational or rational, formal systems are seen as legitimate according to the legal procedure from which justice is enacted. Conversely, in substantive systems legitimacy relates to the source of law, whether this constitutes a particularly charismatic leader (in irrational systems) or an impersonal moral source (in rational ones). Modern rational law has developed a type of formal rationalization, a legal *formalism* which “enables the legal system to operate like a technically rational machine” (Weber 1978a:811). This formalism, however, threatens to undermine the substantive foundation of the law (Brubaker 1984:16).

This Weber articulated as an “insoluble conflict between the formal and substantive principles of justice” (Weber 1978a:893), and that formal justice “infringes upon the ideals of substantive justice” (Weber 1978a:813).

The reason for the “insoluble conflict” is directly related to the fact that substantive and formal considerations follow different logics. As Feldman (1991:213) notes in his discussion on Weber, “his analysis suggests that formal rationality is at times inversely related to substantive rationality.” Several commentators have emphasized the fundamental importance of this tension to Weber’s theory of law (for instance, Feldman 1991; Brubaker 1984; Kalberg 1980).

Just as economic or bureaucratic expediency and predictability often undermines other ethical concerns (see Brubaker 1984:69–90 for a penetrating discussion of this), a legal system tuned to the greatest amount of clarity will subvert the discretion that is often needed for a substantively ruling in a given case: The clearer and more predictable the law is, the harder it is to allow individual ethical considerations to influence its implementation.

The implication of substantive and formal rationalization is that the law will never reach an equilibrium state, where external concerns and systemic operation will be accommodated to the same extent. Moreover, legal stability will run against other expectations from the law and hence be a source of constant dissatisfaction and political friction.

If this tension has been largely neglected in studies of legal globalization, it has also not been fully appreciated by comparative legal scholars who, on their part, have

been more interested in discovering the principles which unite substantive and procedural law in a given legal system. The advantage of insights of the latter in understanding legal continuity still warrants a separate look at some of their contributions.

Law's Unity

Although the terminologies sometimes differ, legal scholars have investigated aspects of law which bear resemblance to Weber's substance/form-distinction. An early proposition was given by René David (1950; David and Jauffret-Spinozi 2002[1964]) who believed that the primary criterion in comparative law should be the "ideology" of a legal system. By a system's "ideology" David meant its philosophical, political, or economic principles, the social objectives it sought to achieve, and the place of law itself within the social order.

This 'ideology' shares affinities with Weber's notion of the law's substantive elements in that it specifies the value which serves as sources of a legal system. David further separated a legal system's "technique" which included the law's conceptual structure, which corresponds largely with Weber's formal law.

David did not, on the other hand, consider substantive-formal tension to be a fundamental legal challenge. Rather, he wanted to raise awareness of the principles uniting 'ideology' and 'technique' in legal systems. He later argued that

[it] is a superficial and indeed false view to see law as being composed of the totality of [legal] rules ... [T]he juridical phenomenon which they represent ... constitute a *system*: it has a vocabulary used to express concepts, its rules are arranged into categories, it has techniques for

expressing rules and interpreting them, it is linked to a view of the social order itself which determines the way in which the law is applied and shapes the very function of law in that society

(David and Brierley 1985:19)

The legal scholar John Merryman (1985:1–2) agreed with David in that a legal tradition is not merely a set of rules but, rather, a set of deeply rooted and historically conditioned attitudes about the nature of law and its position and role in society. A legal tradition is, in this view, a partial expression of a culture, and the way it is situated and operated within this culture reveals a particular legal ideology.

A later collaborative revision of Merryman's work (J. H. Merryman, Clark, and Haley 1999) discuss three ways in which the two western legal traditions – continental Civil Law tradition and Anglo-American Common Law, respectively – may converge: by international treaties, by legal transplantation, and through the tendency for countries with similar social and economic conditions to develop similar legal system, what could be called 'natural convergence'.

However, a clear description as to whether – and, if so, *which* of – these three ways will involve ideological or procedural change is not clearly indicated. The same is true for other works which looks at international legal harmonization. Generally, it is thought that American legal practice and norms are supplanting those belonging to European and other traditions; not so much due to superiority of American law but due to American dominance in other areas of international relations (for instance, Wiegand 1991; Dezalay and Garth 1996).

A recent work in legal scholarship which has continued work with ‘legal tradition’ as the core concept belongs to Patrick Glenn (2010). Importantly, in the preface to this work, the author mentions a decline in the normative authority of official sources of law in the west – a hypothesis which more than faintly echoes Weber’s “insoluble conflict” of substantively and formally rational law, though without evoking it directly.

As for formal and informal legal harmonization, Glenn contends that the major traditions are stable and are likely to preserve their distinctive identities (Glenn 2010:358–65). The reason for this stability has to do with the strong ideological commitments in which the legal traditions are vested: “The great and powerful traditions are those that offer great and powerful, even eternal and ultimately true, reasons for adherence” (Glenn 2010:41).

Normativity is “a constant feature of legal tradition” (2010:348). According to Glenn, major traditions are powerful because they are complex and deal successfully with that complexity. They “achieve complexity because of their proven ability to hold together mutually inconsistent sub-traditions” (Glenn 2010:350).

A system could hence be seen as ‘rationalized’, according to this view, if it is able to contain the “insoluble conflict” between substantive and formal justice – a notion with which Weber would surely not agree. Still, some source of stability must be in place for the long historical spans through which the important legal traditions have been able to persist, and credit is due to legal scholars for bringing attention to the sources of this stability.

Looking at the relationship between specific laws and core principles, James Q. Whitman has investigated how even minor differences between national laws can be traced back to long-standing political ideals. For instance, although developed countries share certain provisions protecting the privacy of citizens, these can be based on slightly different original moral justifications, something which has given rise to systematically different privacy laws (Whitman 2004).

The implication from Whitman's study is that it is not enough to merely list the occurrence of certain legal concepts across regimes in order to compare legal philosophies. In some cases, the legal forms must be compared to make inferences about what exactly the underlying legal norms are.

This present work inherits from legal scholars the emphasis of legal systems as historically and analytically distinct entities, or "traditions". The implication is that one has to maintain a holistic focus on legal systems when analyzing separate laws which they – otherwise – share in common with other systems.

The jurisprudential understanding that the substantive aspects, or the "ideology", of legal traditions have to be discovered through broad and historical examination of its separate charters is also recognized here. Still, the potential conflict between substantive and formal justice is here more explicitly recognized than it is in the works of legal scholars.

All law is language, and all language is subject to linguistic and communicative potentials and limitations. Ernst Cassirer's (1953) exposition condenses the capacity of language down to two fundamental forces: one logical and expansive, one mythical and

reductive. All language, according to him, consists in a mental attempt to reduce the relationship between Man and his surroundings from one that is direct into one that is *indirect*. The logical force does so by an expansive claim to a growing jurisdiction under its implication, the mythical concentrates various phenomena into one single concept.

Mathematics and the natural sciences, for instance, are drawing on the logical potential of language, whereas theology is embedded in the mythical. (Despite its theoretical innovativeness, Cassirer's point is somewhat anticipated by Giambattista Vico's Enlightenment treatise *New Science* (2000 [1744]), the fifty-third principle of which claims that philosophical statements aspire for truth by ascending to 'universality' whereas poetic truth is approached by restriction to 'particulars'.)

Although the law's substantive and procedural components are inseparable, they each draw in separate linguistic directions: the logical force of the procedures are always kept at bay by the necessary mythical underpinnings of substantive legitimacy.

Interestingly, Weber draws on both capacities sequentially in his general understanding of legal application and rule-development. His point is that such application consists in an initial reduction of individual case details to certain principals (mythical condensation) which, in turn, expands the circuit of these principals (logical extension) to future cases (see Weber 1978b:654–658).

Tension without Conflict

Sociological work which approaches the law at the micro-level has made theoretical advancements with important implications for the weberian notion that there

is an inherent conflict between law's formal and substantive aspects. In particular, micro-sociological studies of the law have served to further sever the substantive and formal aspects of the law apart.

In what has become known as the study of 'legal consciousness' or 'legality', researchers have tried to investigate how the law is seen as a legitimate form of governance in spite of the fact that it constantly reproduces social inequality – either directly through favorable arrangements for the well-to-do and politically powerful or indirectly by not actively alleviating the situations of those who fall behind (Ewick and S. S. Silbey 1992, 1998a; Ewick and S. Silbey 2003; Hull 2003; Kostiner 2003; Merry 1986, 1990; Nielsen 2000; Lovell 2006).

It is characteristic of this research tradition that it moves beyond formal accounts of legal institutions and procedures and pays attention to the idea that ordinary people can be legal actors (Marshall and Barclay 2003) within a framework sensitive to the influence of practice, culture, and ideology (Engel 1998).

Silbey (2005) has recommended that sociologists look into how the law becomes synthesized into a set of circulating schemas. This echoes Robin Stryker's (1994) assertion that the Law is, simultaneously, a *rule* and a *resource* individuals draw on in making sense of the world, in reaching decisions, and in accounting for their behavior. Stryker's concept of law bridges the theoretical understandings of social structure and agency, and is therefore able to close the gap between studies of law and studies of culture.

The important conclusion to draw from these studies is that the law is seen as legitimate because it is able to accommodate various *different* ideological interpretations. The legal procedure does not reflect one unified set of beliefs but different and even antithetical cultural justifications (see, in particular, Ewick and Silbey 1998). In a way, this assertion turns the conventional idea of law on its head: not only is one single legal principle able to yield several different procedural enactments, but one procedure might be subject to different ideological interpretations as well.

In other words, one legal form might be seen as a reflection of different legal norms, depending on a person's point of view and relationship to the law. Thus, it is not surprising that Tom R. Tyler, and his associates have found that people, in general, evaluate fairness of the law in procedural terms and not in accordance to the outcomes of legal cases (see, in particular, Tyler 2006).

Related to the study of legal consciousness there is a growing body of research which focuses on the interplay between politics, law, and organizations. Due to the ambiguity of all laws, the actual implementation of legal requirements – particularly when forced upon private organizations – will in many ways decide what becomes the legal principle (Edelman and Suchman 1997).

Organizations respond to legal requirements by elaborating their formal structures to create visible signs of compliance. Since the law only requires certain procedural enactments, the actual implementation of it is left up to the organizations themselves. They are therefore in a position to interpret and even decide the meaning of the law

(Edelman 1992; Edelman, Uggem, and Erlanger 1999). Hence, the law is interpreted and construed by the ones it is intended to regulate.

Something similar has been suggested for the implementation of various employment laws. These regulations were enacted to protect workers from health- and occupational hazards and led to the institutionalization of various personnel and departments at the organizational level. Yet, as institutionalization proceeded, middle managers came to justify them in purely economic terms (Sutton et al. 1994; Dobbin and Sutton 1998).

There are valuable insight from this more micro-oriented work, from the 'law and society' tradition, and from the study of law and organizations, which can inform work on law and globalization. Firstly, the research on 'legal consciousness' has shown that it is hard to speak of one unequivocal meaning inherent to law; different meanings will be interpreted differently by different actors, to a great extent dependent on their social position, even though they might all understand the procedural aspect of the law.

This proposition implies a major revision of traditional interpretations of the law, beginning with Weber's account: the form, as it were, is less ambiguous than the substance. The importance of legal ambiguity has further been extended by studies of organizations and endogeneity to suggest how the establishment of legal procedure might (re)create the philosophy the procedural requirements were meant to convey.

Theoretical Direction

The challenge ahead is both empirical and theoretical. Theoretically, the insights from the 'World Society' movement's studies of the spread of legal institutions internationally must be recognized, the same goes for legal scholars' assertion of the need to look at the law holistically. These ideas must, furthermore, be mediated with micro-oriented works on legality and legal ambiguity. Revisiting Weber's distinction between substantive and formal law provides a valuable meeting point; both because it offers an analytically clear distinction of different aspects of the law and because it facilitates general assessment of the conditions for legal change.

Further elaboration of the distinction between substantive and formal law is particularly promising in bridging the gap between the two separate research traditions. Empirically, blind spots in the literature can best be revealed by analysis of historical and comparative nature of legal systems which have coexisted, served to meet similar functional requirements, and met through the actions of politicians and international commercial actors. The histories of the patent laws of the United States and Europe are valuable research sites for the task.

Most orthodox legal scholars analyze the law as a more-or-less autonomous regulatory system; most social scientists look at how the law is shaped by societal changes. For particular legal systems, both disciplines need to explain the relationship between substantive and procedural law. Legal change is inevitable, but whether it occurs from within or without the law is a matter which directly concerns the substantive/procedural dimension.

This, in turn, can only be answered by looking at particular legal systems, ideally comparatively. Both orthodox legal experts and social scientists have paid less attention to this dimension; it has either been disregarded (the main limitation of the work of social scientists), or it has been given mostly ahistorical attention (the shortcomings of many legal experts)

The legal experts and professionals are preoccupied with an ‘internal’ kind of learning about law and legal institutions; social scientists with an ‘external’. Comparative and historical work on legal change and stability of particular branches of the law offers a methodological remedy.

Theoretically, Weber’s distinction between substantive law and formal law must be utilized and critically reexamined to such an endeavor. The position adopted here is to interpret the substantive dimension of law *broadly*, including not only the codified ethical intentions of a legal system but also its extra-legal normative reference points. As will be shown in chapter 5, this makes it possible to identify two different legal philosophies of patent law in the United States and Europe.

CHAPTER 4 – METHODOLOGY

Those who know only one country know no country
– Seymour Martin Lipset (1996:17)

Purpose

This study investigates the nature and development of modern patent philosophy. Several separate steps are taken to arrive at an overarching story, each associated with different methodological challenges. The first is to describe the two logical opposites of modern patent philosophy in an ideal-type investigation (chapter 5) where the fundamental differences between an ‘inventor philosophy’ (the American position) and an ‘invention philosophy’ (the European position) are explained. The next is to construct the narratives of each philosophy comparatively to reveal their causes and separate historical trajectories (chapters 6 and 7).

“Macro-interpretive” scholarship needs to overcome tensions between narrative and comparison; between conceptual understanding and causal analysis. In this way, “history is theorized at the same time as theory is historicized” (Stryker 2001). The ideal-type analysis paves the way by conceptualizing the material which will later be interpreted historically, but the ideal-types could not have been constructed without constant theoretical and historical referencing and mediation.

In agreement with the approach to such investigations advocated by Max Weber, the ideal-type account concludes with a discussion of the two concepts abstractly; meaning, not as they are actually manifested in the two patent regimes but as they would

have looked if their philosophical tenets had been carried out to their full extent. This serves the purpose of emphasizing the philosophical differences and thus making them clearer. Reality is less orderly, more chaotic, and full of features that are the result of compromise and even accident. An ideal-type investigation recognizes this but also presents the hypothetical alternative as a way of summarizing and clarifying the phenomenon under scrutiny.

Chapters 5 and 6, respectively, present the histories of each patent philosophy. Although these are separate accounts, focused around key events, they are carried out within an overarching comparative framework. These accounts broadly fall under the qualitative historical-comparative tradition in sociology. Here, the goal is to provide sufficient historical context to render accurate narratives at the same time as aspects of each historical case which are relevant to a comparative study between them are highlighted. A separate analytical summary of the histories, where the theoretical perspectives discussed earlier are incorporated will be given in a separate chapter (8).

An overarching methodological challenge of this study stems from the fact that the main outcome is law; or, more precisely, legal documents. It is not the laws themselves that are of interest, but the philosophy they embody. This philosophy is sometimes explicitly stated, but at other times it must be gauged by careful examination of details of individual charters and commentaries written on them; ideally, dating from the time they came into being. In both cases – which is an important insight from legal sociology – the law must be situated and contextualized in order to understand how a law became what it is, and why it was driven by a particular philosophical-political agenda.

The primary sources of the study, hence, comprise legal documents as they pertain to patent law and patent policy in the United States and Europe, in addition to treaties which have shaped the current partially internationalized patent domain. Key patent applications which have become subject to extensive commentary among patent scholars and professionals have also been analyzed. Due to some institutional change over the course of history, the data have been obtained from different sources – sometimes even when essentially pertaining to the same case.

Naturally, as for all social scientific research, the overarching empirical agenda is to test and modify established theory, and to derive new knowledge of a social phenomenon. The exposition below will justify the choice of research design and to show how it is adopted to accommodate the research questions and enhance knowledge of the subject matter at hand.

An epistemological assumption which is central to this project is that legal documents, as well as their procedural history, can serve as lenses through which one can gauge deeper cultural ideas about social and ideological concepts as well as power struggles. There is nothing inherently new about this assumption; to the contrary, both the sociology of Émile Durkheim (in particular 1997 [1893]) and Marxist theories of the law (earliest systematic treatment by Pashukanis 1989 [1924]), although theoretical opposites, have been motivated by a similar understanding as to how to understand the law.

These early attempts were, on the other hand, guided by the assumption that only broad cultural patterns could be discovered in the law (such as type of *social solidarity* in Durkheim, and *mode of production* in Marxian thinking). In this present work the

assumption is that smaller variation of the same type of law is also a worthy subject of social and cultural research.

In his exploration of the contract as a social artifact, for instance, Suchman (2003) highlights the nature of these legal objects as scripts and signals which embody symbols designed to yield technically efficacious practical action. Whitman (2004), with his notion of 'juridification', suggests that these embodiments can shape people's moral interpretations beyond what the law originally intended. In both instances, minute differences are accepted as indicative of important legal heterogeneity.

A contextual interpretation of the law has been a major concern for legal sociologists who have highlighted the complex character of legal rules (for instance, Stryker 1994); greater appreciation of 'legal ambiguity' (Edelman 1992; Edelman and Suchman 1997); and the possibility for several coexistent interpretations of the same legal system (Ewick and Silbey 1998). Together, such progressions forces one to step beyond any restricted and isolated treatment of the Law or consider it an expression of unambiguous cultural meaning.

Methodologically, this study is motivated by the understanding that comparative and historical research designs are able to shed new light on social phenomena than either single case studies or large cross-case statistical techniques are able to do. Approaching the Law comparatively and historically opens it up in its richness to sociological investigations which, in turn, can illuminate its meanings and implications beyond the insights presented by legal scholars and historians alone.

Ideal-Types

The main challenge associated with ideal-type investigation consists in uncovering the relevant aspects of a case or phenomenon in order to present a picture which is as exhaustive as possible but which also restricts itself to only the most crucial features. Max Weber (1997:88), who first articulated this type of sociological investigation, explained what this approach involves:

An ideal type is formed by the one-sided accentuation of one or more points of view and by the synthesis of a great many diffuse, discrete, more or less present and occasionally absent concrete individual phenomena, which are arranged according to those one-sidedly emphasized viewpoints into a unified analytical construct[.]

As the subject of this part of the study is law, the relevant sources for ideal-type construction are legal documents, primarily statutes. A separation is made between substantive and procedural law, where substantive legislation is taken to express the philosophical commitment of each system. However, some procedural aspects of each case are directly informed by dominant philosophical approach and are hence included (a diagram describing the two ideal-types are given at the end of chapter 5).

The ideal-type section explains why the American system should be characterized as based on an ‘inventor philosophy’ and the European as one based on an ‘invention philosophy’, as well as what this implies in practice. Historical aspects of each case are not predominately discussed in this section, but certain comparative references and juxtapositions have proven unavoidable in order to give an accurate presentation of each.

A separate objective with the ideal-type analysis is to identify which features constitute the main subjects of the ensuing historical exposition. All narration consists in simplifications and selections from an endless range of factors. An ideal-type can be seen as an identification of the constitutive features of a case, and – once discovered – these will serve as guideposts as to what historical occurrence to investigate and where to look.

The ideal-types thus identify some of the research questions; namely, *when* and *why* did the constitutive features of each case emerge? Any focused historiography will arrange its narrative around ‘key events’ or ‘historical junctures’ (see below) but having cases presented as ideal-types provides an analytical justification for the narrative that is later presented. The ideal-types, themselves theoretical constructs, illuminates theoretical issues that need to be addressed, and – as Stryker (1996) explains – a complete sociological narrative needs to speak to clearly articulated theoretical issues.

Comparative History and ‘Strategic Narrative’

As explained by Charles Ragin (1994), all works of social science create representations and simplifications of an infinitely complex social world. The method through which these representations are derived varies in terms of the number of variables included in the analysis, and the number of cases investigated. Quantitative strategies, which are suited for examining variation of one phenomenon, look for the changes in a few variables over many cases; qualitative explorations of a single site are able to investigate contextual richness of a single case.

Ragin describes the comparative research strategy as one which explores the *diversity* of a social phenomenon. As he further explains, “[b]ecause the comparative approach focuses on differences between cases and the differentiation of types, it facilitates historical interpretation” (Ragin 1994:110). A more pragmatic version of this methodological understanding was expressed by Theda Skocpol (2007:36): “Comparative historical analysis is, in fact, the mode of multivariate analysis to which one resorts when there are too many variables and not enough cases”.

However, as Ragin has elsewhere explained (Ragin 1987, 1994), only once understood that comparative methodology is lodged within a unique theoretical objective and that it provides its own empirical strengths, is it possible to appreciate the advantages provided by this research strategy. While positioned midway between qualitative insight and quantitative overview, the comparative method offers more than a methodological compromise. Comparative research is particularly suited to discover complex social phenomena and uncover configurational causality (Ragin 1987). It does so by being sensitive to the contextual richness of individual cases as well as being attentive to the scope of their theoretical generalizability.

Theory and History

Empirically, as well as theoretically, substantial inspiration for this project is ultimately received from Max Weber. In a way, this study combines Weber’ (1978a:19) recommendations for historians and sociologists, respectively:

[S]ociology seeks to formulate type concepts and generalized uniformities of empirical process. This distinguishes it from history, which is oriented to the causal analysis and explanation of individual actions, structures, and personalities possessing cultural significance.

Seen as a forerunner for comparative and historical sociological research, Weber was no stranger to configurational and complex causation of social phenomena – it can even be seen as one of the very tenets of his empirical approach (on this, see also Hobson 1998):

[I]t must be insisted once and for all that a concrete effect cannot be regarded as the outcome of a conflict between causes which tend to bring it about and causes which are opposed to it. Rather, the totality of *all* conditions to which the causal regress from an ‘effect’ leads must ‘work together’ in exactly the way that they do in order to enable the concrete effect to occur in exactly the way that it does.

(Weber 1978d:129)

If discovering causation alone was the objective of this project, a simple comparison of case differences in causes and outcomes should orient the research. Simply put, divergences between American and European patent laws should be attributed to the social or political conditions on which the United States and Europe, respectively, differ. The empirical challenge would then consist in discovering these conditions and establish their importance in influencing patent laws in both cases.

However, this project’s theoretical objective, as well as certain characteristics peculiar to law, does not permit such a straightforward application. If insights from the ‘Law and Society’ tradition, analyses need to probe deeper than what investigations of mere causality permits. Greater contextual awareness is needed than what would be required from a straightforward political narrative. Max Weber’s insight that

historiography should aim for both understanding and explanation, is therefore acutely relevant to this study.

The approach to the historiography which has been most relevant to the combined attempt to seek understanding and explanation has been to construct ‘strategic narratives’ (Stryker 1996). This approach involves an attempt to bridge the divide between purely historical or theoretical – a division which, at any rate, is fictitious – investigations by acknowledging the interconnectedness between history and theory and actively draw upon the methodological potential of this connection.

What this method emphasizes is that theoretical analysis and historical exploration should be mutually adjusted rather than occupy separate research activities. History and theory are thus developed through an ongoing mediation between constructs and empirical sequences and incidents. In Stryker’s (1996:341) own words:

[‘Strategic narrative’] requires that we build history to respond to explicitly formulated theoretical questions, that we consider how our theoretical selection criteria affect our historical constructions, and that we interpret our historical constructions in explicitly theoretical terms.

Doing so involves a focus on eventful as well as contextual time, with particular awareness of the path-dependent nature of action sequences. The fundamental objective of ‘strategic narrative’ is to give an account as to who did what, when, where, how, and with what consequences.

In doing this, the two historical chapters both illuminate the intricate and, at times, fortuitous development of patent law which has served to give the United States and

Europe unique systems. Chapters 6 and 7 are, therefore, follow a less linear and logical presentation than the analytical ideal-type chapter 5. The ‘strategic narratives’ center on the processes leading to specific historical outcomes and these processes will contain complex configurations of social context, traditions, and individual agency.

For instance, the German patent law of 1877 was a legal novelty, aspects of which would quickly see emulation abroad. However, it would never have looked as it did – nor can it be ruled out that the German *Reich* might have abstained from implementing any patent code at the time – had it not been for the laborious efforts of one particular industrialist, Werner von Siemens. Similarly, the moral implication of the American usefulness requirement emerged from one particular case of patent appeal where Justice Story explained that improved methods for poisoning people or facilitate assassinations were not ‘useful’.

On the other hand, no single individual can be identified as responsible for the American development towards ‘peripheral claiming’. Rather, the behaviors of American applicants, who – situated in the adversarial American legal tradition – were more prone to patent litigation than European inventors, begun developing sophisticated articulations of the rights they specified in their applications. The adverse character of these articulations, where the basis for infringement was highlighted more than the technical benefits of the invention, gradually became standard and was eventually codified in the federal patent statute. Despite their different historical origins, both morality as an issue of patentability sufficiently covered by the usefulness and ‘peripheral claiming’ are part of the American ‘inventor philosophy’ (as chapter 5 explains).

At other times, the narrative of patent philosophy has to capture intricate combinations of individual ingenuity working under structural imperatives. As will be showed in chapter 7, the spread of the ‘inventor philosophy’ to the European patent region would, at face value, be understood as a development of “Germanization”; and, indeed, German industrial prowess in the post-war period did earn the country’s patent laws exemplary status. However, closer scrutiny of the historical record reveals that the chief concern of the appointed Expert Committee of the European Council was to incorporate the strictest patentability requirements of all member states lest to offend feelings of national sovereignty which could threaten the development toward the erection of a regional European patent office. It just so happened that Germany at the time practiced the strictest patentability requirements of all European nations, something which resulted in Europe adopting standards that were, ultimately, of German origin.

An additional motivation in ‘strategic narrative’ is to investigate a theoretical puzzle or historical anomaly (Stryker 1996). This requires one to consult primary sources due to the fact that all secondary sources are the product of attempts to address other puzzles and have thus been created with a different ‘strategy’ in mind. This study too has a puzzle; one which is noticed after rather extensive historical exploration: *How can two legal systems become increasingly similar in matters of procedure, whilst maintaining distinct underlying philosophies?*

This puzzle is showed in the two opposite historical developments. On the one hand, the American and European patent regimes have adopted increasingly similar procedural practices from the 1880s onwards – including fee structure, disclosure

arrangements, and conferment of patent rights. This development has met with little resistance on either side of the Atlantic. On the other hand, the very few attempts at substantive harmonization have come to naught, and future attempts have been deferred indefinitely.

This puzzle has informed the empirical orientation of the study and clarified the role of theory in constructing the narratives. As such, the puzzle serves to focus the points where theory and history must be mediated.

The challenges of the comparative method and of the ‘strategic narrative’-approach to theoretical historiography have had important implications for this present study. Comparatively, it has been important to align findings from the two historical cases in order to discover the relevant aspects of each. Key differences would not have been possible to identify without a constant juxtaposition of the two. Indeed, the two ideal-types of patent philosophy discussed in chapter 5 are direct results of this comparison.

All functional patent systems provide complete orientations towards patent policy, which means that the basic status and legal treatment of both inventors and inventions are covered in all patent regimes. Close comparative inspection, on the other hand, has made it possible to identify how the European and American patent philosophies have consistently laid relative stronger emphasis on inventors or inventions.

An equally clean comparison of the histories of each philosophy is not possible. Both Europe and the United States have undergone different historical paths and been shaped by unique political and legal traditions. As ‘strategic narratives’ it is important to

highlight these differences and the role specific trajectories have played in the shaping and development of different legal philosophies. However, the narratives will show that both philosophies share one fundamental historical characteristic: they both originated at *one* specific point in time: in the American Revolution and German unification, respectively. The nationalistic source of both philosophies underscores the deep affinities between patent law and nation-building, and the dramatic social context from which they emerged highlights the radical character of each philosophy when first introduced.

Despite the national importance of patenting, patent philosophy has never been exclusively inward-looking – as so many other features of 19th century Romanticism and nationalism were – but always directed outward internationally. This international orientation is most visible in the fact that patents have always been expressly used as political tools in inter-state industrial competition. More peaceful objectives have also been pursued internationally, such as collaboration on patent searches between national patent offices to reduce the administrative burden.

Countries have also widely adopted patent laws and practices from each other. The first patent code of unified Germany, for instance, copied interference proceedings from the British and examination searches from the United States. The fact that patent law has always maintained both a domestic and an international focus has greatly facilitated the work on comparative historical narration: the fact that all patent laws have been expressly shaped with view to international developments has made it possible to paint unique national histories on a shared canvas.

On specific instance were theory had to be “historicized” in the project should be mentioned. Initially, the theoretical assumption of this project was that the patent philosophies evolved gradually and only late took a definite form. The opposite turned out to be the case. The patent philosophies emerged at discrete points in time. Moreover, once articulated and in place, ensuing history consisted in something of a withering of originally strong political commitments to a core ideology. The latest expression of this was the 2011 American revision of its unique pro-inventor originality principle.

This withering was, however, never as dramatically felt as during the late 19th century, where the anti-patent movement almost succeeded in abolishing patent laws across European countries. Although certain aspects of each philosophy, as presented in the ideal-types, arrived later in time, these did not introduce any new philosophy or even rearticulate it substantially – this was even true during the 2011 revision of the U.S. Patent Code, where the necessity to protect individual inventors was quoted extensively by the legislature despite the fact that a major part of the new law effectively reduced their rights.

As the economical and industrial importance of patents has grown steadily during the last two hundred years, changes to patent law and practice have naturally followed. These changes, no matter how dramatic and practically important, have left the core ideologies largely untouched, though their political force is marginal in comparison to the time when they were articulated.

This revelation has constituted the most drastic theoretical reevaluation of the historical narratives. Instead of looking at modern patent philosophy as a gradually

evolving complex of ideas the historical record shifted theoretical and empirical focus to the conditions for the emergence of a particular philosophy as well as the reasons as to why it is adopted and experiences dissemination.

This Study

As per Charles Ragin's classification, this study is a case-oriented comparative analysis, the cases being the patent laws of Europe and the United States. As is often the case with such studies, the goal is both "historically interpretive and causally analytic" (Ragin 1987:35). With only two cases, the study approaches standard qualitative explorations of single cases. Ragin further notes about such case-oriented comparative studies that they seek to treat cases as 'wholes' rather than as bundles of variables. Consequently, causal explorations do not necessarily lead to conclusions on the variable-level, but may lead to findings which keep the cases as analytically distant totalities.

The choice of only two cases is justified by the historical scope of this study. Not only was intellectual property law an ideological offspring of the western hemisphere, but no other civilization or country has had any comparable history of such legal arrangements. One could, therefore, say that the two cases offer themselves for analysis by the historical reality of intellectual property.

Closer historical scrutiny reveals that the two philosophies can be more precisely described as one "American" and one "German" (the latter, eventually adopted regionally in Europe). The German patent law is therefore also an "anomaly" in its own right, something which warrants close inspection in 'strategic narratives' (Stryker 1996).

The choice of historical, in addition to comparative, focus of this study is derived from the opportunity this gives for understanding current institutional arrangement (on the aims of historical comparative research, see Ragin 1987:3). Because only two cases present themselves, each separate institutional history should be written in constant juxtaposition to the other:

The case-oriented strategy attempts to approximate experimental rigor by identifying comparable instances of a phenomenon of interest and then analyzing the theoretically important similarities and differences among them.

(Ragin 1987:31)

The two cases chosen for comparison in this study, furthermore, essentially correspond to two different legal regimes. There *is* an American, and there *is* a European patent system, each with its own unique foundational documents and legal trajectory. This fact alone means that this study has pursued its empirical material on the understanding that it comprises actual “empirical units”.

On the other hand, the American and European systems (unlike their core ideologies) have undergone vast procedural and administrative changes – in the European case this is particularly true since it exists alongside individual European countries’ separate patent systems. What is more, a key initial understanding of international patent law is that no system has developed in isolation, which means that any delineation between legal histories must be accepted as partially artificial. The two cases, therefore, are understood as both “empirical units” and as “theoretical constructs”, depending on strictness of definition as to what a case *is* (see Ragin 1992:9).

A note on the scope of the historical narratives should be added. Initially, the intention was to write three historical chapters; one for the United States, one for Europe, and one for international patent law history. Upon closer historical inspection, this solution proved untenable. The reason for this is that it is theoretically impossible to write the histories of patent law of any country without constantly taking international factors into consideration. The reasons for this are both theoretical and empirical.

Theoretically, the division between international and national patent law is artificial and somewhat meaningless as all patent systems have been adopted with an international scope in mind. The very first, pre-modern, patent codes in different European kingdoms were created to attract foreign craftsmen from abroad by giving them exclusive privileges. Later, modern patent law was explicitly tailored to suit domestic needs against international competition.

Empirically, one could make them claim that international treaties between different countries constitute a different type of law than national patent codes, but this assumption masks the fact that all treaties were the outcome of particular national needs and agendas. To give but a few examples, the Paris Convention of 1883 was the direct outcome of the combined attempts of American politicians and European industrialists, both fearing that the anti-patent movement of the time would hurt their commercial interests if successful in abolishing patents in Europe (the United States at the time was rapidly supplanting Britain as the world's leading industrial power).

The Patent Cooperation Treaty, adopted some hundred years later, was an American attempt to reduce its massive application burden by avoiding duplicate

searches on the same invention filed in separate national applications – a cause the United States could pursue almost alone and uninhibited as European countries at the time were preoccupied with work on establishing a regional patent office (much effort of which was driven by French desperation of lagging domestic industry).

It thus proved best to include international treaties wherever they fitted into the two separate narratives and do so with particular view to the relevance they have had in explaining how they developed. The fact that most international treaties have almost exclusively been aimed at procedural patent law has also made them less relevant to explain the origin and development of substantive patent philosophy.

Data Material

Primary Sources

The primary data for this study has consisted of legal documents of national, regional, and international character (a list of primary document is given in an appendix). The documents span some 200 years of history, though with greater concentration around key historical periods where patent policy has been unusually active. It is reasonable to group the primary data for this project into three broad groups, each with further bifurcation.

(i) American documents; hereunder legislative and judicial. These documents comprise the United States Constitution, as well relevant chapters from the Code of the United States of America with associated legislative histories. Judicial decisions from

precedential courts have also been analyzed as they carry significant force in creating and maintaining the American system of patenting.

Access: All documents of the Code of the United States are available from Cornell Law School's *Legal Information Institute*.² Decisions, opinions, and briefs of the United States Supreme Court are published online by the court.³ Important case law from other courts can also be found online, from various sources. Important patents, as well as oppositional appeals and their decisions are made available through the United States Patent and Trademark Office website, under 'Final Decisions of the Board of Appeals and Patent Interferences'.⁴

(ii) European documents; comprising the foundational documents of the European Patent Organization as well as important earlier legislation from different European countries. The most foundational document is the European Patent Convention from 1973, in addition to the Strasbourg Convention – its institutional forerunner from 1963. The institutional structure of this patent office grants judicial authority to various Technical Boards of Appeal, and interpretational authority to its final appeal board, the Enlarged Board of Appeals. Relevant cases from the boards' records have been consulted

Access: The European Patent Office administers all foundational documents of its institution and their institutional history, and makes them available online.⁵ The same office also publishes the entire registry over important case law established through its

² <http://www.law.cornell.edu/uscode/>

³ <http://www.supremecourt.gov/>

⁴ <http://www.uspto.gov/ip/boards/bpai/index.jsp>

⁵ <http://www.epo.org/patents/law/legal-texts.html>

organizational appeals procedure.⁶ Different national legislative documents had to be retrieved through libraries, archives, and online depositories.

(iii) International Treaties; aspects of intellectual property treaties which have explicitly oriented the global field of patenting have been included. The pertinent material comprises some 20 treaties, with varying degrees of relevancy; some treaties encompass only limited aspects of patents, whereas others have created large-scale overhauls of national systems. Some further treaties – most importantly the ongoing sessions of the proposed *Substantive Patent Law Treaty* – are not yet in effect or even given their final form.

Access: Conveniently, after the 1967 Stockholm *Convention Establishing the World Intellectual Property Organization* (WIPO), all extant and future treaty material, as well as written statements by national delegates and minutes from international summits, are administered and made publicly available online by WIPO.⁷

Secondary Sources

Secondary data for this study comprise commentaries, opinions, biographical histories of important figures in the world of intellectual property, as well as historical studies of the relevant places and periods. Valuable sources to earlier understandings of patent law have been found in court opinions (especially for analysis of American law) and in academic writings of the time (particularly for European law). There are some early works which have been immensely helpful in understanding the meaning of the law

⁶ <http://www.epo.org/patents/appeals/case-law.html>

⁷ <http://www.wipo.int/treaties/en/>

which deserve separate mentioning (more detail about each can be found in the bibliographical list).

Senator Ruggles, who in many ways authored the important 1836 U.S. Patent Code, gave a detailed description of the understanding and aims of American patent law at the time before the U.S. Senate. Two treatises on American patent law from the 19th century proved indispensable, both for historical development and understanding of patent law at the time; one belonging to Tickenor G. Curtis from 1873 and one to William C. Robinson from 1890.

The U.S. Congress commissioned a comparative analysis of the world patent systems in the 1930s, a study which would become the first international comparative work on patent law. The study conducted by Jan Vojáček to meet the demands set by Congress was published in 1936 and has been an indispensable comparative reference guide to this work, both analytically and historically.

Early European treaties have also been consulted, in particular Benjamin de Constant's philosophical discussion from 1818 and the hearings before the French Revolutionary Assembly, led by Chevalier de Boufflers; but also letters written between Frédéric Passy and Michel Chevalier which were published together in 1862. Machlup and Penrose's study of the patent controversy in 19th century Europe, published in 1950, remains the most systematic treatment of the subject to date and the present work is naturally heavily indebted to it. A more recent monograph written by Kees Gispem in 2002 on German industrial policy from the era of *Weimar* to that of *Bonn* has also been immensely useful.

CHAPTER 5 – TWO PHILOSOPHIES OF PATENTING

Introduction

In this section, the ideological foundations of the European and American patent systems will be explained in an ideal-type analysis. It will be shown that, although functionally similar, the two systems are based on two fundamentally different ways of approaching the property of invention. Where necessary to elucidate the present system, terse historical reference will be made, though not as detailed as in chapters 6 and 7.

Researchers on industrial policy in Europe and America have been keen to notice differences in technological culture between the two. American market-driven innovation has been contrasted to European state regulation (Dobbin 1997), and the entrepreneurial approach in America – characterized by induction and trial-and-error – has been juxtaposed to deductive engineering in Europe (Kranakis 1996). Yet others have revealed diametrically different implementations of the same technology for American and European companies within the same industry (Ibsen 2009). The exposition constitutes a contribution to these similar-yet-different analyses: those depicting how European and American politics of technology pursue similar results but do so by systematically different means.

Although both systems share many features in common, and despite the fact that each system comprises a conglomeration of principles which are not always explicitly based on any single foundational philosophy, this chapter tries to divulge these two elusive philosophical cores. Although the term ‘philosophy’ is used here, the fundamental

understanding of the role of deeper idea is very similar to the approach to political ideology presented through the works of Michael Freeden (1998, 2003).

Instead of thinking of political ideologies as a set of mutually exclusive political ideas, Freeden argues that one should look for the way widely shared political concepts are organized in a given political orientation in order to discover its basis: “An ideology is a wide-ranging structural arrangement that attributes meaning to a range of mutually defining political concepts” (Freeden 2003:52). The same political concept – say, ‘freedom’ – can thus appear in opposite ideologies without in any way serving the same purpose. Its role and position in the patterned organization of other political concepts which matters and which gives an ideology its distinct orientation. An ideology is thus not fixed but able to absorb new political concepts and attribute meaning to new social phenomena; it is not a fixed geographical location, but a ‘road map’. The work of the theorist of “ideologies”, according to Freeden (1998), is “interpreting and decoding” (p. 33) and to “reconstruct and amplify” (p. 34) a political discourse. Freeden’s theoretical and methodological assumptions guide the search for ‘legal philosophies’ of this section.

The task is akin to the theory for musical interpretation and performance associated with the German composer and conductor Wilhelm Furtwängler – Principal Conductor of the Berlin Philharmonic from 1922–1945/1952–1954 – of *Fernhören* (“distance-hearing”). In music, it means uncovering the underlying structure and concept of a work which goes beyond notation and single phrases, or even separate movements. In comparative sociology, the same attempt to represent social phenomena is described by Max Weber’s (1997:88) notion of “ideal-types”, which he describes as attempts to

accentuate and synthesize aspects of cases and thus create simplified and abstracted “analytical constructs”.

There is an element of interpretation involved in the weberian search for ideal types. It is not enough to point out differences of mere formality or lexical nature to articulate ideal-type claims. In contrasting American and European patent law, for instance, some differences are plainly attributable to matters of jurisdiction and national sovereignty: Patent marking (seen in inscriptions on products of “pat. pend.” or “Patented”) is regulated by Statute in the United States⁸ whereas the European Patent Convention (EPC) does not mention patent marking by a single word. This has nothing to do with differences of political philosophy but is a consequence of the fact that patent marking is a matter of national enforcement and not the province of regional patent execution under the EPC. In fact, most member countries have regulations on patent marking, many of which are similar to American law.

Inventors and Inventions

The role of human ingenuity in shaping technological change and progress touches upon a major philosophical question which presented itself with the rise of industrial society. Implied in orthodox Marxism, and explicit in various notions of ‘technological determinism’ (Ogburn 1922; Ellul 1967), is the idea that either social circumstances, or technology itself, will shape the formation of ideas and their industrial

⁸ Title 35, U.S. Code, Art. 287(a)

embodiments and is hence not susceptible to manipulation of conscious human planning and intervention.

Since the Enlightenment, thinkers who avowed individual rights and transcendental qualities of the human faculties have pulled towards the opposite end. Modern attempts at theoretical revolution or synthesis have looked at the mutual relationships between human ingenuity and social conditions (Mokyr 1992) or asserted the impossibility to distinguish the contributions of human thought from that of technical objects and machines in industrial advancement (Latour and Woolgar 1986). The empirical problem for philosophers, politicians, patent examiners, judges and jurors is nonetheless constant; whether to emphasize the importance of a creation more or the person who made it; inventors or inventions.

Fundamentally speaking, all patents ever awarded have involved both an owner to whom it is issued and an invention for which it is granted. The two ideal types therefore indicate a general and relative tendency of approach to patenting towards one side and not a categorical choice. As no such tendency is declared or explained by either system, it can only be discovered by knowledge of the histories of both and comparison between them. However, as the historical expositions (chapters 6 and 7) show, the relative tendency has been vital in ensuring the successful creation of each philosophy, both of which emerged in times of political contestation over the patent institution and contributed served to give it legitimacy during different types of crises.

The systemic difference is relative for another reason, as all patent systems are based on a trade-off between private rights and those of the public; they protect the rights

of an *inventor* for a short time to ensure that other members of society will have ensuing access to the *invention*. Even as an ideal-typical patent system it therefore has little meaning to speak of one as protecting only the one or the other. This holds even stronger when the ultimate objective is to explicate the relative differences of two patent systems, as here.

Nonetheless, even a tendency of a patent system to focus more on the rights of the inventor or the public can be deduced to a specific philosophical foundation. An ‘inventor philosophy’ is based on a certain variant of the labor theory of value which accepts that social welfare is promoted by the contributions of the inventive activity of individuals. An ‘invention philosophy’, on the other hand, expresses a utilitarian social contract between inventors and the state and therefore stresses the condition that patents shall facilitate the diffusion of patented information more heavily (see Sherman and Bently 1999:150).

Of course, the philosophical foundations themselves are not atomic entities but form constellations of other thought systems. For instance, as shown by Richard Biernacki’s (2001) historical investigation into the sources of Marx’s labor theory of value, rather than springing ready from Marx’s head – like Athena in full armor from Zeus’s – it was a fusion of a chiefly British understanding of labor’s value through representation on the labor market and a German notion of labor value as a matter of hours spent in the productive process. The lesson is that one must always keep the comparative dependence on such concept in mind when analyzing them separately.

An important understanding informing this work is that this general and relative tendency of each ideal type is more than a taxonomic exercise. The type of philosophy (*inventor or invention*) constitutes a direction which influences legislation and proclivities of courts and has shown a curious ability to persist, even through phases of major political reform and international harmonization. Consequently, it becomes pressing to account for what constitutes these differences before attempting to explain historical developments. The motivation of the analysis below therefore has certain affinities with Oswald Spengler's (2006) study of cultural history as one resting on certain deeper "primary symbols" which can morph into different expressions but always echoing a unifying deeper logic.

At the outset, statutory laws of Europe and America reveal the difference of focus of the two regimes. American patent law states that

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The European Patent Convention (EPC), on the other hand, specifies that

European patents shall be granted for any inventions which are susceptible of industrial application, which are new and which involve an inventive step.

The EPC then lists excluded subject matter, such as discoveries, scientific theories and mathematical methods, aesthetic creations, schemes, rules and methods for performing

mental acts, playing games or doing business, and programs for computers, presentations of information, inventions the publication or exploitation of which would be contrary to “ordre public” or morality, plants or animal varieties and essentially biological processes.⁹

The American “whoever invents” emphasizes the person who has created something whereas the European “any inventions” stresses his or her creation and does not even restrict eligibility to the person who made it. Moreover, American law does not include negative definition of excluded subject matter as the EPC does. These facts alone would permit a superficial characterization of American patent law as *inventor-leaning* and European as *invention-leaning*.

As the discussion below will show, there are more grounds to defend this assertion, which justifies the treatment of the basic patentability definition of each regime as expressions of a deeper philosophy and not merely an isolated linguistic curiosity. The wordings of the two charters are but inscriptions on the tips of the icebergs, each with a different mass beneath the surface (for summary of the two philosophies, see Table 1 at the end of this chapter).

A further important implication of the identification of one inventor-type and one invention-type is that the two concepts are somewhat exhaustive as to the foundation of patenting philosophy: Inherent to all innovation is the occurrence that *someone* invented *something*, and relative emphasis of a patent system on either *someone* or the *something* marks the two fundamental approaches; there simply is no logical third alternative.

⁹ EPC, Arts. 52, 53.

United States patent system has pursued this *someone* and Europe the *something*, and all alternative regimes will resemble one or the other by approximation. As will be discussed later on, the fact that both philosophies are more than a hundred years old poses an ideological challenge for all future direction of global patent harmonization and reform; which philosophy to adopt when there is no new alternative?

A notice should be made that a somewhat similar attempt – though not a primary research objective – has led to the proposition of an American “invention” (importantly, as verb, not noun, as in the present treatment) approach and a European “diffusion” approach (see Khan 2009:304). The reasons for not employing the same titles is that they pertain to assumptions of political consequences more than underlying philosophy and focus on systemic expediency and technological consequences – none of which are aimed at in the present analysis. Khan’s concern is the difference in political ramifications during the 19th century, not ideal type.

The American Logic: The ‘inventor system’

Both the American legislature and the judiciary have been said to have the longest and most consistent patent-friendly attitude in the world (Khan 1995; Sell and May 2001). By comparing its own to European patent systems, the U.S. Supreme Court would boast, already in 1829, that

In the courts of the United States, a more just view had been taken of the rights of inventors. The laws of the United States were intended to protect those rights, and to confer benefits; while the provisions in the statute of

England, under which patents are issued, are exceptions to the law prohibiting monopolies.¹⁰

Several aspects stand out to justify this characterization: America is one of the few countries to constitutionally guarantee intellectual property rights, and it was the first nation to do so; U.S. patent law is more permissive with regard to patentable subject matter, and in general imposes fewer restrictions on conditions for patentability; courts in the U.S. have been comparatively reluctant to revoke patents; and pressure for global expansion and harmonization of patent law has primarily been of American origin. The fact that much patent practice in the United States is influenced by lawyers and not engineers or technicians (Reynolds 1998) reflects the strong legalistic commitment of this country's patent system.

These factors, however, merely attest to the willingness towards patents in the general political climate, or relationships between law and legal practitioners, but do not necessarily reveal deeper philosophical understandings of inventorship, technology, and the purpose of the law. To see the latter, we need to look at the substantive patent law of the United States as well as some of their directly derived procedures which are unique to this country.

In this section, crucial parts of American substantive patent law will be presented and the relationships between them will be explained. The points will be focused under certain key concepts that make comparison to the European system appropriate. The

¹⁰ *Pennock v. Dialogue*, 27 U.S. 1 (1828).

following characteristics will be discussed: technological ‘inclusiveness’, focus on ‘idea’, all under the overarching goal of the American patent system of ‘market expansion’.

Inclusiveness

“anything under the sun that is made by man”
- Senator Alexander Wiley¹¹

By inclusiveness is here meant the stance towards patentable subject matter; or, the types of inventions that are eligible for patent protection. United States patent law is unique in having included all areas of industry from its inception (Guellec and van Pottelsberghe de la Potterie 2007:32). This American ‘inclusiveness’ is enshrined in the two most important sources of American patent law.

First of all, the U.S. Constitution explains that Congress shall have power

To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries¹²

There is a certain irony in the fact that American industrial inclusiveness, as seen in the so-called ‘intellectual property clause’ of the U.S. Constitution in reality stemmed from a restrictive attempt; namely to limit the influence of Congress over private commerce (see Walterscheid 2001:766). This, in turn, was motivated by the same suspicion to the royal nepotism which had haunted all early patent systems and made sure all of the modern era were created in an attempt to curb other privileges, either

¹¹ S. Rep. No. 1979, 82d Cong., 2d Sess., 5 (1952)

¹² United States Constitution, Art. I, § 8, cl. 8

governmental or corporate (as will be explained in chapter 5). If restriction on potential misuse is ingrained in all modern patent laws, industrial inclusiveness is not, however.

Next, federal patent law of the United States adheres to the inclusiveness of the Constitution: it is explained that “invention” includes “discovery” – an echo of the language in the Constitution – and it offers a wide definition of “process” for which patents can also be granted.¹³ The further specification is that

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore.¹⁴

Hence, both the Constitution and federal law in the United States define patentability in a positive way. The law declares what *is* patentable. And, as it turns out, this definition is very broad: ‘process’, ‘machine’, ‘manufacture’, ‘composition of matter’, and ‘improvement’ of any of the above qualify.

That is not to say that there are no exclusions to patentability in America. The three basic requirements of ‘novelty’, ‘utility’, and ‘non-obviousness’ are designed to exclude applications. However, all of these requirements pertain only to facts of individual applications and not to entire industries. It is precisely this that makes the system inclusive; no field of technology is categorically denied patentability. This further makes an industrially inclusive system an ‘inventor type’: the characteristics of the

¹³ Patent Act of 1952, 35 U.S.C. § 100a-b.

¹⁴ Patent Act of 1952, 35 U.S.C. § 101.

inventor are of essence, not the nature of the business or trade to which the invention belongs.

It is the destiny of all patent systems to deal with continuously changing and emerging technology. An inclusive system will therefore be prone to accept the patentability of types of industry that was not foreseen at the time the system was created. Inclusiveness is therefore a tendency which manifests itself over time. Concretely, the difference of approach between the United States and Europe stems from the nuance of one nearly homologous requirement of patentability: that of ‘utility’ in the United States and its corresponding ‘industrial applicability’ in Europe. The importance is more than onomastic: important European case law has made it clear that entire “subject-matter or activities may be excluded from patentability under [requirement for ‘industrial applicability’] even where they have practical utility”.¹⁵

It is not clarified what exactly comprises ‘utility’, though the United States Patent and Trademark Office (USPTO) guidelines to patent examiners provides some very broad qualifications.¹⁶ In addition, and in contrast to the European counterpart, the American ‘utility’ requirement is “not of great importance, because it is easy to make the case that almost anything is potentially useful” (Jaffe and Joshua Lerner 2004:27–28). The important point is that the ‘utility’ requirement discriminates individual inventions; unlike the ‘industrial applicability’ which essentially distinguishes classes of inventions.

¹⁵ Headnote 3, in decision of Technical Board of Appeals, European Patent Organization: T 388/04 of March 22, 2006.

¹⁶ *Manual of Patent Examining Procedure*, “2107 Guidelines for Examination of Applications for Compliance with the Utility Requirement”.

In the absence of any European-style ‘industrial applicability’ requirement, oddities have been granted patents from the USPTO, such as the infamous “method for exercising a cat”¹⁷ by letting the animal follow a spot on the floor generated by a laser pointer, or the now revoked “method of swinging on a swing”¹⁸ by exercising consecutive force on the two ropes thereby inducing side-to-side motion as the swing moves back and forth.

There is another and interesting function of the ‘utility’ requirement, one that again illustrates the American approach of treating patent applications individually and flexibly rather than as members of overarching categories. In Europe, patents can be denied or revoked on moral grounds. No such clause exists separately in American patent law, but it is understood as part of the utility requirement. In the 1817 case *Lowell v. Lewis*¹⁹ Justice Story explained the principled understanding of utility as one that “is incorporated into the act in contradistinction to mischievous or immoral.”

Although the U.S. Constitution and federal law express inclusiveness, this could amount to little if actual patenting practice and court decision was restrictive. Both the USPTO and American courts have, however, extended patent eligibility to a vast array of industries. As a broad statement, American practice has been to include virtually every new type of technology begotten by industrial history. Equally broadly we can identify two historical periods, the first being non-digital and lasting until the second half of the 20th century, the second digital age reigning since then.

¹⁷ U.S. Patent 5,443,036.

¹⁸ U.S. Patent 6,368,227.

¹⁹ *Lowell v. Lewis* 15 F. Cas. 1018, 1019 (C.C.D. Mass. 1817)

In the first period, American inclusiveness materialized itself with stronger philosophical rigor vis-à-vis various exclusive system which, on their part, posed restrictions on certain industries, though often for political reasons in order to protect certain branches of domestic industry. Some technologies, such as pharmaceuticals, were in fact prohibited for ideological reasons, such as in France (by the patent act of 1844); but, for instance, the Swiss requirement until 1978 that only inventions displayed by a model could be patented had the intended effect of making the country a haven for patent piracy of chemical substances which was maintained to give domestic industry an edge against strong competitors abroad. Against such political trickery, American inclusiveness appears as an honest extension of the very notion of fair protection.

With the arrival of the digital age, the philosophical stringency of American inclusiveness has been put to the test. For inventions related to software and business methods patents have been awarded for the last couple of decades, to the objections of commentators who claim that this practice imperializes on the domain of copyrights (by advocate groups such as *NoSoftwarePatents.com*), blurs the distinction between commercial technology and science (Hintjens 2006), and undermines the balance between private and public rights (J. Boyle 2000).

In Europe, both software inventions and business method inventions are subject to restrictions,²⁰ although applicants have been able to overcome many of these by proving additional “technical effects” of their inventions. In the United States, although software

²⁰ EPC, Art. 52(c) deems “methods for ... doing business, and programs for computers” as unpatentable.

and business method patents for long had a hard time succeeding at the USPTO, many were patented (Conley 2003).

In a 1998 decision, the American CAFC opened the gates wide for software and business methods by announcing that “Since the 1952 Patent Act, business methods have been, and should have been, subject to the same legal requirement for patentability as applied to any other process or method”.²¹ Practitioners at the USPTO have later been directed to accept that process inventions do not have to be in the technological arts in order to be patentable.²² In other words, in American patenting practice, business methods and software inventions were construed as similar in nature to traditional process inventions (inventions for technical methods, not products).

Recent decisions by the CAFC²³ as well as the U.S. Supreme Court²⁴ have stemmed this trend somewhat and have added the requirement that they must embody some tangible result. In effect, American practice as to software inventions has moved somewhat closer to Europe’s “technical effect” specification for similar inventions. Nonetheless, the conditional admission for such industries in Europe and the United States is derived from opposite logical poles: in Europe, software inventions are denied patents *unless* they reveal technical features; in the United States, they are permitted *provided* they introduce a palpable effect. This distinction mirrors the overreaching difference of inventor-type inclusiveness and invention-type exclusiveness.

²¹ *State Street Bank and Trust Company v. Signature Financial Group, Inc.* (149 F.3d 1368 [Fed. Cir. 1998], p. 1375, *cert. denied*, 525 US 1093 [1999]).

²² *Ex Parte Lundgren*, BPAI, 2004.

²³ *In re Bernard L. Bilski and Rand A. Warsaw*, 545 F.3d 943, 88 U.S.P.Q.2d 1385.

²⁴ *Bilski v. Kappos*, 561 U.S. ____ (2010).

The other major recent consequence of American inclusiveness has been the invitation to medical inventions of surgical processes and genetic treatment. Other countries have blocked the commercial exploitation of genetic inventions, for instance the new Constitution of the Swiss Confederacy which makes “all forms of cloning and interference with the genetic material of human reproductive cells and embryos” unlawful.²⁵ The EPC, on its part, explicitly forbids the patenting on “methods for treatment of the human or animal body by surgery or therapy and diagnostic methods practiced on the human or animal body”.²⁶

The United States is one of a few countries to allow both the patenting of medical treatment of humans and surgical procedures. Despite national controversy – noticeably by the infringement suit by a surgeon for a patented type of eye operation against a clinic in Vermont in 1993 – American patent law has not been amended to exclude such patents. However, the patent code was changed to exclude from infringement the use of patented medical activities by medical practitioners and health care entities.²⁷ Although this restricts patentee rights over medical procedure patents, the restriction is not categorical but conditional on the characteristics of the infringers and is, in any case, a matter of court decision during litigation and not of substantive patentability requirement.

For the related field of organic material, the United States has allowed patentees to probe into the new terrain of animal and plant variety patents.²⁸ From the late 1980s onward, USPTO practice has made it “clear that any life form is patentable provided that

²⁵ Art. 119. *Federal Constitution of the Swiss Confederation* of 18 April 1999. It should still be remembered that national laws of European countries do not necessarily reflect EPO rules.

²⁶ Art. 52(4).

²⁷ Public Law 104-208 addition of subsection (c) to Title 35, U.S. Code Section 287 in 1996.

²⁸ Spearheaded by the much discussed *Diamond v. Chakrabarty*, 447 U.S. 303 (1980).

human technical intervention is required in its production” (Grubb 1999:252). It is interesting to notice that the technical qualification is here introduced at the opposite end than in the admission for software invention which must produce some technical result; the effect has been the same, new industries have seen expansion of patent rights in the last couple of decades.

The situation in Europe was only recently settled with regard to animal and plant varieties. First of all, such inventions are denied patents by statute under the EPC²⁹, and it was for long wholly unclear what exactly constitutes an “animal variety”. Although the prohibition does not cover microbiological processes it is not evident what this implies either. After the European Union issued Directive 98/44, stating that isolated genes can be patented, it became pressing for the European Patent Office (EPO) to find a way to amend its laws accordingly. Today, the EPC permits the patenting of biological material also occurring naturally if it can be isolated technically from their natural environment, provided the microbiological product is not a plant or animal variety.³⁰

Constitutionally, federally, and by manner of judicial precedence, the American patent system has therefore proven flexible in admitting new subject matter into the realm of patents. The general inclusiveness emerges from a positive definition of patents (what *is* patentable), a broad definition of invention (product, process, composition, improvement), and a flexible technological requirement (‘utility’). Together, all the components establish a system which can only exclude or revoke patent rights on an individual basis.

²⁹ Art. 53(b).

³⁰ EPC, Chapter V, Rule 27, “Patentable biotechnological inventions.”

Focus on Idea

It might appear strange to attribute focus on *idea* to the American ‘inventor-type’ as the European ‘invention-type’ seems to signify a more appropriate candidacy. However, as will be clear in the discussion below, ‘idea’ here is opposed to ‘information’ – both of which are aspects of an ‘invention’ – but with the crucial difference that the ideational aspect pulls the concept of invention towards unity with the inventor whereas the informational separates the two. The philosophical foundation of a pure inventor-understanding of industrial creativity was, perhaps, never as clearly articulated as in the negotiations leading to the first French patent system: “It is less obvious to attribute a tree that grows on a field to the owner of the field than it is to ascribe an idea to the spirit of its creator.”³¹

Information-focused patent systems are not guided by characteristics of the inventor but to those of the application. They therefore do not include requirements for originality per se, but only of constituting a new invention for which no previous application has been filed. Information systems are also not based on the merits of inventors or tailored to repay them for their efforts; rather, they seek to ensure diffusion of the information contained in applications. Only an idea-focused system could lead a judge to conclude, broadly, that

³¹ Chevalier de Boufflers before the first Constitutional Assembly: *l'arbre qui naît dans un champ n'appartient pas aussi incontestablement au maître de ce champ, que l'idée qui vient dans l'esprit d'un homme n'appartient à son auteur*. “Rapport fait à L'Assemblée Nationale”, *Comité d'Agriculture et de Commerce*, December 30 1790.

a patent is not a hunting license. It is not a reward for the search, but a compensation for its successful conclusion³²

As all other offices, the USPTO does not grant patents for mere ideas apart from their implementation, something the U.S. Supreme Court affirmed already in 1853.³³

What makes the American system one that is idea-focused rests mainly on three characteristics: the fact that it favors the first inventor, as opposed to the first applicant; its low fees and longer periods between renewal of rights – which, in effect, weighs in favor of patentees rights relative to the rights of the public for protection against monopolies; its granting of grace periods during which the inventors might work the invention before applying for patent, provided that the inventor has published his or her finding beforehand.

Originality

From its inception, the American patent system has endorsed principles of individualism which have materialized into laws protecting the rights of inventors against the state, the public, and commercial interests – something which have earned American history of patenting the attribution of “democratization of invention” (Khan 2009). While other areas of American law have been explicitly discriminatory and anti-democratic, those pertaining to patenting have always been secured in individualist and objective criteria. For instance, whereas antebellum laws of many states protected slavery and prohibited people of color from basic human rights, patents were awarded to slaves –

³² Justice Fortas in *Brenner v. Manson*. Supreme Court of the United States, 1966.

³³ *O'Reilly v. Morse*

irrespective attempts by slaveholders to appropriate the patents as their property (see Khan 2009:85).

Since its creation, federal American patent law has maintained *originality* to be a component of novelty. Novelty has been the foundation of all modern patent systems but this has typically been restricted to characteristics of the invention itself; it must not have been known prior to the moment someone filed an application on it. Originality, on the other hand, is a characteristic which relates to the person who conceived the idea of the invention. In almost all patent systems, the first person to file for an application is entitled to the patent provided it is novel.

In the United States the originality requirement implies that only the “first and true inventor” is eligible as patentee (Burge 1999:39). This has been designated as the “first-to-invent” (FTI) system of patenting which was at the core of the American system until it was replaced by a toned-down “first-inventor-to-file” (FITF) system in 2011.³⁴

The new American system for originality is a hybrid between its older system – where inventors had to swear an oath of being “first and true inventor” and could be contested on that ground during interference proceedings – and the European system which only considers the date of filing an application and not the identity of the inventor. Traditionally, the process of inventing has been construed as two ensuing steps in U.S. patent law: conceiving the invention and “reducing to practice” – the latter comprising working the invention, producing it, but also the process of filing a patent application on

³⁴ The Leahy-Smith America Invents Act of 2011 ended two centuries of originality tradition in U.S. patent law, but did not replace it entirely with the European system of *first-to-file*.

it.³⁵ The act of conceiving the invention constitutes the date of inventing under the American regime.

There have been many political attempts to reduce the practical burdens stemming from conflicts of originality, and – although all the practical implications are still not visible – recent legislation has succeeded in eliminating the possibility to contest originality as a ground for rejecting patent applications. The American system still maintains its role in patent eligibility, by encouraging inventors to publish their discoveries prior to filing applications by thus ruining novelty for others but not for themselves.

When legal reforms take effect late in 2012, the first publication – whether through patent application or, for the inventor, scientific report – will constitute the date of invention under American law. This drastically reduces the traditional system which allows parties to prove originality by other means, but it still echoes a uniquely American philosophy of favoring the individual inventor over the person or entity with best access to the legal assistance to pursue a well-crafted patent application.

Low Fees³⁶

It is typically said that patents last for twenty years but this figure only marks its potential life. In fact, most patents are terminated early on. Although all patents issued mark a legal success, “only those patents which are of real commercial importance are

³⁵ 2138.05 “Reduction to Practice” [R-5] – 2100 Patentability.

³⁶ Changes to the American system with the Leahy-Smith America Invents Act of 2011 will allow the USPTO to change the fee structure to “in the aggregate” recover the estimated costs of its activities, something which has the potential of increasing current patenting costs.

kept alive for their full term” (Grubb 1999:6). Estimates from the EPO has suggested that as little as two to ten percent of granted patents are successful, depending on industry and definition of success (van Pottelsberghe 2009:10).

Until 1980,³⁷ there were no maintenance fees in the United States which meant that patents were automatically in force for their full statutory term upon issue (seventeen years in the U.S. until the country signed the TRIPS agreement in 1994). Although renewal fees have subsequently been introduced, they are lower than in Europe and each renewal lasts longer. What the USPTO calls “maintenance fees” are due at three intervals after the patent grant.³⁸ Although the maintenance fees are cumulative, they are low by international standards. Conversely, the EPO imposes yearly renewal fees after the third year³⁹ and fees vary in relationship to the number of member states for which protection is sought.

It has been argued that low fees directly contributed the ascension of the United States as the global leader in technology (see Khan 2009 chap. 10) but of more importance to the present concern is the fact that American reluctance to impose harsh fees on patents signals a long commitment to the ideational aspect of patents. As far as the technical information embodied in a patent goes, the public stands as beneficiary the moment the application arrives at the patent office and is published by it. Attempts to

³⁷ With the revision of Title 35, U.S. Code, Art. 41 by Public Law 96-517. The new fee schedule, interestingly, adopted the payment scheme for the less valuable design patents established by Public Law 593 of 1952 but altered the up-front fee system to a renewal system.

³⁸ At 3½, 7½, and 11½ years, respectively <http://www.uspto.gov/patents/process/index.jsp> accessed March 10, 2011.

³⁹ EPC Art. 86(1) specifies that “Renewal fees shall be paid to the European Patent Office in accordance with the Implementing Regulations in respect of European patent applications. These fees shall be due in respect of the third year and each subsequent year, calculated from the date of filing the application.”

limit patent life through costly renewals will therefore serve to release the patented information to the public.

An ‘inventor system’, on the other hand, is more committed to the furtherance of the idea patented and is more willing to individualize responsibility for its utilization. Validity concerns are entrusted the owner of the patent who will have to defend the patent in lawsuits. Just as all good ideas will have to face the court of time, patents in the American ‘inventor system’ are expected to encounter conflict.

Market Expansion

“we can’t reject something just because it’s stupid”
– Deputy Commissioner Esther Keplinger⁴⁰

All patent systems are based on a promise of commercial exploitation on part of holders which is justified with reference to the future benefits of the invention to the public once the patent has lapsed. Individual commercial interests and public informational benefits are thus two counterweights which exercise their force to tip the scale in one direction or the other. The ‘utility’ version of the technical requirement for patentability of the American system has made the commercial-individual side heavier whereas the European ‘industrial applicability’ variant has lightened it.

Moreover, a system dedicated to market expansion is likely to individualize patent protection by transferring concerns of patent validity over to patentees rather than maintain it as the responsibility of a patent office alone. This can be deduced from the fact that patent validity requires expensive search procedures on part of patent offices if

⁴⁰ Quoted in *Los Angeles Times*, February 7, 2003.

they are expected to vouch for the novelty and utility of inventions. This cost is drastically reduced if applicants themselves are forced to scrutinize the aptitude of their inventions and defend their validity in private lawsuits. A system dedicated to market expansion will therefore be adversarial; one which permits and encourages all kinds of private legal actions for patents, including licenses, civil proceedings for infringement or revocation.

Although the 1836 Patent Act shifted important responsibility over patent validity from the courts to the then established patent office, the American system has continued to rest on a fundamental assumption of patents as instrument of commercial exploitation. This understanding is expressed in the way applicants are asked to draft their applications and in the reluctance to admit third-parties into the pre-grant examination procedure.

Inventing and Claiming

All current patent systems require applicants to specify the nature of their invention as well as indicate the extent of its scope. This is done by so-called ‘claim-construction’ which must be included in all valid applications. American claiming prerequisites further express a commercial and individualized interpretation of the patent function: one that continues the Constitution’s implied message that patents spring from Congress’s power to “secure” the rights for commercial exploitation of inventions but leaves this initiative to the hands of proprietors and the validity of these rights to civil lawsuits and courts.

The United States has the oldest tradition of demanding that inventors demarcate their patent application through 'claims'. Already the 1790 and 1793 Patent Acts required written specifications that distinguished the invention from "other things before known". The 1870 Patent Act was the first step towards another American legal development, that of 'peripheral claiming' (Sarnoff 2007).

Peripheral claiming is distinguished from more traditional 'central claiming' in the following way: central claiming seeks to clearly specify the core of the invention whereas peripheral claiming tries to delimit its boundaries. A metaphorical proposal is to think of central claims as "sign posts" for the invention peripheral claims as "fence posts" (Burk and Lemley 2009). Central claiming is implicitly the guiding logic of copyright law (Fromer 2009) but all patent laws do incorporate aspects of it as well; in the American system, for instance through its 'doctrine of equivalents' which expands protection to patentees for functionally similar inventions (Kahrl 2001:68).

The move towards peripheral claiming in the United States was intended to stop applicants from shifting the scope of their inventions in situations of re-application (Sarnoff 2007) but, in consequence, peripheral claiming is also an implicit accentuation of the adversarial part of patents as assets in infringement suits since its intention is to demarcate legal rights. Central claiming, on the other hand is more in tune with the agenda to spread patented information to the public because it attempts to describe the core of the invention. A consequence of the American peripheral claiming style is the patents of American origin are the longest and contain the largest number of claims (Archontopoulos et al. 2006). This has been true for a long time: A comparative

investigation from the 1930s concluded that “The American system leads to prolixity. The same scope of protection for which 100 claims are necessary in the United States may be covered in Germany possibly by five to ten claims” (Vojáček 1936:36).

To understand this one needs to think about the dual character of the technical information in patent claims. On the one hand, claims have an informational value after published, which is why states award them in the first place. On the other hand, claims are a signal to competitors as well as courts during infringement suits what constitutes transgression. Inevitably, central claiming is ideologically affiliated with the former kind of information and peripheral with the latter.

Another adversarial aspect of the American system is the fact that the USPTO has not traditionally offered strong standards of post-grant opposition. These oppositions are carried out at the patent office and ensure the validity of patents before they are given legal force and hence diminish civil lawsuits between patentees and alleged infringers. Whereas the EPO post-grant opposition is an *ex partes* system which is conducted on approximately 8 percent of all awarded patents, the American *inter partes* re-examination procedure befalls only around 0.2 percent of USPTO patents (Hall et al. 2003).

In comparison to Europe, American reexaminations are shorter, they are not divorced from applicants’ own reexamination appeals, and they are not conducted by a panel of experts but most often by the same original examiner (Hall et al. 2003:16). Current legislation⁴¹ will strengthen the post-grant review process in the American system, but it is too early to ascertain its ramifications.

⁴¹ Leahy-Smith America Invents Act of 2011.

Possibly more by accident than design, the American system is creating a situation where patents are relatively easy to obtain but also more likely to be found void during ensuing lawsuits, at least relative to Europe. The incentive structure created by laxer standards and proclivities to award less than watertight patents is one that encourages all afflicted parties to view patents as an adversarial tool. Settlements or lawsuits will ultimately decide the validity of intellectual property, and not the patent office itself. In addition, the American system undercuts the diffusion of patent information by allowing for the recovery of treble damages in cases of willful infringement, something which discourages the reading of existing patents by competitors (Drahos 2010:145).

No Need to Work

Lastly, and importantly, American law is one of a very few countries which do not contain provisions that patentees exploit their patented inventions in the country in order to maintain protection.⁴² Although such requisitions of compulsory licenses and patent revocation are rarely enforced in any economically developed country (Grubb 1999:151), countries have retained this option on their law books.

The lack of working requirements in American patent law has been echoed in early court opinions which affirm a particularly adversarial understanding of patents:

⁴² In the drafting phase of the first American Patent Act of 1790, an option for forced licensing at a “a price beyond what may be judged an adequate compensation” passed the Senate but not the House and did not appear in the final law (Lubar 1991:935).

A Patent is not the grant of a right to make or use or sell. It does not, directly or indirectly, imply any such right. It grants only the right to exclude others.⁴³

This understanding was personified in Jerome Lemelson who, at his death in 1997, held the distinction of having the third highest number of patents for an individual in the United States but who never sold a single product himself. Lemelson made a fortune through licensing and lawsuits against infringers (Cussler and Moggridge 2001:117). The adversarial understanding of patents was most likely implied already in the second American Patent Act, from 1793, the second section of which expresses the restrictions on those not owning a patent to this effect.⁴⁴ The principle of granting the patentee full freedom in deciding how to benefit from a patent resonates well with American ‘inventor philosophy’ as well as with a general American distrust of governmental seizure of private property and interference with private matters (Whitman 2004).

Historically speaking, a working requirement was implied in all pre-modern patent laws which consisted of royal grants of monopolies or similar privileges to specific individuals to attract them to relocate to a kingdom or province (see chapter 7) – if the inventor did not practice his invention in his host kingdom, it was little point in privileging him. Current provisions for compulsory licenses or revocation are not embedded in principles of monarchical privilege but are reflections of a similar attitude that there are certain obligations to the public patentees need to meet in order to receive

⁴³ *Herman v. Youngstown Car Mfg. Co.*, 191 F. 579, 584-85, 112 CCA 185 (6th Cir. 1911).

⁴⁴ Patent Act of 1793, Sec. 2: “any person, who shall have discovered an improvement in the principle of any machine, or in the process of any composition of matter, which shall have been patented [...] he shall not be at liberty to make, use or vend the original discovery”.

support. Working requirements, regarded this way, are relics of a pre-modern practice which did not yet practically distinguish the inventor from his creation.

Although the American patent system, as any other, is vested in the idea of the benefit to the public accrued from private intellectual property,⁴⁵ United States patent law was never designed to guarantee its fulfillment. The only notable instance of a similar provision in American law was the system of granting patents on the mere importation of new products which were granted in the 19th century. This practice did not, however, stem from the normative foundation of compulsory licenses and current working requirement but from national opportunism from a period when the United States had still not outrun European nations in industrial output and innovation.

The absence of working requirements must therefore be seen as an expression of the classical free marked doctrine and the legal protection of patentees to execute their rights at the own complete discretion. This, in turn, is embedded within in a marked-expansionist framework of patent policy. An adversarial understanding of patents is therefore ingrained in the very ‘inventor philosophy’ America has rested on.

The European Logic

The fact that Europe is region comprising sovereign nation states, each with unique political histories and legal traditions, makes it harder to identify a coherent “European” logic. There are two justifications for still proceeding with such an attempt; one factual and one theoretical. Factually, the establishment of the European Patent

⁴⁵ The U.S. Constitution qualifies the congressional power to erect and regulate patent and copyright law by the fact that these “promote the Progress of Science and useful Arts” (Art. I, § 8, cl. 5);

Office (EPO) in 1973, to which the most technologically important European nations are now members, has created one uniform European patent system (which is also a main focus of this chapter). Theoretically, important European patent systems have operated in a manner systematically different to that of the United States, and the EPO emerged directly from these. In an ideal-type analysis, such as this, theoretical constructs are developed through comparison which permits discussions of abstract entities, such as types of systems, and although no actual system will entirely conform to an ideal-type, these heuristic devices will help illustrate the differences between those that are in existence.

The European patent systems, as expressed in the regional EPO, can broadly be traced to French initiative and a German legal model (as detailed in chapter 7). The EPO would never have been realized had it not been for a general European interest in overcoming procedural inefficiency and duplicate work with different national systems, but the first instigator for uniform laws and a regional office was France (Kranakis 2007). Although some key features of the European Patent Convention too are of French origin, as will be shown, the broad model is German (see chapter 5). Although the French model had distanced itself quite far from its first ‘inventor system’ it never developed into an ‘invention system’ such as that seen with the first patent law for unified Germany.

Signed in 1973, the European Patent Convention (EPC) became the compromise for patent policy amidst the concomitant development of the European Community. It is a compromise between regional cohesion and national sovereignty: on the one hand it does not mandate its replacement of national patent offices and all EPO patents have to be

enforced nationally after grant; on the other hand, it does assess applications on behalf of member countries and membership to the EPC is mandatory for European Union member states. Moreover, the EPO is, de facto, taking over a continuously increasing share of patent applications in Europe. Recent political development has also attested to the position of the EPO as the dominant force in staking out the course of patent policy in Europe and it is widely accepted that all major developments in European patent law will center on the EPO (Grubb 1999:25–28).

Due to the regional character of the EPC it can be considered the current constitutional document for European patent law, which is the approach of this study. Its first version has been subject to slight periodical revisions, mostly to list new members, to add protocol rules and to include references to important case law by the Enlarged Board of Appeals (EBA) which functions as a Supreme Court within the patent organization.⁴⁶

For these reasons it is therefore justified to let the EPC and EPO practices represent current ‘European’ patent ideology. The logic invested the EPC is also the most common foil for the American system in all political and academic discussions of international character.

⁴⁶ EBA decisions are only meant to be mandatory on underlying referrals, but they are considered influential in interpretations of Articles and Rules of the Convention, which cite relevant EBA decisions for each of its charters.

Exclusiveness

A certain degree of exclusivity is endemic to all modern patent systems due to their coexistence to other forms of intellectual property rights, such as copyright, trademarks, and even trade secrecy provisions: the same intellectual feature cannot receive protection from more than one intellectual property domain. The origin of modern patent laws are frequently traced to the British Statute of Monopolies from 1624 which mirrors a deeper legal commitment to exclusivity; namely, patents as an exception to a general ban on monopolies – that is, an exception to an exclusion.

Although patents are still regularly described as “monopolies” in European legal parlances, modern European exclusivity does not stem from such economic considerations.⁴⁷ Rather, European exclusivity is rooted in moral considerations which originated in French doctrine as well as eagerness to functionally demarcate patents from copyrights. The 1844 Patent Act of France rejected the patentability of pharmaceutical products, drugs, and financial techniques,⁴⁸ and it declared the invalidity of issued patents if they proved to be mere theoretical exercises or ran against public order and security.⁴⁹

⁴⁷ A notion which dates back at least to the late 19th century; the philosopher and then French minister of foreign affairs Jules Barthélemy-Saint Hilaire expressed the purpose of the proposed 1883 Paris Convention for the Protection of Industrial Property as a system which would ensure that patented inventions would no longer remain the “monopoly of one single country” (“*les découvertes utiles ne peuvent plus rester le monopole d’un seul pays*”) (Saturday November 20, 11th session of International Conference for the Protection of Industrial Property, Paris).

⁴⁸ 1844 Patent Act, Art. 3: Ne sont pas susceptibles d’être brevets, (1) es compositions pharmaceutiques ou remèdes de toute espèce, lesdits objets demeurant soumis aux lois et règlements spéciaux sur la matière, notamment au décret du 18 août 1810, relatif aux remèdes secrets ; (2) Les plans et combinaisons de crédit ou de finances.

⁴⁹ 1844 Patent Act, Art. 30: Si les brevets portent sur des principes, méthodes, systèmes, découvertes et conceptions théoriques ou purement scientifiques, dont on n’a pas indiqué les applications industrielles; i la découverte, invention ou application est reconnue contraire à l’ordre ou à la sûreté publique, aux bonnes mœurs ou aux lois du royaume, sans préjudice, dans ce cas, et dans celui du paragraphe précédent, des peines qui pourraient être encourues pour la fabrication ou le débit d’objets prohibés

The French origin of the latter is linguistically illustrated by the fact that both the so-called TRIPS⁵⁰ agreement from 1994 and the EPC⁵¹ have retained the French term “*ordre public*” to signify conditions for exclusion from patentability on moral grounds also in the English translations. It is interesting to note that a similar inclusion of moral considerations in copyright laws – also a French introduction – has had a less robust tradition in the United States (see, for instance Rushton 1998).

Although explicit in its stated exceptions, European patent law is vague in permitted material; again, a French principle of universal eligibility with some clearly stated prohibitions for certain industries. Whereas all patent systems impose restrictions on individual applications, entire trades are denied protection in Europe, and the moral soundness of inventions is explicitly specified as a condition. In the United States, where there is no requirement for “industrial application”, the doctrinal interpretation of the more generic requirement of “utility”⁵² holds that it excludes inventions which are “mischievous or immoral”.⁵³

In modern European patent law, exclusivity is listed in the two first articles of substantive patent law of the EPC:

Art. 52 [...]

(2) The following shall not be regarded as inventions [...]

- (a) discoveries, scientific theories and mathematical methods;
- (b) aesthetic creations;

⁵⁰ Agreement on Trade Related Aspects of Intellectual Property Rights, Art. 27 (2).

⁵¹ EPC, Art. 53(a).

⁵² Title 35, United States Code, Art. 101.

⁵³ Justice Story in *Lowell v. Lewis*, 1 Mason. 182; 1 Robb, Pat. Cas. 131. Circuit Court, D. Massachusetts, 1817.

- (c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;
 - (d) presentations of information.
- (4) Methods for treatment of the human or animal body by surgery or therapy and diagnostic methods practices on the human or animal body shall not be regarded as inventions which are susceptible of industrial application[.]

Art. 53.

European patent shall not be granted in respect of

- (a) inventions the publication or exploitation of which would be contrary to “ordre public” or morality[.]

The EPO guidelines⁵⁴ give a letter bomb as an example for an invention which would be deemed unpatentable under Art. 53. It should be noted that the letter bomb example is homologous to the American doctrine for the ‘utility’ requirement which would bar the patenting of “a new invention to poison people, or to [...] facilitate private assassination”.⁵⁵ However, the morality is introduced to European patent law as a categorical rejection of a certain class of inventions under a separate article unlike American law which precludes individual applications on a casuistic basis.

The subject matter excluded from patentability under EPC Art 52 was, together with provisions for the protection of “ordre public” adopted, almost ad verbum, from French patent law which – just prior to the ratification of the EPC – had excluded (a) theoretical and scientific principles (b) ornamental designs (c) financial and accounting methods (d) game rules (e) abstract systems, such as programs and series of instructions for operating a computer (i.e. the *software*) and (f) inventions contrary to law or good morals (Lecca 1969).

⁵⁴ Guidelines C IV 3.1.

⁵⁵ Justice Story, in *Lowell v. Lewis*, 1 Mason. 182; 1 Robb, Pat. Cas

With the exception of the last two (*e*, and *f*, respectively), all exclusions stemmed from attempts to demarcate the domain of patentable ideas from that of copyright and scientific theory; something which had a long history in European patent practice and policy. The new exclusion of software, on the other hand, was partially motivated by the practical concern that patent examiners were not qualified to assess computer-related products (Grubb 1999:267) and that such inventions would be more appropriately protected by copyright law in any case (Bently and Sherman 2004:394).

With the exclusion in place, applicants for software-related inventions have had a harder time pursuing patent protection in Europe than in the United States, however much the EPO has tried to accommodate them by circumventing the restrictions set out in the EPC. Whereas the applicant has to pass the American ‘utility’ requirement, which means that software inventions have to pass a fairly easy test of “practical utility” in Europe the same invention has to reveal a “technical effect” (Plotkin 2005).

As a result, software applicants have to come up with ways to move around the requirements to receive a patent. This is possible since the EPO has decided that if an application contains both patentable and non-patentable subject matter the invention in its entirety can be patented in the so-called ‘whole contents approach’ (Bently and Sherman 2004:396). The fact that the guidelines to the EPO do not define what constitutes “technical” has contributed to opening routes of evasion to software patents in Europe⁵⁶ but has not altered their legal status as essentially denied.

⁵⁶ For instance, by accepting that a method for displaying an error message on a computer screen constituted a technical effect (decision in T 115/85, *IBM/Computer related invention*).

In any case, the American legal climate for software inventions is much more accommodative than in Europe. Following American court decisions upholding the validity of software patents, the USPTO issued new guidelines in 1996 which, among other things, have enable discs and CD-ROMs carrying a computer program to be patented as ‘articles of manufacture’ (Grubb 1999:68).

Whereas the American ‘utility’ requirement is vague, the European counterpart of ‘industrial applicability’ is specific and restrictive. There is another contrast which too illustrates European restrictiveness: As stated, the American ‘utility’ requirement is intended to eradicate potentially harmful inventions from patentability since those inventions cannot be said to be “useful”. The EPC, on the other hand, has explicit provisions to prevent “inventions the publication or exploitation of which would be contrary to ‘ordre public’ or morality”.⁵⁷ Although the outcome for an application on a contested invention would often be identical at both offices, the European approach is different in that it argues categorically against certain classes of inventions and does not limit itself to individual characteristics of applications.

European exclusiveness is therefore found in three interlinked components: a negative definition of patentability; a requirement of industrial applicability; and a separate clause eliminating patents that are deemed contrary to the public morality. None of these are directly recognized separately or categorically in American statute.

The attribution of this exclusivity to the ideal-type of an ‘invention system’ is warranted by the fact that this form of approaching inventiveness is founded on

⁵⁷ European Patent Convention, Art. 53(a).

considerations of the characteristics of industries and technical fields. Exclusiveness, as such, is not motivated by concerns for either applicants or technological progress. Rather, it mirrors an interest in defining what constitutes *invention* – or, rather, what does *not* constitute it – as well as a desire to protect jurisdictions of different legal domains; in most cases, patents from copyrights. The demarcations of legal territories has a tradition in the general legal philosophy of the Civil Code regimes of Continental Europe which, particularly in French Law and its derivatives, have stressed the importance of horizontal coherence with different statutes being non-overlapping and exhaustive; this in contrast to cumulative and gradually evolving Common Law principles through court decisions (Merryman 1985).

Focus on Information

Since the purpose of an ‘invention system’ is to work as a catalyst for the dissemination of technical information, it is not preoccupied with characteristics of inventors and makes everything it can to terminate the lives of patents early. Invention-oriented debates concerning patent law reform will not, for instance, raise the issue of “small businesses being hurt”, or similar, as always befalls political discourse of in America.⁵⁸

Since it is uninterested in inventor characteristics, the ‘invention system’ is only concerned with the procedural status of applications and, consequently, does not care for

⁵⁸ Under the recent debates of the 2011 America Invents Act the rights of “small businesses” and “private inventors” were consistently raised, both by supporters and those opposing the bill; something which illustrates the enduring rhetorical power of such discourse in the American political climate.

the identity of the inventor. As such systems have no interest in philosophical discussion as to individual ingenuity and inventive contribution they are happy awarding patents to secondary inventors (provided novelty has not been ruined by prior use) or to companies or other corporate bodies.

Due to its procedural expediency and legal transparency, the invention-oriented practice of awarding patents on to applicants on the basis of their application date, known as ‘first-to-file’, has been spread to virtually all patent systems of the world. Not only are all European national patent systems as well as the EPO among these; the first-to-file principle originated in the model law of the EPC and the strongest expression of invention philosophy to date: that found in the first German patent code. The German law of 1877 did not mention the inventor by a single word in its provision for general patent eligibility – or anywhere else in the document, for that matter:

Patents are bestowed for new inventions that permit commercial exploitation⁵⁹

As the historical exposition in chapter 7 explains, the German patent code was later amended to protect inventors’ rights with important changes which have later been included in the EPC. It has been alleged that from the Weimar period onwards, and decidedly with passing the Act on Employee Inventions of 1957, Germany has, in practice, protected the salaried inventor better than most other countries, including the

⁵⁹ *Patentgesetz*, May 25 1877 Art I: *Patente werden ertheilt für neue Erfindungen, welche eine gewerbliche Verwerthung gestatten*

United States (Gispén 2002:24). However, this is not a matter of German patent law but of German employment protection laws.

The same is the situation for the EPC, which does not occupy itself much with inventors, save for the rights of inventors to “be mentioned”⁶⁰ (though with the express provision that the EPO will not take any measures to validate the identity of the ‘true inventor’)⁶¹ and a provision specifying that employee rights are set in accordance to laws in the country in which the employee is mainly employed.⁶² Naturally, there is a fundamental difference between having exclusive right to a patent and having a right to be mentioned in one, even though it refers to the same relationship between person and creation.

The current EPO practice, which is more-or-less identical to most national laws of its member countries, is to recognize the inventor’s right to a patent⁶³ but to specify that

For the purposes of proceedings before the European Patent Office, the applicant shall be deemed to be entitled to exercise the rights to the European patent.⁶⁴

⁶⁰ Art. 62. Apart from the patent document itself, the EPC Art. 81 demands that the application itself designate the inventor or inventors.

⁶¹ R 17(2)

⁶² Art. 60(1).

⁶³ Art. 60(1) does state that the right to a European patent belongs to the inventor or his successor in title, but as this is a matter of national legislation it is a moot point. Also, the same article explains that if two or more persons have made an invention independently of each other, patent rights go to the one with the earliest filing date which, in effect, gives all rights to first filer since there is no additional protection for the later filer if s/he had made the invention slightly before. The, in practice, empty words of the concomitant inventors clause were first written into the 1936 German patent code which had sought to ameliorate rampant exploitation of salaried inventors in that country.

⁶⁴ Art. 60(3).

The fact that the first-to-file practice has been adopted by virtually all patent systems must be attributed to the procedural efficiency it provides: there is no need to investigate complicated issues of ‘true’ originators or investigate dates of “eureka”-moments. The filing date is easily stored and retrieved and hence speeds up some parts of the examination phase. Insofar as there is any philosophical justification for awarding the first applicant to file over other inventors it must be sought in a desire to reward the inventor who most readily facilitated the diffusion of information through his or her application.

This was not the motivation for the German creation of the first-to-file system which was rather a result of strong company lobby in a political climate which nearly jettisoned the practice of patenting entirely (Gispén 2002:25–34, see also, generally, chapter 7 below); nor did the drafters of the EPC look far beyond the procedural expediency of the first-to-file when adopting it. Still, rewarding patents to first filers implicitly recognizes swiftness of informational diffusion over individual ingenuity and is, hence, in keeping with an ‘invention system’'s fundamental philosophy. In any case, it could hardly have developed in an environment which clung to Enlightenment ideals of individual desert.

There is another aspect of European law which highlights its commitment to diffusion of information. The American ‘non-obviousness’ requirement is, at the EPO, called ‘inventive step’. Both requirements mandate that there must be a significant departure from the prior art in order to make an invention eligible for patent protection. However, the two systems approach the matter differently which, comparatively

speaking, makes it possible to identify the European logic as one that focuses more on the informational value of patents than on the idea.

In deciding whether or not an inventive step is in place, European patent examiners most commonly resort to the so-called ‘problem and solution’ approach.⁶⁵ Plainly, this procedure consists in an identification of a problem in the prior art an average person skilled in this art would agree on consists in a ‘problem’. Next, the examiner has to decide if the invention solves this problem and if it is likely that an average person skilled in the art would have thought of it.

It sounds similar to the American so-called ‘Graham factors’ relied on by American courts to determine non-obviousness,⁶⁶ but the ‘problem-solution’ approach is slightly different for the following reasons: the intention is not so much to decide whether or not the applicant is worthy of protection but if the field as a whole would benefit from the information contained in the patent

Rather, the problem-solution approach tries explicitly to define eligibility according to an ‘problem’ others would have appreciated being solved. According to this assessment a patent will be awarded if the competitors will benefit from the publication of the information in the application. This is, therefore, an approach that views patents objectively more than a subjective commercial tool.

⁶⁵ EPC Rule 27(1)(c) states that the invention is to be disclosed in such a way that the technical problem the invention solves can be understood. Various boards of appeal at the EPO have affirmed this approach to inventive step; for instance T 1/80, *BAYER/ Carbonless copying paper* and T 24/81, *BASF/Metal refining*.

⁶⁶ Established by the U.S. Supreme Court in *Graham v. John Deere Co.*, the ‘Graham-factors’ include “secondary considerations” for courts in deciding non-obviousness, such as “commercial success” and “failure of others [to come up with the invention]”.

Further, patent applications in Europe themselves are published prior a decision from the examiners have been reached (no later than 18 months after filing)⁶⁷. This too facilitates the spread of the information contained in the application. Taken together, the problem-solution approach as well as the first-to-file system illustrates that the EPO places greater emphasis on the informational value than on individual inventorship.

Ironically, the attachment to informational concerns of patenting of the European system has had the effect of increasing the realm of patentability in two very important decisions of the Enlarged Board of Appeals of the EPO – both involving chemical substances which would both traditionally, in all likelihood, have been denied a patent for lack of novelty since the inventions consisted in new properties of a known compound which were obtained by using the compound in a traditional way.⁶⁸ In other words, the patented inventions were simply discoveries of new virtues of known substances (see discussion in Grubb 1999:209).

The appeal board's rationale for permitting such 'new uses' patents was that this beneficial information would not be distributed to the public save for a patent on them. We could therefore say that the European commitment to the overarching political goal of patenting of dissemination of information has restricted the force of the most fundamental requirement of modern patent law, that of novelty. If anything, this paradoxical development only further supports the strong fixation of Europe's informational-approach to patenting.

⁶⁷ EPC, Art. 93.

⁶⁸ In one case, the contested patent the invention was that a substance previously known as a plant growth regulator was also a fungicide (G 6/88, *BAYER/Plant growth regulating agent*); in the other, a substance known as a motor oil additive to inhibit rust also acted to lubricate (G 2/88, *MOBIL OIL III/Friction reducing additive*).

Diffusion of Knowledge

Several interlinked aspect of European patent law puts it in a diffusion framework, all of which enhance the emphasis on the informational aspect of patents in ‘invention systems’. Concretely, diffusion is facilitated by requirements on the application document which mark a particularly European understanding that there must be ‘unity’ in the invention patented, which is reflected in the characteristic European demands on the way a patent application is drafted and described. Also, the European system is less inclined to confer the issue of patent validity to applicants and bestow this role to the patent office. Whereas United States laws of originality reveals elaborate ideas as to what constitutes the act of inventing – and thus emphasizes the inventor – European standards for ‘unity of invention’ signals a philosophical attachment to the invention itself.

First of all, EPO practice in enforcing unity of invention has lead to particular requisites for claim construction; that is to say, applicants are more restricted in their claim construction in Europe than in the United States. For instance, the EPO⁶⁹ usually only allows one independent claim per category of invention. Although additional ‘dependent claims’ are allowed, they must all be lodged in one overarching claim which is ‘independent’ and on which possible infringement will be judged. The nature of the invention is expected to be expressed through this independent claim.⁷⁰ Moreover, the

⁶⁹ Under EPC rule 29(2).

⁷⁰ “If it is decided that an independent claim defines a patentable invention [...] it must be possible to derive a technical problem from the application” (Rule 42(1)(c)).

EPO allows for more than one invention to be present in an application provided that they are linked together by one single inventive concept.⁷¹ If so, it is this inventive concept which, in its entirety, has to pass the objective criteria for patentability.⁷² Decisions by appeal boards at the EPO has affirmed that the European ‘unity of invention’ approach should also be interpreted to mean that products and processes should not be divorced if they can be seen to form part of one single concept.⁷³

The official EPO guidelines for examiners is to decide if an invention has been sufficiently described “on the basis of the application as a whole, including the description, claims and drawing, if any.”⁷⁴ The centrality of the independent claims to EPO applications marks a contrast to the practice of ‘peripheral claiming’ which has become the norm in the United States (see discussion above).

Although the difference is not always stark in practice, Europe has maintained essential features of the old ‘central claiming’ system. Central claiming is characterized by a demand that the applicant describes the invention at its core, in its essential contribution over and above what is already known. The peripheral claiming practiced in the United States, on the other hand, seeks to describe the legal dominion of a patent; or, what constitutes infringement of the patented invention. Broadly speaking, central claiming expresses the informational commitment of patenting whereas peripheral claiming makes the legal status of the patent asset better available for patentees and

⁷¹ EPC Art. 82; Rule 64.

⁷² Moves towards examination based on ‘inventive concept’ had been discussed in the United States, but has, as of yet, not been materialized (see Kunin 2003).

⁷³ Important guiding decisions are T931/95, T641/00 and T258/03.

⁷⁴ Guidelines for Examination in the European Patent Office, Part c – Chapter II-2.

competitors. By implication of the way claims construction is specified by the EPO⁷⁵, “[t]he German style of claim drafting is favoured” (Grubb 1999:311).

It should be noted that European allowance for several inventions in one application filed as a single ‘inventive idea’, as well as admittance of embedded claims reduces potential revenue for the patent office as more applications and independent claims increase applicant fees. The fact that these options exist therefore reveals that European ‘invention philosophy’ is disinclined toward commercial opportunism.

The claiming demand imposed on applicants by the EPO, as stated in the EPC,⁷⁶ is described as a compromise two extremes. The rationale in is found in the Protocol on the Interpretation of Article 69.

Article 69 [EPC] should not be interpreted as meaning that the extent of the protection conferred by a European patent is to be understood as that defined by the strict, literal meaning of the wording used [...] Nor should it be taken to mean that the claims serve only as a guideline [...] it is to be interpreted as defining *a position between these extremes* which combines *a fair protection for the patent proprietor with a reasonable degree of legal certainty for third parties.*⁷⁷

Combined, the attempt is to increase the validity of patents to the point where infringement is possible to detect on part of third parties without reducing the legal power of patents to a strict and literal reading of claims.

Another important point about the validity concerns imbued in EPO procedures has to do with the fact that this office opens up for extensive opposition reviews if a

⁷⁵ EPC, Rule 29(1).

⁷⁶ European Patent Convention, Art. 69; Art. 84; Rule 43.

⁷⁷ Protocol on the Interpretation of Article 69 EPC, of 5 October 1973, as revised by the Act revising the EPC of 29 November 2000. [emphasis added]

complaint is filed within 9 months after a patent has been awarded. Strictly speaking, the opposition proceeding at the EPO is more like revocation proceedings in that they take place after the patent has been granted; however, the effect is the same since it is carried out by the patent office itself, and not by a court. Not only is the review more thorough, but it consists of a greater panel than the reexamination procedure at the USPTO.

More importantly, EPO post-grant opposition procedures is explicitly anti-adversarial in that it gives the patent office the ability to ruin the grounds for out-of-court settlement once an opposition has been filed. Even if an opposition is withdrawn, the EPO stands free to pursue the case on its own (Hall et al. 2003:10). This too illustrates the attempt of the EPO to function as a patent office that validates patents in addition to granting them. Attempts to prevent the adversarial function of patents are mirrored in this peculiar post-grant opposition procedure.

Summary

No single law reveals the fundamental logic of either the American or the European system, but the relationships between laws give unique insights into the philosophical underpinnings of each system when considered holistically and comparatively. Although the systems are functionally quite similar and both often routinely award patents for the same inventions, the preceding elaboration has illustrated the following difference between the American and European patent systems:

American patents are awarded with view to the potential commercial success of inventions. Virtually no area of technology is excluded from patentability and the system

is eager to include new industries as they appear. This system is also based on a strong recognition of the adversarial character of patents and therefore leaves it more up to applicants themselves to test the validity of their intellectual property through costly lawsuits by issuing patents readily and cheaply.

This contrasts with the European logic which focuses on the informational value of patents to the public. This system strictly refuses patent protection for certain industries and is careful to maintain the boundaries between science, art, and technology. To accomplish these goals, the patent office itself tries to guarantee the validity of the patents it issues at the same time as it makes patent protection costly and thus effectively limits patent life.

Leaving Reality

The comparison of American and European patent systems above has proceeded inductively to give a picture of two different ways to approach patenting and the abstract concepts of 'inventor system' and 'invention system' were derived from the investigation. Although not entirely realized by either of the two systems, it was shown how each approximates a different logic.

A final deductive part will conclude this section which, based on details from actual patent systems, will present the two ideal types in pure abstraction. In one sense the abstract exposition will consist in an exaggeration of the American and European approaches to patenting, something which serves to clarify the empirical material given above. However, there is a certain deductive reasoning involved in the presentation

because it springs from a heuristic interpretation of both patent systems which provided a guide toward the articulation of both ideal types. From this inductive endeavor, the concepts will be turned back on reality, but this time not on any existing patent system but on those which *would have* existed had they ever been fully realized.

Product or Process

An additional corollary must be established before the two ideal types can be fully articulated; one that only is of secondary importance to actual patent systems and which is more based on logic than historical reality. The difference between patents on processes and patents on products, as well as their relationship to ‘inventor’- and ‘invention systems’ must be explained.

A new technical creation can be either a product or a process, and all operating patent systems of the world today offer protection of both. Still, in an investigation of ideal type, such as this, it should be highlighted that the American patent system has a tradition of favoring product protection over process protection. This, in fact, further illustrates its charge of market expansion. Theoretically speaking, the disclosure of a process can benefit a wide ranger of industries in that an innovative method can be utilized for different production purposes. A product, on the other hand, consists of a specific embodiment of an idea.

The essential difference between patent and copyright protection has frequently been explained as patents, on the one hand, protecting *ideas* and copyright, on the other, covering *expressions* (for instance Vaidhyathan 2003:18). Protection of ideas is

broader than protection of expressions since the latter consists of particular substantiations whereas processes can see many implementations. A system dedicated to informational diffusion through patents is likely to favor process protection to inventions on a highly selective or restrictive basis. Market expansion, on the other hand, is pursued best by liberal distribution of narrower product protection rights; which, in effect, amounts to an increase in net non-overlapping property rights in accordance with the ‘Coase-theorem’ favored by neo-classical economics.

Historically, the system which was most strongly characteristic of a pure ‘informational diffusion’ system was the earliest confederate German. Not only did the first German system clearly demarcate between patents and copyrights,⁷⁸ but patenting practice in pre-Weimar Germany strongly disfavored product inventions (see Gispén 2002:80–81). For certain industries, notably chemistry, Germany and other European countries did previously not permit product protection at all – a restriction Switzerland did not remove until 1968 (Grubb 1999:23).

Patented products provide an impetus for the marketing and leasing of inventions to consumer sales whereas processes are typically utilized during industrial production. A part of American “democratization of invention” (Khan 2009) has been a general reluctance to let patent law impose restrictions on sales markets. Although American process patents have always existed, it was until 1989 permitted to use or sell the product

⁷⁸ Article 4 of the 1867 Constitution of the North German Confederation, which would later be implemented for the entire *Reich*, distinguished between copyrights as “intellectual property” (*Schutz des geistigen Eigentums*) and “patents” (*Erfindungspatente*). Article I of the U.S. Constitution does not impose a similar conceptual division with its compendious provision that Congress shall have the power to “by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”

directly derived from a patented process (Grubb 1999:160) in contrast to the situation in Europe. Such product-by-process protection is now, however, a requirement of the TRIPS agreement.

Although never realized – or even realistic – a consistent market expansion system should therefore be seen as one that favors product patents over process patents, practices liberal patenting and puts the burden of patent validity on patentees. A diffusion oriented system, on the other hand, would ideally be characterized by strict requirements for process patents only, the validity of which would be entirely up to the patent office through extensive examinations. Moreover, patentee rights would be a national as opposed to civil matter. Although a rarity now, infringers of German patents until the Weimar Republic could be sentenced to prison, and even today, possible infringement may qualify for a patentee to obtain a police search of the alleged infringer's premises in Switzerland (Grubb 1999:155). Such handling of patent matters by criminal law has never been practiced in the United States.

Inventors Alone

A pure 'inventor system' is firmly attached to the idea of individual desert and does everything it can to make intellectual property resemble other forms of possession. By offering patents it seeks to make ideas rivalrous and selective, and allows patentees to do whatever they wish with their property. Although the system justifies patents partially with reference to increases in social wealth that are expected to stem from such protection this is only part of the rationale and, in any case, no different from the argument that

private ownership in general contributes to wealth maximization by offering incentives for private investment. An ‘inventor system’ does not, therefore, use the term “monopoly” to designate patents due to the profane connotations this word gives in a culture which cherishes the free market and personal property.

Although patentees are free to do whatever they wish with their property – including licensing away to companies by private contracts – only the first and true originator of an idea are allowed to obtain a patent document. Besides a strict requirement for individual eligibility, the patent office is not discriminatory on the type of industry to which an invention belongs, and is happy to issue patents for practically anything. In practice, though, product patents are favored over process patents as the latter are seen as impediments to free competition in the marketplace: a patented process can impose restrictions on numerous independent trades and is therefore viewed with suspicion. With its commitment to individual desert, process patents are allowed, but mostly in actual embodiments.

In any case, the patent office is not preoccupied with characteristics of the application at all and relegates validity concerns to patentees and – through the actions of them and their competitors – to courts. In fact, the patent office regards itself more as a specialized registration office than one that assesses the information it receives. It tries to get assurance that patentees are the first and true inventors, and guides applicants in their descriptions of their inventions. These descriptions are expected to clearly delimit the boundaries of their inventions which will make it easier for competitors to notice other people’s property and for patentees to affirm their rights.

Politically, the institution itself is given legitimacy from the fact that commercial costs are privatized, from the fact that markets are allowed to expand, and that competition will serve to increase public welfare. It is not, however, seen as the job of the government to decide what patentees will do with their inventions or remove their rights once issued. Consequently, there are no working requirements, no grounds for compulsory licensing, and patents are automatically granted for the full statutory term once granted, without the need of applicants to pay renewal fees or specify the utility of their inventions; the question of utility is as private as the patent property.

As far as the general public and political debates about the patent system goes, the most effective arguments raised during periods of reform of the ‘inventor system’ is that proposed changes will hamper innovation by offering unclear and broad rights, by making patent procurement expensive, or that small businesses will lose against large bureaucratic companies with specialized patenting departments.

Strictly Invention

The identity of the inventor as well as his or her mental and practical investments is of no concern in the pure ‘invention system’: characteristics of the invention alone count. Hence, patents can be issued to a person who did not personally make the invention, to several individuals jointly, as well as to companies. This is not an indication of a negligent system or one of nepotism, but stems from a philosophy which justifies patent ‘monopolies’ – the official word used – solely on the grounds that patent documents constitute an official publication of trade secrets. Although the public benefits

ultimately serves to give legitimacy to the ‘inventor system’ too, the focus is here not on incentives to innovate and engage in commercial competition but to disclose and publicize.

As the information is only technically public as long as the patent monopoly is in force, the patent office does everything it can to shorten their length and to speed up publication. The latter is done by publishing the patent applications automatically upon receiving them, both to make the ideas known and to invite opposition from third parties which can aid the patent office in declining applicants. Moreover, patentees must pay high entrance fees and cumulative renewal fees, all to discourage them from maintaining their privileges.

Applicants must pass strict requirements to be granted a patent monopoly and many industries are categorically refused. Individual rejections can also be based on the grounds that the invention is not technical enough, not morally sound, or likely to hinder other social activities, such as scientific research. Although some product patents are allowed – since some inventions consist exclusively of particular embodiments – the general principle is to only allow for process patents because such more general inventions have a potentially larger audience of future users. The key concern of the patent office is that applicants describe their inventions clearly enough for competitors to benefit from the information in the patent document.

Although applicants will encounter great resistance from the patent office, once granted, their patents are very forceful tools as they have been thoroughly validated by the patent office; they will almost certainly never be found void. They can therefore

safely trust that their rights will be protected from infringers who are, in fact, prosecuted as criminals by the police and judiciary. In return, the patentees may be subject to further limitations, or even withdrawal, of their rights through compulsory licenses and revocation on the grounds that the invention has not been exploited.

Because inherently suspicious of the privileges it issues, the patent office wants to maintain complete control over the conditions for patents as well as their life span. The system's legitimacy is a conditional approval of monopolies provided this is the only form through which certain types of information get circulated. One could even call it a disincentive structure; it serves to make secrecy less appealing to technological investors. Whether or not intellectual property stimulates inventive activity is not addressed at all by the invention system which sees its role as beginning after inventions are made.

Table 1: PATENT PHILOSOPHIES

	‘Inventor Philosophy’ (American)	‘Invention Philosophy’ (European)
Aim	Market expansion	Diffusion of knowledge
Technique	Incentive to innovate	Incentive to disclose
Characteristics	<ul style="list-style-type: none"> - Technological inclusiveness - Focus on idea - Protects adversarial character of patents 	<ul style="list-style-type: none"> - Technological exclusiveness - Focus on information - Protects validity of patents

CHAPTER 6 – AMERICAN HISTORY: ‘INVENTOR PHILOSOPHY’

First Creation

The American Constitution is, so far as I can see, the most wonderful work ever struck off by the brain and purpose of man
– William Gladstone, British Prime Minister

When Thomas Jefferson, the “author of America” (Hitchens 2009), drafted the Declaration of Independence in 1776 he took good care to omit any reference to political details which would paint the resistance of the colonies in a hue of opportunism. Although he knew full well that a Parliament had been supreme in England since 1689 he therefore exclusively focused his charges on the tyrannical nature of the King and not the actual political situation of the imperializing adversary (Greer 1968:388).

Not only was an attack on alleged British despotism better suited to muster support from other European allies for the American Revolution, it was grounded on the solid philosophical foundations of liberalism in vogue among intellectuals at the time: “We hold these truths to be self-evident, that all men are created equal”. Thus, a rebellion which included opportunistic as well as lofty aspirations was lodged in a rigorous idea of the greater cause of progress and democracy. The fight was not only against the absurdity, identified by Thomas Paine (1894:92), of a “continent to be perpetually governed by an island”, but also against all the feudal vestiges of European monarchial systems of governance.

But, as any of the Founding Fathers would have had to admit – to quote the first French Constitution – “the King has letters patent”. Where these privileges, granted at the Crown’s discretion, to be abolished along with the institution from which they were

issued? – Far from it. In fact, not only was a system for patents and copyrights enshrined in the American Constitution itself, the adoption passed without debate in the Constitution Convention on September 5, 1787 (Donner 1992:361):

The Congress shall have Power ... To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.⁷⁹

The resemblance of the wording of the Constitution to David Hume's (Hume 1826 [1742], Essay XIV) discourse "Of the Rise and Progress of the Arts and Sciences" might be accidental, and even somewhat superficial; still, it betrays a general affinity between the political liberalism of the Scottish Enlightenment and the founding document of the liberated colonies. Both the individualism and technical inclusiveness – characteristic of an 'inventor system' (see chapter 5) – were, hence, present already from the establishment of the first American patent system: the general term "discoveries" was used to identify patentability and "authors" and "inventors" were explicitly designated as entitled owners of this "exclusive Right".

Patent attorney and legal historian Edward G. Walterscheid (2001:766) calls the intellectual property provision of the U.S. Constitution "a most unusual clause" of the Constitution for several reasons. Firstly, it was uncommon for clauses to pass the convention without opposition from at least some of the delegates. Secondly, it was proposed very late and had a surprising arrival as no similar provision had been included in any of the early proposals for congressional authority presented to the federal

⁷⁹ U.S. Constitution, Section 8.

convention. Finally, the “intellectual property clause” is unique among the enumerated powers granted to Congress in setting forth a specific mode of the exercise of the power (“by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries”).

Although there is some evidence that the provision for patents, if not for copyrights, should be credited to Charles Cotesworth Pinckney of South Carolina (see Fenning 1929:441), it is most conventionally attributed to James Madison who, in other writings, had mentioned how both patents and copyrights constitute a curious branch of rights where the interests of “the few” must be protected from the interests of “the many”.⁸⁰

The lack of opposition in the Convention is, at least in part, undoubtedly a reflection of the fact that several States did already issue patents; or, rather, ‘privileges’, prior to the Constitution and the first patent act. These were similar to European grants at the time in that they took the form of individual legislative enactments for each separate application to the state legislature, though they differed from royal privileges in that they had a democratic basis in state assemblies.

Most of the early State charters were similar to the British *Statute of Monopolies* from 1624 and replicated its characteristic permission for intellectual property rights as an *exception to an exclusion* (that prohibiting monopolies, see chapter 7 for more detail).

⁸⁰ “With regard to monopolies they are justly classed among the greatest nuisances in Government. But it is clear that as encouragements to literary works and ingenious discoveries, they are not too valuable to be wholly renounced? [...] Where the power is in the few it is natural for them to sacrifice the many to their own partialities and corruptions. Where the power, as with us, is in the many not in the few, the danger can not be very great that the few will be thus favored. It is much more to be dreaded that the few will be unnecessarily sacrificed to the many.” – James Madison to Thomas Jefferson, October 17, 1788.

That is, not as a declaration of a *positive* right to intellectual property, as the articulation in the Constitution would eventually express.

In 1641, the General Court of Massachusetts had approved a “Body of Liberties” which included the following provisions: “No monopolies shall be granted or allowed amongst us, but of such new Inventions that are profitable to the Country, and that for a short time” (Whitmore 1889). In Connecticut, a state law was passed which ordered that “there shall be no monopolies granted or allowed amongst us, but of such new Inventions as shall be judged profitable for the Country, and that for such time as the General Court shall judge meet” (Ludlow and Brinley 1865).

The first law with a positive ring was seen in South Carolina’s Act of March 26, 1784 which, in addition to providing copyright protection of books, stated: “The inventors of useful machines shall have a like exclusive privilege of making or vending their machines for the like term of fourteen years, under the same privileges and restrictions hereby granted to , and imposed on, the authors of books” (Fenning 1929:444). The fact that this was the law of the state Pinckney represented at the time has been the reason for speculation as to his role in drafting the “intellectual property clause” of the Constitution.

Although all states but Delaware had passed copyright laws, the real interest was in patents due to the heavier economic reliance on agriculture and industry, as opposed to aesthetic work, in the United States at the time (Ochoa and Rose 2002:920). Whether the lack of opposition to the intellectual property clause of the constitution should be

attributed to this or to an endorsement of its individualist principles is uncertain; some have even suggested the less idealistic explanation that

[a]lmost no one cared about the clause either at the Constitutional Convention or during the ratification controversy. Those advocating ratification and those opposed to it could not have been more apathetic than they were about the clause.

(Levy 2000:124)

In the absence of opposition, of all the commentary in the *Federalist Papers*, the one concerning the intellectual property clause belongs to the shortest. It simply affirms that the “utility of this [congressional] power [to create a patent system] will scarcely be questioned.”⁸¹ Apparently, it was not.

The motivation for highlighting the societal benefit more than individual merit is said to have been to avoid the nepotism on which legal predecessors in Europe, in addition to expanding markets through inter-state legal harmonization (Amar 2005:108, 112). The latter is highly important in showing how the general aim of market-expansion – another trait of the ‘inventor philosophy’ (see chapter 6) – was present in the American system from its inception. The entire section in which the patent provision is vested numerates the powers of Congress.

⁸¹ James Madison, “Federalist #43”. This in spite of the fact that the *Federalist Papers* do mention the injurious side-effects of monopolies, for instance by Alexander Hamilton (“Federalist #35) discussing the effects of selective taxation: “Exorbitant duties on imported articles would beget a general spirit of smuggling; which is always prejudicial to the fair trader, and eventually to the revenue itself: they tend to render other classes of the community tributary, in an improper degree, to the manufacturing classes, to whom they give a premature monopoly of the markets; they sometimes force industry out of its more natural channels into others in which it flows with less advantage; and in the last place, they oppress the merchant, who is often obliged to pay them himself without any retribution from the consumer.”

In keeping with the unified and expansive vision presented in the *Federalist* No. 2, key congressional powers included establishment of common defense, uniform laws for bankruptcy, weights and measures, in addition to patents and copyrights. Federal patent law should therefore also be seen as a response to a perceived need for inter-state harmonization on certain key legal elements.

But international political aspirations of a fledgling nation cannot be disregarded. Three months before he signed the first American patent act on April 10, 1790⁸², President Washington had expressed his motivation for such a system in his State of the Union Address:

...but I can not forbear intimating to you the expediency of giving effectual encouragement as well as to the introduction of new and useful inventions from abroad as to the exertions of skill and genius in producing them at home...⁸³

If the drafting went without controversy, the ratification did encounter some opposition. The critics of the intellectual property clause invariably referred to it as a provision for state guaranteed “monopolies” (see Ochoa and Rose 2002:927–28). Many commentators, such as Thomas Jefferson, also spoke of patents and copyrights as “limited monopolies” and would later refer to them as a national “embarrassment” (Walterscheid 2001:769–70).

Without a strong natural law tradition in the American context, the objective of apologists was not to convey the force of “property” as an inalienable and personal right,

⁸² *An Act to promote the progress of Useful Arts*, April 10, 1790.

⁸³ January 8, 1790.

but to linguistically distance patents from the concept of monopoly. One notable commentator, for instance, advanced the term “public patronage” (Fessenden 1822:xxv) which saw little lasting use. The verbal success was eventually not found in baptisms but in linguistic qualifiers: something added to the term “monopoly”. For instance, in an open letter to delegate Nathaniel Lawrence to the New York ratifying Convention a citizen wrote:

I have just been reading Smith *on the Wealth of Nations* & he has taught me to look with an unfavorable eye on monopolies – But a *monopoly of the mental kind* I take to be laudable & an exception to the Rule.⁸⁴

After all, the Constitution itself had launched a pragmatic defense of patents by its stress on the “limited times” for which protection should be granted to inventors; during debates in the French Revolutionary Assembly at the time – as well as later – it would often be argued for life-time patents, and even the right to inherit them as any other estate, as the only logical consequence of natural rights philosophy. None of the Founding Fathers ventured into such questions, and some of their success must be attributed to this sense of pragmatism. The American patent clause had dared to speak its name and was condoned for that very reason.

Still, neither the Constitution nor the first Patent Act of 1790 did establish a patent office or an institution specializing in the search and registry of applications. It has therefore been remarked that the first period stretching to 1836 was one of “patent custom” rather than a “patent system” (Walterscheid 1997:63). Although the 1790 Act

⁸⁴ (James Kent, quoted in Ochoa and Rose 2002:928)

had made examination of applications statutory this was revoked already with the 1793 Patent Act which put in place European-style mere registration.

Moreover, and contrary to de Tocqueville's (2003[1835]:Vol. I, Chap. 8) observation that "scarcely any question arises in the United States which does not become, sooner or later, a subject of judicial debate", the first three patent acts would direct American patenting without being complemented by substantial case law, apart from fragmentary reliance on decisions by British courts (Walterscheid 1997:63).

During the era of 'patent custom' there was a fair amount of public comment on the perceived defects of patent law. Of the most commonly raised complaints were misuse and fraud of patents and patents without real worth (Walterscheid 1997:75). It has been pointed out that this was only to be expected; the act of 1790 had "expected too much from the governmental force which it made available" (Prager 1962:45). It had created high standards of patenting – which gave patents *prima facie* evidence of legitimacy – which required substantial scrutiny to be fulfilled – something the limited and non-specialized personnel could not possibly follow through. The result was a stark growth of litigation which, in effect, functioned as "an expensive form of patent review" (Prager 1962:48) and frequent disappointment among patentees. Eventually, case law would begin to exercise influence on American statutes.

By the mid-1830s concerns over the possibility for double-patenting under the registration system led Senator John Ruggles to form a committee to inquire possible reform. This effort led to the Patent Act of 1836 which reinstated the examination requirement and led to the creation of the Patent Office ("an office to be denominated the

Patent Office”, as per the bill) – the first modern patent institution in the world (Khan 2009:51–53).

Senator Ruggles, an avid technological enthusiast who, incidentally, acquired for himself the first U.S. Patent for a locomotive steam engine under the new system he helped create, accounted for the greatest problems under the patent custom. In a report submitted to the United States Senate, Ruggles (1836) explained how “a considerable portion of all the patents granted are worthless and void, as conflicting with, and infringing upon one another”. To add persuasive force to an audience consisting, mainly, of free-market liberalists, he warned that “the country becomes flooded with patent monopolies” – the latter a term he exclusively evoked to characterize patent misuse which he contrasted to “bona fide patentees” whose rights the proposed bill sought to protect.

Apart from reinstating requirements of novelty and usefulness, which would be delegated to the hands of appointed patent practitioners in the newly formed Patent Office, Ruggles demanded a new structure to be erected for public display of models and drawings which, in its technical splendor, Ruggles meant would serve as “a national museum of the arts”, a “symbol of the new era of enterprise and invention” (Evelyn 1989:26). Ruggles also gave a portentous warning to the Senate that the then extant patent repository, shared with the Post Office Department, was “too much exposed to destruction by fire” – a prophecy tragically fulfilled only half a year later when, on December 15 1836 the buildings burned down while awaiting completion of the new adjacent structure.

Inventors first

The Patent Act of 1836 significantly strengthened the validity of patents through professional examination and central catalogue and numbering. Importantly, it did so without raising the fee imposed on patentees by as much as a cent from the \$30 per patent under the Patent Act of 1793 which was then in force.⁸⁵ Until the first unified German patent law emerged in the late 1870s, the American system was alone in securing patent validity through a systematic check. This must surely be counted among the reasons as to the lesser pressure to abolish the patent system relative to Europe in the 19th century.

Besides increasing systemic reliability, the Patent Act of 1836 strengthened patentees' rights and gave them greater ease of sale, wider grounds for suits for infringement and increased damages from those suits as well as making extensions of patent rights easier (Lubar 1991).

Not only were strong individual rights enshrined in official American patent statute, but court opinions also expressed a relatively strong commitment to the rights of patentees vis-à-vis the public. A later American justification which states that “[t]he patent law is directed to the public purposes of fostering technological progress, investment in research and development, and international competitiveness”⁸⁶ would not have resonated well in the early 19th century when a Supreme Court Justice held that

⁸⁵ However, it only partially lifted the protectionist barrier of the Patent Act of 1793 which had imposed a fee of \$300 for foreigners and \$500 for British applicants by offering aliens who had submitted an oath of intention for becoming a U.S. Citizen the chance of paying the normal fee.

⁸⁶ Circuit Judge Newman, concurring in *Hilton Davis Chem. Co., v. Warner-Jenkinson Co.* 62 F.3d 1512, 35 U.S.P.Q.2d 1641, 1660 (Fed. Cir. 1995).

“congress have declared the intention of the law to be to promote the progress of useful arts by the benefits granted to inventors; not by those accruing to the public”.⁸⁷

Besides providing necessary legitimacy for a contested legal institution, the new examination system had important long-term benefits for technological progress. European systems from the same period were characterized by high fees and registration without examination. As Zorina Khan (2009:67) explains, “relatively low patent fees served to encourage ordinary citizens to invest in creating new discoveries, whereas an examination system increased the average technical value of patents”. These beneficial consequences of the American patent system helped bolster its general legitimacy in addition to strengthening domestic industry and economy.

By introducing professional examination while sticking to the inventor-friendly features of the old system – including the admission of inventions from all technologies and a low fee structure – the first American patent system had, from its inception, established the key features of an ‘inventor system’ (see chapter 5). Although examinations imposed on applicants could be seen as a attack on inventors, the outcome was to strengthen their status; as remarked in a retrospective comment from the late 19th century: “the provision for an examination of applications for patents has served to strengthen the presumption in favor of the validity of a patent” (Smith 1890:51).

Not all substantive aspects were yet in place after 1836 though; a non-obviousness requirement was, for instance, still not separated and detailed but still embedded in the fungible ‘utility’ requirement, and there was very little case law for the courts to rely on.

⁸⁷ *Whitney v. Emmett*, 29 Fed. Cas. 1074 (1831).

Ensuing developments would, on the other hand, gradually chip away at the American ‘inventor philosophy’ rather than propping it up further.

The overarching objective of market expansion motivating the architecture of the first American system was elegantly detailed by Senator Ruggles (1836) himself:

There appears to be no better way of measuring out appropriate rewards for useful inventions, than, by a general law, to secure to all descriptions of persons, without discrimination, the exclusive use and sale, for a given period, of the thing invented. In this way they will generally derive a just and appropriate encouragement proportioned to the value of their respective inventions. It is not at this day to be doubted that the evil of the temporary monopoly is greatly overbalanced by the good the community ultimately derives from its toleration.

By continuing to make the right to patents universal and available also to those with limited financial resources, and by focusing this right onto individual and original inventors only – all under a general commitment of market expansion – the system created in the United States in 1836 is arguably the one closest to the ‘inventor philosophy’ in practice. Whereas the first French system from the same period had loftier individualist aspirations (see chapter 7), these never materialized an actual, working, ‘inventor system’.

As for further substantive developments of the American patent system in the 19th century, these were mostly effected by the courts – despite the fact that the 1836 Patent Act had devolved some of the functions of the courts to the patent office, such as interference proceedings.

Decisive Times

Supreme Court Judges!
We have powers that are positively regal;
Only we can take a law and make it legal.

– *Of Thee I Sing*

Although several patent acts were passed in the 19th century, most of them dealt with trifles and procedural additions⁸⁸ while leaving the basic system created in 1836 intact. Two notable exceptions were the gradual erosion and eventual removal of the option to apply for ‘patent extension’⁸⁹ and the introduction of design patents.⁹⁰ Restrictions on patent ‘extensions’ was made by an act in 1848 which conferred the right to issue extensions solely to the Commissioner of Patents (it had previously been given by a board comprising also the Solicitor of the Treasury and the Secretary of State), whereas a change in the law in 1861 abolished the possibility altogether (Smith 1890:48–49).

Politically speaking, all debates and eventual reforms touched on matters of procedure and did not scathe the underlying philosophy of the first patent law: throughout the 19th century, American opinion continued to be that monopolies were fundamentally in conflict with free-market principles, and that only inventive merit could defend their restricted protection.

On the inventor-side, the second half of the 19th century was also characterized by spectacular growth of American industry and zealous patenting activity – something

⁸⁸ For instance, the Patent Act of 1837 – drafted in immediate response to the burning down of the Patent Office building the year before – drew up specifications for storage and copy of models and writings; the acts of 1842, 1846 and 1863 basically increased the capacity of the Patent Office by increasing the number of examiners and clerks in addition to changing the system of remuneration for Patent Office employees; the act of 1868 implemented rules of Patent Office responsibility in absence or disability of the Commissioner.

⁸⁹ Given by the Patent Act of 1836 under section 18.

⁹⁰ By the Patent Act of 1842.

which lead to warnings by prominent Europeans, such as Sir William Thomson who in 1876 prophesized that “If Europe does not amend its patent laws, America will speedily become the nursery of important inventions for the world” (quoted in Brown 1888:61). It is not surprising that this century has been characterized as the period of the “great inventors”, often attributed mythical status as geniuses working secretly and in solitude (Hughes 2004).

Of petitions to congress, most pertained to methods for declaring patents null and void (Lubar 1991:950) – a matter exceedingly taken over by courts in any case. Public debate featured patent controversies but – as opposed to contemporaneous European debates over the possible abolishment of the entire patent system (see Machlup and Penrose 1950, as well as general presentation in chapter 7) – discussions in America were mostly aimed at reform and not revolution. The *Scientific American* served as a platform for opinions and published articles by a broad range of pundits in addition to, for a period, circulating a catalogue of newly issued patents.

One group in particular emerged which wielded significant influence in the shaping the development of patenting in America: the growing importance of industrialists for innovation and finance. As Steven Lubar (1991) explains, whereas inventors kept beckoning for stronger statutory patentee rights, industrialists – who were more concerned with a dependable flow of patents available for use than the legal status of inventors – resorted to the judiciary in strengthening the rights of licensees and patent purchasers. The solution was found in the use of Equity Courts where judges, unlike in Common Law courts, could bring the parties to a case without a jury, employ rules

flexibly, and offer rulings that gave each side a partial victory. According to Lubar (1991:958):

The growing use of equity to enforce patent rights was probably the reason that the United States never underwent the traumatic patent controversies that shook England and most European countries in the 1850s and 1860s. The growth of equity – its triumph over the common law – allowed judges to take patent law into their own hands. A hearing before a judge, followed by an injunction, became the general rule in patent cases.

With increasing patenting came a growth of lawsuits. The 19th century was therefore the period of judicial maturing through the evolution of case law doctrines. Historical research has shown general consistency across courts and jurisdictions in deciding cases of patent litigation (Khan 1995), and court precedents established important mandates placed on applicants, which were not specified by public law; such as prerequisites for claims construction⁹¹ and regulations on the use of inventions by applicants prior to filing applications.⁹²

Several of these provisions would later be incorporated into statute. The single most important substantive addition to American after 1836 was the introduction of a ‘non-obviousness’ requirement for patentability. This requirement was first articulated by the judiciary and, until formalized into the statute of 1952, had remained a matter of law “only by reason of decisions of the courts.”⁹³ Non-obviousness is, broadly speaking, a requirement that sifts out trivial inventions from protection on the grounds that it would

⁹¹ Importantly, *O’Reilly v. Morse*, 56 U.S. 62 (1854).

⁹² *City of Elizabeth v. American Nicholson Pavement Co.* 97 U.S. 126 (1878); *Egbert v. Lippman*, 104 U.S. 333 (1881).

⁹³ 82^d Congress, 2^d Session, “Revision of Title 35, United States Code”, Report No. 1979 (1952), section 103.

not have occurred to an ordinarily skilled person of a trade (see chapter 2). Two Supreme Court decisions, both from the year 1950, decisively introduced this requirement to the American system.⁹⁴

Means Rationality

Of the Many concepts introduced by Max Weber, his distinction between two forms of rationality has an important resonance in the American courts' understanding as to what constitutes the principle of an 'invention' which gradually appeared in the 19th century. Several key axioms of patent law, as created by the American judiciary, treat the 'invention' in a similar vein as Max Weber understood social action which – when “rational”, that is, not based on emotions or tradition – can be sought in considerations of the objective itself or in the decision over alternative ways to reach it. The latter, by Weber defined as “instrumentally rational” social action (see Weber 1978b:24), is not an attribute of 'ends' but the process of deciding the most efficient 'means' to reach them.

The American judiciary was never, of course, interested in the intent of the inventor with regard to the process of discovery; in the words of the influential Justice Story, speaking against requirements of exceptional ingenuity of patentees: “The law looks to the fact, and not to the process by which it is accomplished.”⁹⁵ But doctrines emerging in the 19th century touched on a similar distinction as the one advanced by Weber in their attempts to analyze the rationale of inventions. Although it took decades

⁹⁴ *Hotchkiss v. Greenwood*, 52 U.S. 248 (1850); *A. & P. Tea Co. v. Supermarket Corp.*, 340 U.S. 147 (1950).

⁹⁵ *Earle v. Sawyer*, 8 F. Cas. 254 (1825).

before the courts arrived at consistent practice, it was gradually established that an invention was substantively identified by the means through which a technical function was served. Formally – the rule became – two different ways to perform the same function would both be patentable despite the fact that they served the same purpose (Robinson 1890:34–38).

Robinson (1890:335–336) cites numerous early cases where the ‘means/ends’ (or ‘formal/substantive’) distinction had not yet been realized; observable in such opinions as

To make one mechanical device the equivalent of another, it must appear not only that it produces the same effect, but that such effect is produced by substantially the same mode of operation.⁹⁶

It is not therefore sufficient, in order to authorize the jury to find that one device, or a series of devices all operating to the same end, is or are mechanical equivalents for other devices, unless they effect the same substantial purpose by substantially the same mode of operation.⁹⁷

But gradually it was perceived that one would have to look at two aspects of an invention for the sake of comparison to another, and that ‘equivalence’ “has two meanings[.] The one relates to the results that are produced, and the other to the mechanism by which those results are produced.”⁹⁸ A Supreme Court decision summed this evolving understanding up well:

⁹⁶ J. Dyer, in *Gottfried v. Phillip Best Brewing Co.* (1879), 17 O. G. 675.

⁹⁷ J. Hall, in *Conover v. Roach* (1857), 4 Fisher, 12.

⁹⁸ J. Sprague, in *Johnson v. Root* (1858), 1 Fisher, 351.

The thing patented is the particular means devised by the inventor by which that result is attained, leaving it open to any other inventor to accomplish the same result by other means.⁹⁹

With this understanding in place, the American patent system had created a manner of dissecting patents which was not familiar to concurrent European practice. The implications of a ‘means-ends’ understanding of inventions led to a type of patent specification – or, ‘claim construction’ – and enforcement of patentee rights which was more legalistic than technical in comparison to European systems – a difference which, to a certain degree, still exists today.

This is seen in the ‘doctrine of equivalents’ which, since being introduced in the United States by the Supreme Court,¹⁰⁰ can be invoked as a challenge of infringement for functionally similar device and is measured against specific claims of the inventions; not the invention as a whole. The way American version of the ‘equivalents’ doctrine was first articulated in a case of alleged infringement explicitly heralded the new textual understanding of the invention. After requesting that the court interpret the nature of Mr. Ross Winans invention for an improvement in cars for transportation of coal, “[w]ithout going into unnecessary details, or referring to drawings”, Justice Curtis declared that

Where form and substance are inseparable, it is enough to look at the form only. Where they are separable; where the whole substance of the invention may be copied in a different forms, it is the duty of courts and juries to look through the form for the substance of the invention – for that

⁹⁹ J. Matthews in *Electric Railroad Signal Co. v. Hall Railway Signal Co.* (1885), 114 U.S. 87.

¹⁰⁰ In decision *Winans v. Denmead* (1853), 15 How, 56 U.S.

which entitled the inventor to his patent, and which the patent was designed to secure; where that is found, there is an infringement[.]¹⁰¹

English law has never introduced any measure for infringement of equivalents, and, even today, equivalence in France is assessed with view to the invention in its entirety (not to specific claims).

Claiming

The 19th century also saw the emergence of the art of patent claim construction which further displaced models and drawing by written stipulations of inventions. Furthermore, the American development towards so-called ‘peripheral claiming’ is traced to the latter half of the 19th century (Burk and Lemley 2009) should be seen as an offspring to the general idea that different aspects of patents should be separated and articulated for each invention. Peripheral claiming attests to a textual understanding of invention which enhances the adversarial function of the patent document more than its informational value – a tendency Europe has resisted.

Patent claims, which consist of the structural specifications of an invention, are used to determine infringement and therefore capture the rights of the patent holder. As patentees gradually were required to describe their invention linguistically, rather than in drawing and model construction, the practice of claim construction evolved as an art in itself.

¹⁰¹ *Winans v. Denmead* (1853), 15 How, 56 U.S.

The first true patent claims are said to have been drafted by Robert Fulton in 1811 who specified his steamboat invention by reference to its structural elements (Lutz 1938). This idea, that approvable claims are meant to be *structural*, has been essential to the American patent requirements for as long as it has been expected. Even today, when functional statements *are* permitted by the USPTO, these do not constitute the claimable elements.¹⁰²

The fact that an American patent claim, in the 19th century as well as today, must be descriptive and not functional constitutes a curious twist of the Weberian rationality concept: a claim epitomizes ‘means-rationality’ in the sense that the outcome, or *function*, is not essentially claimed but only the elements required to arrive at it; but the moment a ‘means’ is entirely purified of its ‘end’ it almost stops being a ‘means’ and turns into an end in itself – a current topic in social theory inspired by Max Weber (for instance, Brubaker 1984). This tension haunted the development of American patent doctrine from the outset:

On one hand, the elements of a claim were not supposed to be defined functionally; on the other, a claim was supposed to be something more than a catalogue of parts. A properly drafted claim had to put together its (non-functional) elements in such a way as to suggest motion and function.

(Pottage and Sherman 2010:140)

Formally, the Patent Act of 1836 was the first to intimate claiming practice by its specification that the applicant must “specify and point out the part, improvement, or

¹⁰² See section 2173.05(g) of *Manual of Patent Examining Procedure*.

combination, which he claims as his own invention or discovery”¹⁰³; although the affinity to modern patent claiming in this law was merely lexical. It was not originally in response to patent office requirements but to prepare themselves for possible litigation applicants and patent attorneys begun specializing in the art of ‘claiming’.

Broadly speaking, patent claims must be seen as part of “the unification of the modern patent text [which] can be dated to the third quarter of the nineteenth century” (Pottage and Sherman 2010:132). The emergence of patent claims must therefore also be attributed to the American judiciary; both by the doctrinal rules that the patent document must “make known”¹⁰⁴ (i.e. ‘disclose’) an invention as well as “put the public in possession of what the party claims as his own invention”¹⁰⁵ (i.e. ‘delimit’); and indirectly through patentees’ increasing awareness of the likelihood that their patent property would end up in a court room. The move towards ‘peripheral claiming’ constitutes a relative shift in favor of the delimiting function of patent specifications over their explanatory function.

The difference in claiming practice between European patent systems to that of the United States was visible before the mid-20th century, where the American practice was to encourage more and longer claims (see Vojáček 1936:36 for earliest international comparison) – a pattern still clearly visible in the national identity of applicants (Archontopoulos et al. 2006).

¹⁰³ Patent Act of 1836, section 6.

¹⁰⁴ *Evans v. Eaton* (1822), 20 U.S. 356.

¹⁰⁵ *Ibid.*

As with the non-obviousness requirement, the shaping of the patent text, its unification and codification, too must be historically traced to the role of the American judiciary. ‘Peripheral claiming’ underscores an American adversarial understanding of patents as this way of describing an invention does more to facilitate litigation than informational dissemination. Illustrative of its importance, a Chief Judge of the Federal Circuit, describing the characteristics of American patenting recently declared that, “To coin a phrase, the name of the game is the claim” (Rich 1990).

Consolidation

The Patent Act of 1870 is a milestone in terms of patent procedure in that it “unified and simplified existing law but [it] made little substantive change” to the existing system (Schwabach 2007:14). Until the complete revision of federal laws which culminated in Title 35 of the United States Code in 1952 – for many provisions, the current patent law of the United States – American patent law consisted of “essentially the act of 1870 with subsequent amendatory and supplemental enactments.”¹⁰⁶ And, disregarding the important substantive additions already made by the American judiciary at the time, in comparison to the Act of 1836, “no substantial change was made in the rights of inventors, in the proceedings touching the issue of patents, or in the practice of jurisdiction” (Smith 1890:55) in that of 1870.

One notable addition which, at least indirectly, touched on issues of a more philosophical nature was the mandatory yearly report to Congress submitted by the

¹⁰⁶ Senator Alexander Wiley: S. Rep. No. 1979, 82d Cong., 2d Sess., 5 (1952), p. 2.

Commissioner containing all patents issued the preceding year along with an alphabetical list of patentees.¹⁰⁷ This provision marked a stronger attachment to the written character of American patent documents and the expediency of dispatch, storage, and circulation of such. As remarked by Alain Pottage and Brad Sherman (2010:94): “The Patent Act of 1870 can be taken as a formal marker of the end of the era of the patent model[.]” With the mandatory report to congress, the act did at least adopt a provision of relevance to the informational value of patents to the public.

One should therefore say that, by the late 19th century, the American patent system had reached a denouement of an action plot of law and technology. Not only had the U.S. steered clear of the most acidic criticisms of patents raised in Europe during the same period; subsequent reforms had upheld the inventor-friendly commitment of early law, several aspects of which were shaped by court decisions.

Finally, an increased circulation of patent information – both by consistent growth of applications and ensuing litigation –, in addition to increasing technological complexity of inventions, pushed patenting in direction of textuality, manifested in peripheral claiming and filing practices of the USPTO. The following decades did not see any important substantive statutes or even case law which would alter the system as it was at that time.

¹⁰⁷ Section 9 of Patent Act of 1870, Ch. 230, 16 Stat. 198-217 (July 8, 1870).

Collision

That is not to say that patenting went without controversy; far from it. However, developments from the late 19th - and early 20th century did not occur *within* patent law, but emerged from *without*: most importantly through anti-trust laws and contract laws. Such legal confrontations can have immense practical consequences, but it must still be born in mind that they typically do not strike at the ideological core of any legal sub-system but rather creates a situation of triangulation of separate laws to demarcate legal jurisdiction.

In one sense, the collisions between separate legal areas might serve to protect both from collapse or radical change if the outcome is simply to carve out and rearticulate boundaries and jurisdictions between them – something, as explained in chapter 7 helped protect the ‘invention philosophy’ of German, and eventually, European patent law. In the case of early 19th century United States, this was partially what occurred with regard to the borders between antitrust and patent law.

If anti-monopoly sentiments did not directly hurt patent law in the United States – as it had in Europe – the American public and politics were no less suspicious of violations of free market principles through price discrimination tactics and cartelization. A commentator summarized the gist of American industrial and commercial policy at the turn of the last century thus:

Monopoly is regarded as necessarily an evil. Free competition is the law which must govern all industry. The reasons for the formation of

combinations are entirely anti-social; that is, combinations are created solely for the sake of preventing competition and securing a monopoly.
(Knauth 1913:206)

At approximately the same time as the American patent system had reached its level of maturity, President Benjamin Harrison, on July 2, 1890, signed the Sherman Antitrust Act. While broadly aimed at removing restrictions on free trade or supply, the Sherman Act was construed as anathema to any form of monopoly and consorted attempts to fix prices for goods and services above the market rate. Interpretations and uses of the act were expansive and it was, among other things, summoned to break up organized labor movements (as detailed by Forbath 1991, chapter 3).

It was only a matter of time before the Sherman Act would run into skirmishes with patent law since “[t]he Patent Act [...] creates a monopoly while the Sherman Act prohibits monopolies” (Abbot 1912:710). In particular, various licensing agreements, which were being used increasingly and extensively by that time, brought patent practice into conflict with antitrust due to the fact that many licenses contained stipulations for future use of licensed technology, as well as restrictions on ensuing trade of such.

Although based on contractual agreement, patent licenses can be seen as adversarial in a dual sense. Stipulations with restrictions on production and trade run contrary to strong free trade principles and thus increase the market power of patent holders. In addition, licensing is likely to occur between otherwise competitors or, even, would-be infringers of patented technology. It has therefore been remarked that “virtually every patent license can be viewed as a settlement of a patent dispute” (Shapiro 2003:392).

A compromise between patent policy and antitrust law was reached by ways of Supreme Court precedence in the logic articulated by Justice Peckham in a case involving contractual dispute over a licensed patent

[T]hat statute [Sherman Act] clearly does no refer to that kind of a restraint of interstate commerce which may arise from reasonable and legal conditions imposed upon the assignee or licensee of a patent by the owner thereof.¹⁰⁸

Still, there was strong disagreement over the actual relationship between the Sherman Act and patent law. Opinions ranged from calls to arms as “[t]hey are mutually inconsistent. One must yield to the other” (Montague 1912:468); to soothing statements that “the two statutes are not in conflict” (Abbot 1912:710). The passing of the Clayton Antitrust Act in 1914, the objective of which was to prevent anticompetitive practices in their incipiency and to define the basic industrial policy of the United States, even further brought patent law into the purview to that of antitrust.

Several years after the Clayton Act was passed, a commentary in *The Yale Law Journal* (Anon 1931) expressed concerns that its enforcement against licensing agreements would surely discourage large companies from investing in research. Even a century after the Sherman Act was passed, it could be noticed that the relationship between patent policy and antitrust law had remained “a source of perpetual confusion and controversy” (Kaplow 1984:1816). Academic discussions on the relationship

¹⁰⁸ In *Bement v. National Harrow Co.*, 186 U.S. 70 (1902), p. 92.

between patents and antitrust continued well into the 20th century (for instance Furth 1958; Gibbons 1965).

Ultimately, the principle of separate jurisdictions reached a level of sustainable balance; something which served to rearticulate what exactly patent rights consisted in. Judges and commentators in the 19th century were prone to construe the patent privilege as “the exclusive right [for an inventor] of practicing that invention” (Curtis 1873:xix), or as a “true monopoly” to a discovery (Robinson 1890:67). Judges from the same time often disagreed, either by not considering a patent as a monopoly at all,¹⁰⁹ or as one which was not a monopoly “in an odious sense”.¹¹⁰

These interpretations gradually gave way to understandings which placed greater emphasis on the notion that a patent gave a ‘right to exclude’ rather than its ‘right to use’; this is illustrated by the changed wording as to what a patent confers in the codification of 1952 (see below). To the traditional wording “may obtain a patent therefor” was added a section on the contents of a patent of “the right to exclude others from making, using, offering for sale, or selling”.¹¹¹

Although this might sound like a restriction of rights – which in some sense it is – the ‘right to exclude’ interpretation opens a new spectrum of aggressive strategies involving licenses. The traditional ‘right to work’ interpretation is easily complemented with an ‘obligation to work’ – something seen in still extant various European ‘working requirements’ which have no correspondence in American law.

¹⁰⁹ E.g. Justice Robb in *Parker v. Haworth*, Fed. Cas. C.C.D. 111 (1848): “It is not a monopoly the inventor receives. Instead of taking anything from the public, he confers on it the greatest benefits.”

¹¹⁰ *Brooks v. Jenkins* (1844), 3 McLean, 437.

¹¹¹ 35 U.S.C. § 154.

The ‘right to exclude’ view on patents was affirmed by the Supreme Court in a very influential 1908 decision which held that it was the essence of a patent that it gives its holder the right to exclude others without question of motive, or without the patentee exploiting the invention technically.¹¹² The definitive exclusion of questions on motives illustrates the affinity with adversarial patenting brought to light in the new and negative interpretation of patentee rights – the antagonistic aspect of the ‘inventor philosophy’ which, for this area of the law, had hitherto laid dormant, sprang into force at the hands of the actions of the judiciary.

Although the Supreme Court has continued to adhere to the ‘exclusion concept’ of patents, it has been argued that the theoretical underpinnings of this notion is not entirely settled because it “does not adequately define patents as a unique species of property and that this is a long-unacknowledged Achilles heel in modern patent jurisprudence” (Mossoff 2009:5). In practice, however, the ‘exclusion concept’ today is the ruling understanding of the patent right in the United States.¹¹³

This stronger emphasis of the adversarial character of patents suitably positioned the trade-restricting aspects of patenting practice outside of the scope of antitrust laws. Licensing restrictions might imply monopolistic tendencies, but their adversarial character made them viewed less as violations of competition. In forging out the relationship between patent and antitrust laws, American courts in the early 20th century created precedents of opposing character.

¹¹² *Continental Paper Bag Co. v. Eastern Paper Bag Co.*, 210 U.S. 405 (1908).

¹¹³ The Federal Circuit, for instance, stated that it is “elementary” that “a patent grants only the right to *exclude others* and confers no right on its holder to make, use, or sell” an invention (*Bio-Tech. Gen. Corp. v. Genentech, Inc.*, 80 F.3d 1553, 1559 [Fed. Cir. 1996]).

On the one hand, in what has come to be known as the ‘exhaustion doctrine’, the first unrestricted sale of a patented item is seen to exhaust the patentees control over that item. The first step was laid in 1913 when the Supreme Court ruled that patents could not be used to control resale prices.¹¹⁴ In effect, price fixation and restrictions of marketability was considered superior to patentee rights in certain regards.

On the other hand, so called ‘field-of-use limitations’, wherein the patent owner limits the scope of what a manufacturing licensee can do in relation to the patent, were held to be permissible by the Supreme Court in 1938.¹¹⁵ For issues of manufacturing arrangements, American antitrust law does, in other words, not apply. Nevertheless, theoretically speaking, as long as patent laws exist alongside antitrust laws there will continue to be a “formidable paradox” (Carrier 2002:762) in the area of industrial policy.

Depression Era, Demystification

The early-to-mid-20th century was, however, also a period of international turmoil and domestic economic hardships, particularly during the Great Depression of the 1930s. American patenting activity, of course, was adversely affected by the hurting economy and industry, and some – including the so-called ‘Yale School’ of Economics – claimed that the patent system itself was partially responsible for the economic crisis (Kihara 2000:174).

¹¹⁴ In *Bauer & Cie. v. O’Donnell*, 229 U.S. 1 (1913). It should be noted that the Supreme Court, much later in *Leegin Creative Leather Products, Inc. v. PSKS, Inc.*, 551 U.S. 877 (2007) rules that minimum resale price maintenance requirements are not a *per se* violation of American antitrust law.

¹¹⁵ *General Talking Pictures Corp. v. Western Electric Co.*, 304 U.S. 175 (1938). However, similar arrangements for patent pools between companies have been found to potentially violate antitrust law; particularly in *Hartford-Empire Co. v. United States*, 323 U.S. 386 (1945).

Although they turned out to be largely unsuccessful in the end, attempts at legal reform from the depression era explicitly targeted the perceived relative growth of corporate patent holders relative to individual patentees.¹¹⁶ A general decline in industrial activity, it was surmised, could be related to failure to protect the individual inventor, that avatar of American technological political mythology. A general skepticism against patents of the courts did, however establish itself in the judiciary; to the point where Supreme Court Justice Jackson, in 1949, expressed that “the only valid patent is one which this Court has not been able to get its hands on.”¹¹⁷

Failure of Congressional efforts for a 1938 patent law reform has been taken to illustrate the decisive breakup of attachment between American patent policy and frontier-ideology (Owens 1991). In fact, a growing feeling in the patent profession that legal uncertainty of existing law was a greater problem than the absence of individual protection has been suggested as a reason for a push toward patent formalization instead (Anon 1963), something which paved the way toward formalization of federal patent law in 1952 (see below). Another reasons as to why reforms to bolster the position of individual inventors was, undoubtedly, tied to the fact that American patent law did already provide more inventor-protection than other contemporary patent systems.

¹¹⁶ Enactment of Title 35 of the United States Code in 1952 did, on the other hand, perhaps as a nod to the fears of Congress articulated a decade earlier, include the partially superfluous provision that a patent shall not be granted to a persons if “he did not himself invent the subject matter to be patented” (Section 102, f.); ‘superfluous’ because section 101 already defines patentability to “Whoever invents or discovers...”, and the award of patents to ‘first and original’ inventors only had, in any case, been the law and practice of the American system from its inception.

It is also interesting to note that the same concerns surrounded German patent reform of the same period (see chapter 7).

¹¹⁷ Dissenting in *Jungersen v. Ostby & Barton Co.*, 335 U.S. 560 (1949).

But, as Owens's analysis suggests, with the disappearance of the geographical frontier and the prospects it had given to the settler mentality, it had gradually dawned on the American political mentality that the future of science and technology would be in collectivist endeavor and "social invention" – a development Owens considered paved the way to the social protection programs of the New Deal as well (Owens 1991:1090). Besides, antitrust laws and free-market oppositions to any monopolies continued to work as a cooling sift for any move for increased patent rights.

The Depression-era did, however, engender one major change to patent law, namely the introduction of intellectual property rights to biological materials with the Plant Patent Act of 1930 which made it possible to patent asexually produced new plant varieties. Part of the motivation for its passage was the perceived need to increase efficiency of agricultural production in face of national food shortage (see Fowler 2000).

Substantively, the Plant Patent Act challenged traditional understandings as to what qualifies as invention. Whereas the traditional concept of the 'invention' in American patent law was framed on the idea that the only actor able to exercise inventiveness was the human inventor, the inclusion of plant varieties acknowledged that nature played a key role in the development of some patentable subject matter (Pottage and Sherman 2010:175).

The Plant Patent Act has been seminal in shaping the technological inclusiveness characteristic of modern American patent law. The technological inclusiveness which made its creation possible rests on a particular interpretation of the role of the law in terms of subject matter restrictions. This approach, which has taken hold of American

patent policy from at least since the post-war period, is well expressed by the Supreme Court in the oft-discussed *Diamond v. Chakrabarty* case from 1980: “Congress employed a broad general language in drafting § 101 [on patentable subject matter] precisely because such inventions are often unforeseeable.”¹¹⁸

Formalization

The patent law reform of 1952, which was part of the codification of Title 35 of the *United States Code*, was the result of an official investigation of the operation of the patent system by the National Patent Planning Commission between the years 1943 and 1945. The commission unequivocally concluded that the system should be preserved and that no major overhaul was necessary (Riesenfeld 1954:293). The most important substantive addition of the reform was the requirement that an invention be ‘non-obvious’ to qualify for a patent as well as a provision prohibiting ‘contributory infringement’.¹¹⁹ In other words, one provision making it seemingly harder to gain a patent, and one extending protection and rights for those who do obtain one.

As mentioned above, however, a ‘non-obviousness’ requirement had been enforced by the USPTO for a century before it was codified into statute, and courts had accepted that patents needed to consist of discoveries of greater ingenuity than mere improvement of the “skillful mechanic” to be valid as a matter of precedence from

¹¹⁸ *Diamond v. Chakrabarty*, 447 U.S. 303 (1980).

¹¹⁹ “The major changes or innovations in the title consist of incorporating a requirement for invention in § 103 [“non-obvious subject matter”] and the judicial doctrine of contributory infringement in § 271”. Senator Alexander Wiley: S. Rep. No. 1979, 82d Cong., 2d Sess., 5 (1952), p. 4.

1850.¹²⁰ Early standards were, however, notoriously vague: a reference book from the early 20th century would, for instance, summarize that the courts had decided that in order to be eligible for protection “a thing must be the product of some exercise of the inventive faculties” (Walker 1904:17) – that being said, the idea of a entirely stringent definition of non-obviousness is a fiction, as the requirement involve an imputation of an abstract idea which can only be decided case-to-case and at an examiners discretion (see Bently and Sherman 2004:469).

Under this nebulous precedence, the courts throughout the first half of the 20th century had begun staking out a course toward increasingly stricter interpretations of the “skilful mechanic” test for the “exercise of the inventive faculties”, as one which necessitated the presence of a “flash of creative genius”¹²¹; moreover, it was established that known elements in combination had to create a “whole [which] in some way exceeds the sum of its parts”¹²² (for courts treatment of inventiveness, see Balluff 1952).

Neither ‘non-obviousness’ nor ‘contributory infringement’ were therefore new additions in practice. Moreover, the USPTO emphasized “invention” which was often taken to mean that there had to be a “flash of creative genius” and hence, in practice, potentially more restrictive than a ‘non-obviousness’ requirement. Part of the motivation was therefore to “reverse this trend” in patenting standards (Grubb 1999:22).

In any case, the formalization of ‘non-obviousness’ signaled its acceptance by the legislature: Title 35 could have chosen to opt for a different understanding, if any, of non-

¹²⁰ Justice Nelson, in *Hotchkiss v. Greenwood*, 52 U.S. 11 How. 248 (1850).

¹²¹ *Cuno Eng’r Corp. v. Automatic Devices Corp.*, 314 U.S. 84 (1941).

¹²² *Great Atlantic & Pacific Tea Co. v. Supermarket Equipment Corp.*, 340 U.S. 147 (1950).

obviousness than the one originally articulated by the courts. As the Committee of the Judiciary noted, it received opinions from numerous sources – public, professional, and private – after it had published a draft entitled “Proposed Revision and Amendment of the Patent Laws” in 1947.¹²³ None of these led to a drastic change of the law. Also, it has been suggested that the situation prior to 1952 was one in which the law “applied in a particular case often seemed to depend as much upon the judge’s philosophy of the patent system as upon logical inference from an accepted legal standard” (Anon 1963).

Whether or not section 103 was intended to solidify the increasingly strict interpretations of obviousness employed by the courts (e.g. “flash of creative genius”) is not at all certain. The fact that the codification introduced ‘non-obviousness’ as a statutory requirement bespeaks an interest in increasing the bar for patentability at the level of the patent office to align its practice to the general interpretations of the courts. On the other hand, the second sentence of section 103 which reads that “Patentability shall not be negated by the manner in which the invention was made” has been said to signal a loosening of strict interpretations of the requirement (Anon 1963:310).

In any case, an early survey as to how the judiciary understood section 103 found no consistency in matter of stringency (Anon 1963). This finding is perhaps not surprising given the fact that ‘non-obviousness’ (or ‘inventive step’) is the most difficult requirement of patentability to decide, and one which ultimately rests on case-to-case and

¹²³ The Committee of the Judiciary mentioned the following as particularly important sources: the Patent Bar, the United States Patent Office, members of the Armed Forces, The Coordinating Committee of the Patent Bar (organized under the auspices of the National Council of Patent Law Associations), as well as industrial representatives (S. Rep. No. 1979, 82d Cong., 2d Sess., 5 (1952)).

individual discretion (Bently and Sherman 2004:469) – as such, non-obviousness, ironically, evades all attempts at formalization.

The non-obviousness requirement also has a tendency to oscillate between laxity and stringency: if the 1952 formalization had the indirect effect of ameliorating the requirement by shifting focus from mental qualities of a person having made an invention to the art to which it belongs and contributes (the opinion of Grubb 1999:22), a recent Supreme Court decision has established that obviousness includes the discoveries of “a person [skilled in the art] of ordinary creativity”¹²⁴ – a decree with potentially far-reaching implications in restricting patentability (Choate 2007:11).

The Supreme Court would later tried to further formalize the requirement in the case¹²⁵ which specified the so-called ‘Graham factors’ for the determination of non-obviousness; the court explained that the Patent Office would have to assess obviousness, ultimately, in a case-by-case manner but that courts could also rely on secondary considerations, such as commercial success, failure of others to arrive at the same invention, or long felt and unresolved needs.

What the reform left out is, in some cases, equally important to that it did enact. Specifically, the 1952 reform and codification refrained from defining the concept of ‘utility’. Consequently, this concept continued to be a nebulous requirement, able to block patents on the grounds of such diverse considerations as non-industrial subject matter or the fact that an invention runs against public morality.

¹²⁴ Justice Kennedy’s opinion in *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007).

¹²⁵ *Graham v. John Deere co.*, 383 U.S. 1 (1966).

Another noteworthy omission in the reform was the absence of any express provision of compulsory licenses and working requirements. The continued American insistence that a patent confers the right to its holder “to use it himself and refuse to license it, or to retain it and neither use nor license it”¹²⁶. The omission is noteworthy, both because most industrial nations at the time did have such provisions, and because the National Patent Planning Commission had made moderate proposals for compulsory licenses in the fields of public health and public safety (Riesefeld 1954:322).

Viewed holistically, the reform and codification of federal patent law in 1952 signaled a continued American commitment to an ‘inventor system’ (see chapter 3): The American law had upheld its positive and inclusive definition of patentable subject matter, its flexible and liberal ‘utility’ requirement, and had refrained from imposing restrictions on the use of patents by any working requirement or compulsory licenses. Not until the Patent Act of 2011 did this philosophy receive a strong blow (see below).

Internationalization

The history of patenting has been one which is equally shaped as much ‘from below’ as ‘from above’. The latter – comprising legislation and court decisions – of course, is the most “usual” way legal rules are created (Weber 1978c:753). In numerous instances, though, the impetus for change has come from the stratagems and legal innovations of those holding patents; such as the collision between antitrust law and

¹²⁶ *Hartford-Empire Co. v. United States*, 323 U.S. 386, 417 (1945).

patent law spurred by creative and strategic uses of patent pools and licensing agreements (as detailed above).

Both forces have always been at play in shaping patent law, but if one were to assess the relative contributions on American patent law from ‘below’ and ‘above’ during the second half of the 20th century one has to admit that the level of sophistication on part of patentees had played an unprecedented importance during this latter period.

A terse summary the most important developments in the realm of patenting in the post-war United States would be the following: patentees have discovered an increasingly sophisticated strategic action repertoire on their industrial property; the range of patentable subject matter has grown dramatically with advances in industries such as software and biotechnology; politically, an American-led political mission to streamline and consolidate patent law globally has been largely successful, though attempts to reform domestic patent law has met little success; finally, formalization of the judiciary has contributed to a general favorableness toward patent holders.

Specialist groups

The post-war period was characterized by formalization of the judiciary in cases involving patents, on the other the patent profession grew rapidly and members of the legal profession begun specializing in patent law more than ever before. Patent holders too developed new uses assets pertaining to their intellectual property. Politically though, the greatest push turned outward to the protection of American inventors and various

ways patent procedure could be streamlined in a climate of growing internationalization of patenting activity.

By the mid-20th century, the power of the legal profession was beginning to be felt. By 1930, around 10,000 individuals were listed as patent attorneys or patent agents, which meant they – once described lyrically as the “priests of the inner-mysteries of the temple of justice”¹²⁷ – were eligible to practice before the Patent Office (Spencer 1933:926).¹²⁸ This group had effectively barred numerous attempts to reduce the legal intricacies of patent procedure and rules made by Congress and the Secretary of Commerce (Spencer 1933:934).

The number of registered patent agents and attorneys is, however, the most interesting figure as well as the number of lawsuits. A recent statistical analysis of the litigious aspect of patenting has shown how, between 1960 and 2000, the number of active patent agents/attorneys and the number of patent suits both more than tripled (Landes and Posner 2003:348). This trend should be seen as an expression of two related trends: firstly, how the adversarial aspect of patents has been utilized by industry to an ever growing degree in the post-war American environment; secondly, how the influence of the specialized group of legal practitioners is playing an increasing role in patenting activity.

¹²⁷ Address by Chief Justice Hughes to American Patent Law Association, February 14 1929.

¹²⁸ The current figure of 40,000 people is higher, but not staggering: see “Patent Attorney/Agent Search”, Office of Enrollment and Discipline, United States Patent and Trademark Office: <https://oedci.uspto.gov/OEDCI/>, retrieved June 5, 2011. However, as both Spencer (1933) point out and, more recently, Landes and Posner’s (2003) data heads, the number of *active* patent agents and attorneys is much lower.

As Landes and Posner (2003:347) explains, “[o]ther things being equal, the more certain law is, the less likely is litigation.” The fact that patent litigation has been growing consistently in the United States illustrates that the post-war period has not been characterized by legal certainty or a development to that effect. This fact makes Spencer’s (1933:934) old diagnosis that “the patent lawyer has not only developed an intricate system of law and procedure but he furthermore insists upon keeping it” even more telling.

Technological Revolutions

Of all recent developments in patent law, all but one have consisted in slight and gradual departures from an ideal ‘inventor philosophy’; the exception being the increasing endorsement of new subject matter eligible for patenting. The consistent expansion of patentable subject matter in the United States has not, however, been part of a conscious political effort by the legislature. In fact, the continuous inclusion of new technologies to the realm of patents has occurred in spite of some ambitious attempts to restrict the range of patentable subject matter.

Immediately after the codification of federal patent law, the Senate Judiciary Subcommittee on Patents, Trademarks, and Copyrights, led by Chairman O’Mahoney, undertook an extensive analysis of the patent system which spawned some 30 research papers. Senator John L. McClellan, who took over the helm of the subcommittee in 1961 continued to examine the need for substantive reform (Scott and Unkovic 1975).

The research efforts revealed the need to adjust the patent system in response to “exploding technology” and loss of control over the patent system. This period, in general, had been marked by a growing interest in technological policy by the federal government (Pursell 1968). Resultantly, President Johnson, in 1965, appointed a President’s Commission on the Patent System, comprising member of industry, private inventors, and government agencies directly concerned with the patent system.¹²⁹ The commission’s mandate was to investigate the patent system and propose changes. Rather than aiming for minor reform, the result, published in 1967,¹³⁰ called for a major overhaul which would have turned the American system in direction of an ‘invention system’ – an attempt that was crowned with a partial victory forty years later (see below).

Among the most important changes, in this regard, proposed were the following: the implementation of a ‘first-to-file’ system; issue of no patents on designs, plants, or computer programs; adoption of an *ex parte* administrative procedure for reexamination; abolish broadening reissue applications. Virtually all suggestions were rejected (Stobbs 2000:27), and proposed amendments and adjustments to the initial plans petered out as congressional debates ate away at all aspects of reform (see Scott and Unkovic 1975).

Shortly afterwards, in 1975, the Patent, Trademark and Copyright Subcommittee in the Senate Judiciary Committee proposed the “Patent Reform Act”¹³¹ which was the result of endless campaigning by interest groups which had limited all initial attempts at substantial changes to U.S. patent law. Although opinions had come from all strands of

¹²⁹ Exec. Order No. 11,215, 3 C.F.R. 299 (1964-65).

¹³⁰ Report of the President's Commission on the Patent System, “‘To Promote the Progress of . . . Useful Arts’ In the Age of Exploding Technology”, Report to the Senate Judiciary Committee, S. Doc. No. 5, 90th Cong., 1st Sess. (GPO 1967).

¹³¹ P.L. 93-596 – January 2, 1975.

society, the decisive influence in the final, drastically weakened, bill had come from the well-organized patent bar the interests of which indirectly were those of major corporations (Scott and Unkovic 1975:967).

In other words, although the political climate of the 1960s and 1970s had been partially opposed to strong patentee rights, drastic domestic reform came to naught. Alongside the apparent strength of the patent bar and corporate lobby was the growing conviction in American politics that the United States faced dramatic technological competition from abroad, primarily from Japanese manufacturers, something which facilitated the emergence of more patent-friendly climate (see below).

With regard to substantive patent law, part of the explanation of the success and resilience of American technical inclusiveness, and its expansive tendency, must, however, be recognized to lie in the very structure of American intellectual property treatment, to some degree, in specific interpretations of the law by the judiciary.

In keeping with its ‘inventor philosophy’, the American definition of patentability, from the outset, has been positive and technically inclusive; that is, it specifies what *is* patentable, and it does so vaguely.¹³² The fact that inclusiveness was enshrined in the constitution as well as the first patent act would have rendered all attempts for exclusion based on the technical character of an invention a revolution of fundamental principles.

¹³² As detailed above, this has been a feature of the American system from the beginning: the first Patent Act of 1790 which specified patentability for “any art, manufacture, engine, machine or device” (sec. 4). Current law is remarkably similar in terms of technical inclusiveness, if not more so: “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof” (35 U.S.C. § 101) – see also general discussion of chapter 4.

As a legal system which, at its core, is based on a perception of a conditional trade-off between the interests of “the few” and “the many” – to use James Madison’s original terms – rarely survives such drastic changes. An important aspect of American ‘inclusiveness’ should hence be attributed to the structure of legal definition.

In Europe, the European Patent Office has tried to by-pass its own restrictions on patentable subject matter in recent years, to the point where patentees, in practice, can acquire the same industrial properties on both sides of the Atlantic. No ruse has been necessary in the United States for applicants, whose right to patent “anything under the sun that is made by man” has now been recognized and routinely affirmed for more than half a century.¹³³ This has been particularly important for industries embodying software, pharmaceutical, and biotechnological inventions, all of which have been conditionally approved for patent-eligibility in the United States.

Some have gone further and suggested that recent court decisions have served to unsettle the old paradigm of ‘mechanical invention’ and to alter the mission of patent law into one which protects investments rather than elevate the level of competition (see Pottage and Sherman 2010:6). Besides the two Supreme Court cases instigated by Sidney A. Diamond,¹³⁴ several important decisions have affirmed exclusion of mere abstract ideas or scientific principles from patent eligibility. The common logic of the judiciary

¹³³ The origin of the term – now a favorite for defenders and critics of American patent practice alike – seems to originate in a statement by Senator Alexander Wiley (S. Rep. No. 1979, 82d Cong., 2d Sess., 5 (1952)). It is more common today to attribute the quote to Chief Justice Burger in the infamous case of *Diamond v. Chakrabarty*, as it was here used explicitly to justify the approval of controversial subject matter for patentability (*Diamond v. Chakrabarty*, 447 U.S. 303 (1980)).

¹³⁴ *Diamond v. Chakrabarty*, 447 U.S. 303 (1980); *Diamond v. Diehr*, 450 U.S. 175 (1981)

has, on the other hand, refused to impose categorical restrictions for certain industries but rather passed conditional rejections on certain patents.¹³⁵

Court Formalization

The most frequently identified important change of the second half of the 20th century American patent system is the establishment of the U.S. court of Appeals for the Federal Circuit – simplified as the ‘Patent Court’. The Patent Court – unique among the courts of appeal in having subject matter jurisdiction and not one based on geographical location – was created on October 1, 1982, by the merger of the appellate section of the U.S. Court of Claims with the Court of Customs and patent Appeals by congressional statute.¹³⁶ The Patent Court inherited and expanded jurisdiction over appeals from decisions of the USPTO and was, in addition, given the same over appeals from federal district courts in patent infringement cases.

Virtually all researchers who have focused on the effects of the establishment of the CAFC agree that it has exhibited a continuous increased propensity to favor the rights of those who hold patents. This, in turn, has been thought to spur corporations to file and patent more applications rather than relying on trade secrecy protection.

Notable research to discover the various aspects of pro-patent tendencies of the CAFC includes the finding that this court has favored patentee’s in disputes under claims

¹³⁵ *Bilski v. Kappos*, for instance – although holding that a method for hedging losses in one segment of the energy industry was unpatentable – added that the requirement that an invention employs a particular machine or transforms an article from one state to another alone are not grounds for rejecting it (*Bilski v. Kappos*, 130 S. Ct. 3218, 561 US __, 177 L. Ed. 2d 792 (2010)). In the Court of Appeals for the Federal Circuit, Some judges expressed disapproval over the lack of categorical rejections on business methods (*In re Bilski*, 545 F.3d 943, 88 U.S.P.Q.2d 1385 (Fed. Cir. 2008).

¹³⁶ *Federal Courts Improvement Act* 96 Stat. 25 (1982), as P.L. 97-164 – April 2, 1982.

of infringements, and showed reluctance to declare patent invalidity (Henry and Turner 2006). Thus, it has been postulated that the CAFC has enhanced the value of patents and increased the incentives of patentees to sue for infringement. This findings is consistent with an earlier investigation which declared that the strengthening of patent rights from the early 1980s onwards spurred inventors to file applications in “patent portfolio races” – even in industries which would not normally benefit much from patent protection (Hall and Ziedonis 2001).

The fact that the CAFC has been prone to uphold patent rights during litigation has also been noted by qualitative analyses of individual and important case law rendered by this court (Dreyfuss 1989; Kastriner 1991). Although they attribute international patent growth to the general political climate in the United States, two notable intellectual property scholars from Europe also surmise that the CAFC must have played a decisive role (Guellec and van Pottelsberghe de la Potterie 2007:9-12).

In a statistical evaluation of the CAFC court, Landes and Posner (2003) discovered that the moment of the patent growth in the United States coincided with its establishment. Moreover, the success ratio – measured as the proportion of patents granted in relation to the number of applications filed – also increased after the court’s creation. The same was true for the number of patent suits and lawyers specializing in patent cases.

In a broad survey of patenting trends in the United States, Jaffe and Lerner point to the growing laxity of requirements for patentability weighting on applicants. These authors too identify the establishment of the CAFC as a main cause of the development,

claiming that this court “seems to have reduced or eliminated the requirement that a patent application describe the new invention with sufficient detail to enable one skilled in the relevant art to reproduce the invention” (Jaffe and Lerner 2004:210).

Landes and Posner offer a theoretical suggestion as to the connection between the CAFC and relaxed standards of patentability. They hypothesize that a specialized court is more inclined than a court of generalists to take sides between being favorable or unfavorable toward patent holders. In the case of the CAFC, they claim, it just so happened that the choice advantaged patent holders. They intimate that a reason might be inherent to the fact that patent grant lack gradation: it is either valid or not at all. Because invalidity is such a severe sanction, it is rarely imposed (Landes and Posner 2003:339).¹³⁷

In any case, the establishment of the CAFC coincided with several pro-patent policies implemented from 1980 onward; which is not to intimate that a conspiracy was taking place: “There was no planned coordination among the legislative, judicial and executive branches in shifting U.S. policy from anti-patent to pro-patent” (Kihara 2000:175).

The most important pro-patent developments were the increased authority to the USPTO through budget increases and elevation of its status within the Government¹³⁸; introduction of the reexamination system and extension of the period for patent

¹³⁷ The proposition that specialized courts are inclined to favor parties who have the ability to reappear numerous times in trials has a long history in the Law & Society research traditions, dating back to Marc Galanter’s (1974) classical work which claimed that so-called “repeat players” are able to shift attention away from the particulars of individual cases over to the general direction of a *category* of cases (for later critiques and expansions of the “court specialization” thesis, see Grossman, Macauley, and Kritzer 1999; Haire, Lindquist, and Hartley 1999).

¹³⁸ In 1980, P.S. 96-517 created within the U.S. Treasury a “Patent and Trademark Office Appropriations Account” and mandated that all fees collected be credited to this account. P.L. 97-247 – August 27, 1982 and P.L. 98-622 – November 8, 1984 amended the fees slightly.

protection¹³⁹; legislation to promote technology transfer from universities and government to industry¹⁴⁰; and the inclusion of intellectual property in trade policy.¹⁴¹

Due to the relative importance of pharmaceutical patents, a legislative move particular to this industry from 1984 should be mentioned. It was estimated that, due to the difficulty to obtain marketing approval from the Food and Drug Administration (FDA), the average effective patent life for a drug in the USA fell from 13.6 years in 1966 to 9.5 years in 1979 (Grubb 1999:146).

This led to pressure from the research-based pharmaceutical industry for an extension of patent terms on such inventions in order to compensate for FDA procedural delays. The manufacturers of generic drugs, on the other hand, strongly opposed such reform as it would adversely affect them in the competitive market. After considerable lobbying a compromise was worked out which, on the one hand, granted patent extensions and, on the other, also made it easier to market a product for competitors after a patent had expired; the so-called Hatch-Waxman Act.¹⁴²

Despite that all these developments have served to strengthen patentee rights in America and form part of a general pro-patent trajectory in American policy in the three last decades it is important to notice that none have accompanied any significant additions or alterations of substantive patent law. If anything, a pro-patent path affirms the commitment to an ‘inventor system’ on part of the United States.

¹³⁹ P.L. 96-517 – December 12, 1980 created Ex Parte Reexamination.

¹⁴⁰ The Bayh-Dole Act, codified in Title 35, U.S.C. § 200, gave U.S. universities, small business and non-profits intellectual property control of their inventions and inventions made with federal funding.

¹⁴¹ Largely a product of the inclusion of intellectual property in the WTO agreement after the 1994 Uruguay Round Agreements Act.

¹⁴² Drug Price Competition and Patent Term Restoration Act of 1984, codified in Title 35, U.S.C. § 156.

This is noticeable given the fact that the U.S. Congress, Executive Branch, and the Supreme Court have all regularly updated patent policy since the last basic current system was created in 1952 – Congress alone has so far amended the Patent Act at least 42 times (Choate 2007). The second most important recent reform has been the Uruguay Round Amendments Act of 1995 which made changes necessary to bring American law into line with the international TRIPS agreement (Grubb 1999:23) but this primarily touches on procedural changes.

The Philosophy under Attack

From the late 1990s onward, the U.S. Congress – under pressure from the corporate lobby – finally managed to agree on legislation which would give a substantial blow to core principles of American ‘inventor philosophy’. Two notable circumstances made matters different than they were for President Johnson’s commission: the corporate lobby this time favored reform (in order to protect their commercial interests) and the USPTO wanted to change their operations (to fight a substantial backlog of applications and recover running costs).

Core aspects of the American ‘inventor system’ were once again seen to stand in the way of much-needed systemic overhaul by proponents: The practice of awarding patents to first inventors favored private persons over corporations and hampered examination efforts; the grace periods of inventors, during which they could practice their invention prior to application, created uncertainty and slowed down the path to licensing arrangements; review procedures at the USPTO were too patentee-friendly, as they

allowed patentees to redraft unjustified applications; lastly, the USPTO complained that its fees were too low to offset operational costs.

Throughout the early 2000s, proposed legislation surfaced every couple of years,¹⁴³ but each was defeated as lobbyist tore them to shreds. Against the gradually growing collective force of corporate interests stood various groups with alliances to the private inventor and smaller businesses (such as *ReformAIA* and *americasjobcreators.com*), whose political message had a clear resonance with the principles of the Founding Fathers as they had enshrined it in the Constitution and the first Patent Act of 1791.

Opponents pointed to the fact that the Leahy-Smith America Invents Act, eventually signed by President Obama on September 16 2011, would destroy the American environment for start-up companies and bring innovation to the level of European countries – the laws of which the proposed legislation mimicked. If inventors are not favored, if fees are raised, and interference proceedings conducted post-grant – the argument went – the single greatest victim would be the small business. The winners of this legislation, opponents categorically argued, would be multinational corporations which would now not have to pay consideration to the nuisance of individual inventors.

It is still too early to ascertain the full ramifications of the America Invents Act. Firstly, since several provisions will not take effect for several months at the time of writing; secondly, since those that have been implemented will only have visible impact

¹⁴³ For instance, the Patent Reform Act of 2005 (H.R. 2795); The Patent Reform Act of 2007 (H.R. 1908, S. 1145); The Patent Reform Act of 2009 (S. 525/S. 610/H.R. 1260) – all of which were eventually defeated but several provisions of which reemerged in the successful Leahy-Smith America Invents Act of 2011.

after some time; and, indeed, thirdly, because there is an issue of constitutionality surrounding the most contested provision of the bill. Also, the bill gives the USPTO to adjust fees in accordance to its operating costs, which means that the extent of price increases will take time to show and will, in any event, be far lower than those in Europe.

The U.S. Constitution, Article I, section 8, explicitly mandates that “inventors” shall have the right to the patent, not the one to apply for one, whereas the legal change will make the date of publication – in most cases, the actual application – which opens the door for subsequent users to patent the invention. The proposed law maintains the wording that only the inventor has the right to an invention, and so calls the new system “first-inventor-to-file” to position itself between European style “first-to-file” and traditional American principle of “first-to-invent”. However, critics argue that this detail is merely lexical and that the new system introduced is indeed a “first-to-file”.

There is certainly some truth to this, as the traditional grace period is removed and originality is no longer grounds for patent revocation. But American law will retain a form of grace period for inventors provided they publish their findings, in which case that publication marks the effective date of inventing.

In any case, the America Invents Act has diluted a substantial part of its ‘inventor philosophy’, but this has mostly been confined to one of the three characteristics of this philosophy. The end of “first-to-invent” distances U.S. patent law from its focus on the idea, something which marks a significant departure from its traditional practice.

However, the bill does not make the system less adversarial (apart from the originality

suits, which were few in any case), and – more importantly – it does nothing to restrict the range of patentable subject matter, or its ‘technological inclusiveness’.

Moreover, the fact that the drafters took care to distance the new eligibility requirement from European “first-to-file” (by interjecting “...inventor...”) – apart from its actual practical consequences – shows the importance of national pride and tradition even in one of the most successful campaigns against the U.S. patent system.

Summary

The history of patent law in America has been one of gradual and continuous procedural elaboration, much to the effect of a gradual corrosion of the original ‘inventor philosophy’. This philosophy, on the other hand, has remained intact at the core, even during periods when it has clashed with political ambition and perceived need for reform.

As shown, the American judiciary has been decisive in specifying the laws, in creating legal concepts, and creating the environment wherein which new patent practices have grown, an endemic feature of the Common Law tradition of the United States. From a tentative registration system based on the adoption of individual acts by the state legislature for each separate patent granted, the system has grown to one with in excess of half a million yearly applications to the USPTO today.

What is interesting to note is the durability of the initial substantive laws and general political ideology underpinning the American patent system throughout its two-hundred-year life-span. Major changes, both from within the system – either by legislative change or restructuring of the judiciary – or from without – caused by drastic

technological change, new strategic uses of patents by industry, collision with other legal areas, or international developments – have not altered the fact that the system of United States has continued its reliance on an ‘inventor philosophy’; the system originally created by this country and onto which it is the only country in the world to be based on today.

This philosophy had its origin in an explicitly anti-monarchical revolution which sought to secure individual rights at the same time as it wanted to further national interests in the field of industry and technology. As intellectual property rights resonated with these goals, a transformed version of an older system of royal patronage could be introduced at the core of the new nation’s industrial policy.

Procedurally, little of the original American ‘inventor system’ is visible today, yet the core of its philosophy has survived. Such persistence is either a matter of institutional lag or the continual support for a basic legal philosophy. This issue will be explored further in chapter 8 after the alternative ‘invention philosophy’ has been given its due attention – which is where the next chapter turns.

CHAPTER 7 – EUROPEAN HISTORY: ‘INVENTION PHILOSOPHY’

The culture of Europe arose from the encounter between Jerusalem, Athens and Rome – from the encounter between Israel’s monotheism, the philosophical reason for the Greeks and Roman law.

– His Holiness Pope Benedict XVI

An Exceptional Law

Despite its universal commitment to the Christian faith, Europe in the early modern period was characterized by political and legal fragmentation – in stark contrast to the legal, linguistic, military, and political unity the Roman Empire had brought to the region half a millennium before. In 1500, about 1,500 states occupied the continent, frequently clashing with each other in violent conflict of varying duration (Merriman 1996:5). A history, such as this, which traces the origins of a European philosophy of the patent right is therefore faced by a dual challenge: firstly, the different, at times *very* different, logics must be accounted for; secondly, the reason as to why they eventually were spliced together must be explained.

Obviously, since patent law belongs to the industrial area of jurisprudence and legislation, it spread throughout the European continent in pace with the industrial revolution. However, as John Nef (1963:151) explains, the industrial revolution initially brought Europe further apart and created chasms between regions based on their relative successfulness and timing of industrialization. According to Nef, the informal economic community between European states was temporarily set back as a consequence of earlier industrialization in England and Holland than elsewhere on the continent. Still,

fragmentation seems to have been a prerequisite for the emergence of patent law in the first place.

The fact that the industrial revolution intensified economic competition between states and increased political variation only increased the already present polycentrism of Europe, and this polycentrism was a necessary precondition for the emergence of the patent institution; patents originated uniquely in Europe (see North and Thomas 1976), and it has been pointed out that the absence of any notions of ownership to ideas in non-Western, as well as pre-modern societies is “striking” (Hesse 2002).

Originally, monarchs used patents for inter-State economic competition by peaceful means, and the European political mosaic of the early-modern period – with a vast number of small states confined to a small geographical area – was a fertile ground for the development of creative political arrangements. City limits and state borders at the time were unstable and traders and craftsmen were. Patent privileges were attempts to profit technologically and commercially from the skills of this nomadic workforce by mooring them to a specific location.

In terms of legal traditions, all of Europe at the dawn of industrialization shared ancestry in Roman law. From its codification around 150 B.C.E., Roman law had held individual rights to land ownership to be superior to other charters in its body of laws. Furthermore, Roman law – and the Roman law *Digest*, subsequently – distinguished possession from property, with the latter enjoying higher legal status (Pringsheim 1944). It did not, on the other hand, make any provisions for intellectual property. Not until North Italian principalities began protecting the expertise of their craftsmen – particularly

in its trade of glassblowers – was such a type of ownership developed. The fact that this practice spread rapidly on the continent signaled the dwindling power of traditional legal principles, such as those of Roman law.

Despite the apparent individualistic character of patent law, the first patents of the Renaissance period were not conferred to honour individual accomplishments *per se*. Historians of intellectual property notice that this particular type of law did not emerge spontaneously through the seeds of the legal traditions of Europe, but was the result of “deliberate interventions by political authorities” (Bouckaert 1990). What were these interventions meant to accomplish? – Originally, the intention was to curb royal practice rather than guarantee individual inventors’ rights.

The first patents did not function as a form of law, but as an *exception* of it; as a personal contract, selectively signed by a monarch or other pre-democratic political authority on behalf of a city-state, country, or personal regal interest. Among these could be the desire to amend some local technical problem, as, for instance, in 16th century Venice where virtually all patents issued reflected a desire to aid some local technical problem of the city (Braudel 1981:433–434). At other times the intention was to benefit some ruling groups, primarily in efforts to attract a foreign inventor to move to and work in the country in exchange for exclusive rights to his commercial exploits (May and Sell 2006:53).

In fact, early systems for ownership to ideas did not discriminate between various forms of intellectual property, and often referred to any such arrangement between inventor, company, or author and monarch as a ‘privilege’ or ‘monopoly’. From a

modern perspective, it undoubtedly seems odd to award exclusive rights through patents to the printing and sale of choral music, as Queen Elizabeth I did to composers Thomas Tallis and William Byrd or on the trade monopoly for imports from a certain region, as *The East India Company* received from the British Crown in 1600.

The early privileges were similar to modern patents only in name, and shared none of their defining features. Firstly, privileges did not discriminate between technical and artistic creations, such as modern law does between copyrights and patents, respectively. However, this must in part be attributed to the fact that painting, sculpture, and other artistic works were considered ‘mechanical’ creations until the late medieval period (see Merriman 1996:71). Secondly, invention and originality were not prerequisites of ‘privileges’ which were just as often used to attract foreign craftsmen as to stimulate the work of those at home.

Gradually from the early 16th to the late 18th century, patents were ideologically transformed from privileges granted to selected individuals by monarchs to a social pact between inventors of technical solutions and society (Mossoff 2001). In other words, patents became part of the body of national laws, and not merely a matter of royal prerogative. As patents gradually began targeting technical invention exclusively, the idea of ‘inventorship’, or, ‘the act of inventing’ had to be solidified. That is, some minimal idea of desert for ownership had to be articulated.

Although the first move away from royal prerogative to ‘individual desert’ occurred in England with the 1623/1624 *Statute of Monopolies*, it is unreasonable to attribute the genesis of modern patent law principles entirely to it, or even solely to

political considerations more generally. Contrary to the popular ideas of originality as a notion which emerged only after the renaissance, the practice of identifying inventiveness, both of thought and mechanical device, was already commonplace in the guild and academic circles of the middle ages (Merton 1957). The philosophical groundwork for such notions of 'inventiveness' and 'creation' had been laid in academic circles, which were not attached to specific geographical locations, and legal reformers drew from this international ideological reservoir when they formalized patent principles nationally.

But until the French revolutionary assembly declared the inalienability of individual rights, the justifications for patents were politically pragmatic and wrought out of compromise: "patent protection grew out of a practical need; theoretical justification came later and varied according to time and fashions of thinking" (Vojáček 1936:3).

As the nature of this "practical need" was to outrun neighbouring countries in the mechanical arts, patent law was focused on national and international affairs simultaneously. The distribution of patents to the first importers of products, practiced by most European states until the mid-19th century, was a vestige of the international competition out of which patents grew. European states were happy to grant privileges to private persons as long as this helped them in industrial competition with neighbours. But as long as monarchs alone decided who were to obtain patents, they were prone to do so recklessly. A major reason for reckless granting of patents was the fact that monarchs could rely on patents as a source of income (through charging patent-holders harsh fees) which was not plagued by the unpopularity of taxes. The oldest continuously existing

system was the result of a political response to precisely this problem. The “practical need” perceived by the Parliament of England in the early 17th century was to restrain the King’s frivolous issuance of patents.

At the dawn of the modern era, European nations were separated by newly formed (and forming) states involved in commercial competition alongside occasional warfare. Patents became political tools in the pacific part of this inter-state conflict. The modern patent systems, on the other hand, developed domestically as responses to the uses of patents by monarchs. Whereas the conflict which created the emergence of patents was international, domestic dispute reshaped the law and sowed the seeds from which modern patent law later grew.

Exception to Exclusion

The British 1623 *Statute of Monopolies* is most often identified as the legal forerunner to all current patent systems. The statute reads that

All monopolies and all Commissions, Grants, Licences, Charters and Letters Patent . . . are altogether contrary to the Laws of this Realm

Patents for the “Manner of new Manufacture” to the “first true Inventor or Inventors” were the only exclusion to this general prohibition laid down by the statute. The act was part of a general campaign against monopolies (Cornish 1993). Due to the many patents which inhibited commercial activity in England at the time, monopolies were widely unpopular with the public – in particular with the guilds. Patent law is today

contrasted to the alternative of trade secrecy (for instance Landes and Posner 2003). As guilds relied on the latter (Long 1991:870), the *Statute of Monopolies* can be seen as a partial victory of trade secrecy regimes against patents. With the support of the guilds, Parliament was quickly successful in its effort to abolish monopolies, though with patents to inventors as an exception to the rule (see Letwin 1954).

But although they were retained, patents after the 1623/24 statute were much more restricted than earlier. This restriction was obtained in two ways by the statutes: by allowing only Parliament to issue them, and to permit only the person first to conceive an idea to obtain them (Machlup and Penrose 1950:2).

The 1623/24 statute has since served as the foundation for the patent systems of New Zealand, Australia, and, until the British 1977 *Patent Act* which harmonized English patent law to that of the EPC, it also served as a basis for that country's patent system. In addition, and although some debate surrounds its actual impact, it also had an effect on the Constitutional inclusion for intellectual property law in the newly liberated American colonies (see chapter 6). With the 1710 British *Act of Anne*, protection of the commercial rights of book printers was established in England; with the effect that patent and copyright law were separated under the law. However, the rights were still construed in 'monopoly' terms, as the wording of the 1623/24 statute, and indeed, economic reasoning, would indicate.

Virtually nothing happened in England to the system created in 1623/24 for nearly 200 years. That is not to say that patents in England were not subject to complaints; far from it. Only, complaints were not directed against patents and their misuse but targeted

the clumsiness of the procedures leading to their grant. Even Charles Dickens chimed in with the chorus with his *A Poor Man's Tale of a Patent* which derided the Byzantine and burdensome steps English applicants were subjected to. Major reform did not occur until 1883 when costs for English patents were lowered and publication practiced was changed (Dulken 2001:9).

Ideas as Property

The first steps towards an understanding of patent rights as 'property' came with the two revolutions of the Enlightenment; the American and the French. However, not only did the two countries make the leap towards a property ideology in marginally divergent directions, but also from slightly different philosophical stepping stones. Much of the intellectual debate surrounding intellectual property on the European Continent centred on authors' commercial and moral entitlements to their writings; that is, to what would eventually become copyrights laws (see, for instance Hesse 2002).

Despite their many apparent differences – the one being anti-colonial, the other internecine – the American and French revolutions were similar in their approaches to individual entitlement and in their implications for matters of intellectual property (Ginsberg 1990). Both, almost simultaneously, established the first two modern patent systems of the world.

The 1791 French Constitution was revolutionary in both origin and content. Although it secured the Monarchy, it did so by limiting the powers of the Crown and enforcing stronger entitlements to citizens vis-à-vis the State. It guaranteed the

“inviolability of property” (*“l’inviolabilité des propriétés”*)¹⁴⁴, but – as far as ownership to inventions and creations – the text gives only a vague hint that “the King has patent letters, warrants, and commissions delivered to public functionaries or others who are to receive them”¹⁴⁵.

The Constitutional assembly did, on the other hand, also pass a separate patent act. The preamble of this law states that the assembly considers it a violation of “human rights in their essence” not to regard an industrial discovery the “property of its creator”¹⁴⁶ – an assertion reiterated in the first article of the same statute which reads:

Any discovery or new invention, belonging to any branch of industry, is the property of its creator; consequently, the law guarantees their full and complete enjoyment [of this right], in accordance to the conditions and time herein specified.¹⁴⁷

The very notion of though-property carried both philosophical and political undertones (see Machlup and Penrose 1950:26). Philosophically, it linked creative activity to the Rousseauian tenet of the ‘social contract’ as a bilateral relationship between the state and citizens: creative individuals would publicize the secrets of their genius in exchange for commercial benefits.

¹⁴⁴ Title I.

¹⁴⁵ Title III, Chapter IV, 3: *Le roi fait délivrer les lettres-patentes, brevets et commissions aux fonctionnaires publics ou autres qui doivent en recevoir.*

¹⁴⁶ Décret sur les inventions & découvertes en tout genre d’industrie, January 7 1791: ... & que ce seroit attaques les droits de l’homme dans leur essence, que de ne pas regarder une découverte industrielle comme la propriété de son auteur...

¹⁴⁷ Art. I: *toute découverte ou nouvelle invention, dans tous les genres d’industrie, est la propriété de son auteur; en consequence, la loi lui en garantit la pleine & entière jouissance, suivant le mode & pour le temps qui ferons ci-après déterminés.*

One important and lasting legacy of the French ‘social contract’ interpretation of patents was to establish the prerequisite of disclosure of the detail of an invention in return for temporal protection. At the same time, politically, it served to do away with all notions of monarchical privilege by creating universal eligibility based on objective criteria, not solely on subjective judgment. The somewhat unintuitive ramification was that examinations for eligibility were abolished in the French patent law, as such were regarded as intrusions into the natural rights of private citizens (Hilaire-Pérez 1991:930–31)

In sum, the first patent law of France endowed patentees with property rights to the ideas they discovered and thereby vested their possession with the ideological power and sanctity the natural law tradition had ascribed to basic human rights. This notion was explicated in a testimony before the Constitutional Assembly before it passed the first patent law, given by Chevalier de Boufflers wherein he averred that

Man possesses but one true possession, namely his thought. It is his unassailable possession, it is personal, it is independent, it exists before all transactions. It is less logical to attribute a tree that grows on a field to the owner of the field than it is to ascribe an idea to the spirit of its creator. Inventiveness, which is the source of all art, constitutes a primordial property; all others are but conventions.¹⁴⁸

¹⁴⁸ *S’il existe pour un homme une véritable propriété, c’est la pensée; celle-là du moins paroît hors d’atteinte, elle est personnelle, elle est indépendante, elle est antérieure à toutes les transactions; & l’arbre qui naît dans un champ n’appartient pas aussi incontestablement au maître de ce champ, que l’idée qui vient dans l’esprit d’un homme n’appartient à son auteur. L’invention, qui est la source des arts, est encore celle de la propriété; elle est la propriété primitive, toutes les autres ne sont que des conventions.* “Rapport fait à L’Assemblée Nationale”, *Comité d’Agriculture et de Commerce*, December 30 1790.

Of more technical importance was the fact that the first French law created the principle that the patent application had to contain a description of the invention which would permit the reproduction of it. The law stipulated that an inventor who concealed the “true means of implementation” of his invention would be stripped of his patent.¹⁴⁹ Although the French system would later degrade to a registration system until examinations were reintroduced through European cooperation, its introduction of the ‘disclosure’ requirement has been of lasting importance and, today, serves to justify all patent systems of the world.

After the brisk overture, the ensuing sound of French patent law quickly dimmed. With the abolition of the Monarchy in 1793 and the institution of the Republic, all mentions of patents disappeared from the ratified or proposed constitutions in the revolutionary era. With the imperial First Republic, a provision was made for copyright-like matters in the Constitution of the Year XII from 1804, although in a circumvent and restricted manner:

Authors, printers, or book sellers who believe that there is ground for complaint over restrictions placed upon the printing or circulation of a work can have recourse directly and by way of petition to the senatorial commission of the liberty of the press.¹⁵⁰

The honeymoon ended when the patent institution met with the harsh realities of academic discourse, with opposition launched from philosophers, politicians, economists,

¹⁴⁹ Art. 16, I: *Tout inventeur convaincu d'avoir, en donnant sa description, recélé ses véritables moyens d'exécution, sera déchu de sa patente.*

¹⁵⁰ Title VIII, 65: *Les auteurs, imprimeurs ou libraires qui se croient fondés à se plaindre d'empêchements mis à l'impression ou à la circulation d'un ouvrage, peuvent recourir directement et par voie de pétition à la commission sénatoriale de la liberté de la presse.*

and many industrialists alike in what has been dubbed the “anti-patent movement” of the mid-nineteenth century (see Machlup and Penrose 1950 for overview).

The ‘desacralization’ of a term once vested in doctrines of natural law is illustrated in the very wording of an attack by the influential nobleman and writer Benjamin de Constant (1818:296) who titled his pamphlet “On the Kind of Property One Calls Intellectual” (“*la propriété qu’on a nommée intellectuelle*”) – de Constant himself certainly not among those favoring that appellation. His general criticism was motivated by his assumption that “property rights” are intended to guard citizens from excessive government interventions, something that cannot be said of *intellectual* property rights – which exist solely by intervening government and which, according to de Constant, serves only to protect the reputation of vain individuals.

The next 1844 patent act, written under the death pangs of the July Monarchy – incidentally, also during Karl Marx’s sojourn in Paris and intellectual awakening – expresses this new and prosaic understanding of patent rights. Although the term “property” was retained, its employment betrays an altered interpretation of its significance: instead of characterizing a person’s relationship to an idea it now identified the *patent letter* as the possession in question (*de la propriété de son brevet*).¹⁵¹ The general edict was that patents conferred “exclusive rights to exploit the invention or discovery for profit” to holders.¹⁵²

¹⁵¹ Art. XX; also, Art. XXIV: *à la propriété des brevets*; Art. ILVI: *à la propriété dudit brevet*.

¹⁵² *Loi sur les brevets d’invention*, Art. I: *toute nouvelle découverte ou invention dans tous les genres d’industries confère à son auteur, sous les conditions et pour le temps ci-après déterminés, le droit exclusif d’exploiter à son profit ladite découverte ou invention*.

Furthermore, the inclusive eligibility of “any branch of industry” was now abated by restrictions on particular types of technology, namely, pharmaceutical products and drugs and business methods.¹⁵³ Little was done semantically – and even substantively – to alter French patent law until France committed itself to European regional integration in the mid-20th century.

With France out of the way, America alone upheld the ‘inventor philosophy’ of patenting. England – despite being under the duress of anti-patent movement for decades of the 19th century – eventually continued with its pragmatic system created through the gradual and fragmentary increments of reform characteristic of all English legislation.

For a long period, Europe in the 19th century seemed destined to abolish all national patent systems – as indeed Holland did in 1869 (reintroduced in 1912) – or not have one at all – as Switzerland refused to until 1888. Attacks on the legitimacy of monopolies were not new to patent policy; indeed, the oldest surviving system of England has been created in an attempt to curtail them. This time, however, the critics thought that only wholesale destruction of the institution would correct inefficiencies and misuses.¹⁵⁴

The anti-patent movement received strength from many sides. Increased international trade through reductions of other protective tariffs made patents seem as isolated obstructions in the transnational commercial sphere. Undoubtedly, though, the waning importance of mercantilist principles at the time, at least partially enabled by the

¹⁵³ Art. III.

¹⁵⁴ The description of the patent controversy of the 19th century follows that of Machlup and Penrose (1950), the most authoritative analysis of it to date.

fact that states had been joined by large national companies in international industrial competition and trade, also played a role. In any case, many of the strongest antagonists were industrial magnates who desired to operate uninhibitedly. Several major innovators weighed in and petitioned their national politicians to abolish patents as they were seen to impede industrial growth.

As patents had always received political support due to their ability to stimulate industry, the campaign against them from industrial magnates (such as Macfie and Brunel in England) was taken seriously by governments. The objectives of industrialists were primarily pragmatic but nonetheless managed to garner the support of many academics and economists whose philosophy was less permissive of selective monopolies during the period of democratization than the older masters, such as Adam Smith¹⁵⁵, Jeremy Bentham¹⁵⁶, and John Stuart Mill¹⁵⁷ had been.

By 1869, the movement had received sufficient momentum for the *Economist* to report that “It is probable enough that the Patent-Laws will be abolished ere long” and the *Times* that “the day is at hand when this branch of our legislation will be wiped out of the statute-book”(quoted in Saint-Amour 2003:58).

Even though the battle appeared to be won in the 1860s, the advocates of the patent system organized a massive counteroffensive:

¹⁵⁵ In *The Wealth of Nations* Smith described patents as a necessary evil to reward risk and expense of inventors.

¹⁵⁶ Bentham declared that privileges given to inventors “has nothing in common with monopolies which are so justly decried” (“Observation on Part of the Declaration of Rights, as Proposed by Citizen Sieyes”).

¹⁵⁷ In Mill’s view, “the condemnation of monopolies ought not to extend to patent...” (*Principles of Political Economy*, Book V, Chap. X).

New societies for patent protection were formed, resolutions were drafted and distributed to the daily press, speakers were delegated to professional and trade association meetings, floods of pamphlets and leaflets were released, articles were planted in trade journals and reproduced in daily papers, public competitions were announced with prizes for the best papers in defense of the patent system, petitions were submitted to governments and legislatures, international meetings were arranged, and compromises were made with groups inclined to endorse liberal patent reforms.

(Machlup and Penrose 1950:5–6)

Conflict and Resolution

France – the country that had created the first modern patent law simultaneously with the United States – experienced the climax of the patent controversy. Being home to the Napoleonic Code and its emphasis on legal consistency, French dispute took on a particularly didactic and intellectualistic character rid of concerns for economic pragmatism or expediency. Whether patents should be permitted or not, in France, hence continued to be a question of fundamental ‘rights’ rather than one of custom or political expediency (see Passy 1854).

More than anywhere else, the patent issue hence remained a question of philosophy and logic in the French language; expressly, the degree to which intellectual property could be seen to resemble physical property. Proponents of patents saw an identity in that mental acts are the creation of individual efforts in the same way property – at least originally – is brought about by labor and physical effort. France at the beginning of the 19th century practiced a ‘registration system’, which meant that there was no examination of claims or inventorship by the patent office. This should not be attributed to administrative ineptness or frivolity; as Drahos explains, “[a] registration

system probably best fits a natural rights justification for patents” (Drahos 2010:34) – which, since the revolution, had held a firm grip on French political thinking.

One fundamental problem of this understanding was the question of duration. If, as the advocates argued, intellectual property was no different from physical property, there were no logical grounds for limiting their duration or legal status or even against making patents hereditary. Indeed, French proponents had already begun calling for unlimited patent life. Many critics argued against this view by countering that ideas do not have the same permanence as objects (Coquelin 1852). A third group, somewhat informed by the English Granville commission of 1851, called for the replacement of patents by a prize system (Chevalier 1862).

Of the most vociferous defenders was the Belgian professor Jobard who coined the term “*monopole*” (to define the fundamental right to patents) – the right to dispose of personal creations. Interpreted in this way, Jobard claimed, the right was not extended to the idea itself but solely to its materializations (Jobard 1854). The contours of new alternative understandings were therefore evident in French discourse: patents were either justified as the rights of a person or as the rights to something. Extant patent systems were based on the former, and Germany would soon found a system on the latter, but, in France, the issue remained one of the existence of the system itself and no decisive philosophical agreement were reached at the time.

Internationalization

The patent wars had been civil wars but victory for the pro-patent side came for international reasons. The pro-patent camp was able to organize across national borders and, more importantly, no country (with the exception of Holland) wished to be the first to abolish its own system. The fact that American industry was rapidly expanding at the time made European states cautious with the result that all forsook radical abolishment and made the conservative choice of reform. As long as America kept its system intact, Europeans would do the same. While the anti-patent movement possessed the strongest philosophical arguments, the pro-patent held the upper hand in terms of politics and practical feasibility. It was the latter which proved decisive in saving the patent institution.

As the patent institution steered out of crisis one thing was clear: it had to be based on a new political alliance, one between the state and chief industrialists. The latter were less likely to espouse human right concerns for patents and would attempt to reshape the system to favor corporations over individuals. The new patent alliance was to materialize most solidly in Germany with its first national patent system – the later influence of which can hardly be exaggerated.

France, in the midst of national intellectual disputes over patents, would direct its power internationally. The United States too endorsed international steps toward technology protection laws, though American concerns specifically targeted piracy on its assets. As with the English, the French at the second half of the 19th century was growing concerned with the increasing American technological presence and thought only international cooperation could stem the tide flowing from across the Atlantic. Due to its

diplomatic ties— French was still the *lingua franca* of international relation – it was capable of coordinating the first international efforts at patent law harmonization.

Paris 1883

The first international patent treaty was signed in Paris in 1883, later known as the Paris Convention. While economists and intellectuals debated the philosophical grounds for intellectual property protection, corporate technology management had become international in scope. New industries had begun emerging in the mid-19th century which knew no national borders in production or sale; for instance chemicals, electric power, and telecommunications. Patent laws were seen to conflict with international trade liberalization, and discrepancies between national laws were seen to pose a risk to domestic industry.

Not only long-term industrial consequences were at stake, though; during the long peace between Napoleon's defeat and the assassination of Archduke Franz Ferdinand, interstate war had mostly been sublimated into fights over spectacle and impression. The many international exhibitions were sites where nations met to intimidate and inspire each other with awe over domestic industrial accomplishments.

Exhilaration was the sole reason for attending; the international exhibitions were also the sites for vast technological piracy. If nothing was done to implement legal protection the U.S. delegation threatened to abstain from the 1873 exhibition in Vienna. To assuage American concerns, the Austro-Hungarian government agreed to organize an international conference during the exhibition to discuss solutions to the problem of

piracy. No laws or treaties followed from the meetings, but the Vienna congress served to affirm the moral necessity of patents as a natural right and the need for international legislation to further its protection (Kranakis 2007:696).

Although no diplomatic conference was summoned that time either, the 1878 Paris exhibition became the occasion for the first meeting with an explicit pro-patent agenda. Under the patronage of the French government, the single largest group of participants consisted of French industrialists interested in stronger patent protection – the echoes of their intellectual compatriots’ philosophical cries against patents now but dimly heard, if at all.

The Paris convention in 1878 was partially the successful conclusion of persistent efforts of the pro-patent lobby, but political support for international cooperation would not have been attained had it not been for internationalization of production and marketing. (Kranakis 2007:696). Patentees were increasingly using patent systems internationally and political leaders desired to protect domestic industry by pushing for international legislation and coordinate national patent laws. The inadequacy of existing laws was felt particularly well in France whose patent system was not on level with most other major country. Under French leadership, the different national governments finally agreed at some procedural measures in order to bolster the patent institution. A draft treaty was penned in 1880, finalized and signed after the Paris Convention in 1883.

The Paris Convention is more noticeable for its omissions than for what it did stipulate. It did *not* address issues of domains of patentability, criteria for novelty or inventiveness, examination requirements, or obligations of patentees with respect to sale

or licensing. In other words, it did not specify the type of system the signatories should adopt. In fact, the Paris Convention did not establish any substantive patent laws or even demand that member states alter their own.

That is not to say that the Convention was inconsequential; far from it. Ideologically, it served as a written declaration of international recognition of industrial property and, in that way, tabled the discussion as to the existence of patents permanently. Secondly, it required recognition of international aspects of patenting and put in place procedural laws to accommodate these.

There are in particular three areas of the management of applicants which the Paris Convention addressed; discrimination against foreign applicants, the problem of prior public disclosure, and the problem of patents on mere importation. All these problems were reconcilable because they affected all countries indiscriminately. This meant that it was possible to find common ground and harmonize national laws accordingly.

With regard to these areas, the convention required all member states to treat citizens and residents of all member states like its own with regard to industrial property laws. Public disclosure was handled with a requirement that a patent application in one member state counted as a priority date for subsequent applications in other member states provided the applicant filed ensuing applications within the span of six months (later extended to twelve months); neither use nor disclosure of the invention during this so-called 'grace period' could invalidate the priority. Finally, the convention ordered that

a patent in one country could not be revoked simply because goods produced under it were imported from another country.

By including provisions for periodic revisions – which were conducted several times up to World War II – it is fair to say that the treaty also made the international diplomatic community on patent issues permanent. This community was institutionalized with the establishment of *Bureaux internationaux réunis pour la protection de la propriété intellectuelle* (abbreviated BIRPI) in 1893, based in Bern, Switzerland. BIRPI, established to administer both the Paris Convention and its sibling treaty for the administration of copyright law internationally (the Bern Convention of 1886), would serve as the international organ for all international issues of intellectual property until it was replaced by the World Intellectual Property Organization in 1970.

Apart from setting the stage for international cooperation in matters of patenting and thus ending the question of patent abolishment, the Paris Convention was of little philosophical consequence. Patent law was still a matter of national law, and international coordination limited itself to questions of procedural nature. The various member states all had a system loosely based on the ‘inventor philosophy’; whether in pragmatic form, as in England, strongly ideological, as in France, or somewhat of a mix of the two, as in the United States. An alternative philosophy did, however, develop around the same time, but it did so within the confines of the newly set borders of a young state.

Sonderweg

The first ‘invention system’ emerged from the settling dust of the 19th century patent war; in Germany where the late nationalization made possible the adoption of an entirely new type of system. The German philosophical tradition did not develop out of Rousseauian principles of natural law and social contract but adhered to the analytic rigidity of Immanuel Kant which posited a clear separation between art and technology.

Moreover, German technology was not as integrated with the capitalist system as in other countries – notably the United States. One important reason was a resistance on part of technical schools in nineteenth-century Germany of becoming the handmaiden of capitalist industry which, in turn, stemmed from its identification of classical German *Bildung* and *Kultur* (Gispen 2002:4). It had proven difficult to fuse enterprise, technology, and human rights ideology in German politics. It should therefore not come as a surprise that the anti-patent movement had plagued German industrial discourse at least as much as anywhere else.

However, Germany was simultaneously moving towards national unity which meant that the issue was not about patent abolishment but of considering whether or not to adopt a national patent system for the whole confederacy – an issue which had never been resolved during the commercial union of German states under the customs union of the *Zollverein* (Machlup and Penrose 1950:3). True, there were patent laws on the books in many states, such as Prussia (since 1815), Bavaria (1825), Württemberg (1828, Hessen (1820), Hanover (1847), as well as others, but the patenting activity was disproportionately low everywhere in Germany, at least considering the importance of German industry (Vojáček 1936:144).

Prussia, which had lead the North German Confederation and played an important role in the German Confederation before that, would exercise the dominant political influence as the unified states were elevated to the German Empire in 1871. However, the Prussian government, including Chancellor Bismarck, initially decided against adoption of a patent code for the German Empire. Before national unification, the majority of patent laws in the various German states did not demand public disclosure, something which exposed inventors and entrepreneurs to the dangers of involuntary infringement and contributed to industrial secrecy (Gispen 2002:26).

If anything, the soil from which the arguably most influential patent law emerged can only be seen as an confirmation of the quip ‘advantage of being disadvantaged’ brought to the level of legal history – even more so since German unification coincided with the long 1873-1879 depression which plagued the country’s industry for nearly a decade but, without which, the pro-patent lobby would not have been successful (Gispen 2002:27).

Unlike the loose, academic, and international anti-patent movement, the German lobby which sought to secure a new national patent law was small, tightly organized, and consisted of powerful industrialists. The most prominent was Germany’s greatest living inventor at the time, Werner von Siemens, the head of the Siemens electrical company. Siemens was well aware of what he was up against; as he admitted in a letter to his brother Karl in the 1860s: “I have started a big fight against the entire free-trade community which wants to eliminate [patent] legislation from the world.” Going on to explain his motivations:

I will not deny the importance of patent law to my own life. A patent I obtained, as a penniless man in England 25 years ago, gave me the means to devote myself to scientific and technical efforts and, hence, switch from a military to an industrial career. I am therefore under a duty of gratitude to care for young and penniless engineers by securing for them the same path with which I was once blessed.¹⁵⁸

This idealism he confided to his brother was, however, not at all echoed in the actual proposals for patent law submitted by von Siemens in his attempts to sway the legislature. It is impossible to assess the relative importance of idealistic and pragmatic motivations for von Siemens, due in large part to the fact that he, at this time, had a huge commercial stake in patent protection as Germany's leading industrialist. Both practical concerns and idealism probably incited him in his persistence.

In 1863, acting as a representative of the Elders Quorum of Berlin Merchants (*Ältesten-Kollegium der Berliner Kaufmannschaft*), von Siemens was given the chance to submit a report before the Chamber of Commerce of the Prussian Government on the usefulness of patent protection. The memo submitted was to become the basis for the patent legislation of the German Empire – which was, hence, at the time frequently referred to as the “Charta Siemens” (Gispén 2002:29).

The justification for patent protection in von Siemens's memo (quoted at length in Feiler 1936) was divested of all natural law assumptions about the right to property or

¹⁵⁸ *Ich habe einen großen Kampf begonnen gegen die ganze Freihandelsmeute, welche die Gesetzgebung in der Welt beseitigen will [...] Ich will nicht leugnen, daß die patentgesetzgebung für meinen Lebensgang von hoher Bedeutung gewesen ist. Ein Patent, das ich vor etwa 25 Jahren als junger mittelloser Mann in England nahm, gab mir die Mittel, mich wissenschaftlich-technischen Bestrebungen ferner zu widmen und die militärische Laufbahn mit der technischen zu wechseln. Es ist daher für mich eine Pflicht der Dankbarkeit, nach Kräften dafür zu sorgen, daß jungen mittellosen Technikern auch künftig der Weg offen bleibt, der mir ein segenreicher war* (quoted in Feiler 1936, my translation)

fruit of one's labor. Individual privileges, he explained, are subordinate to the higher good of national interest and national industry. The interest of inventors is an appropriate subject for legislation only insofar as it is required by the interest of industry and, in case of conflict between the two, the latter must always receive priority. In order for national industry to flourish and progress, inventive activity was necessary, according to von Siemens, but "not as a thing in itself" (*aber nicht als Ding an sich*). This approach to patent law, by Werner von Siemens coined as the "National Economic" (*volkswirtschaftliche*) theory of patents, would dominate German legislation on the matter for nearly a century (quotes in Feiler 1936).

Through von Siemens's memo, this new 'national economic' theory of patents was decisively introduced to political debate. With the ascension of the confederation to Empire in 1871, Chancellor Otto von Bismarck himself proposed that the constitution of the North German Confederation, with small adjustments, be adopted for the new *Reich*. Von Bismarck's advice was followed, and the adjusted constitution remained in effect until the German defeat in World War I. While the near-verbatim adoption of an existing constitution was procedurally expedient, it also rejuvenated the patent debate due to the fact that it smuggled in a patent clause to the Empire: Article 4 of the North German Confederation – and, later, the Empire – had made patent law a federal matter.

However, there was still no decisive patent law and, unlike in the United States, the first German constitution did not specify the contents or patent law, nor did it justify the institution ideologically. Furthermore, and unlike both the French and American constitutions, that of the German Empire demarcated between copyrights and patents

nominally and, it seems, held “patents” (*Erfindungspatente*) in lower esteem as only copyright received the appellative honorary of “mental property” (*geistigen Eigentums*). Hence, the German patent debate was still not over.

In order to secure the future of a German patent code, von Siemens allied himself with the Association of German Engineers (*Verein Deutscher Ingenieure*) who welcomed his new ‘national economic’ interpretation of patents as a tool for the advancement of national industry since they stood unilaterally to gain from security of their intellectual assets. In government, thought, the atmosphere was still anti-patent (despite the fact that article 4 of the Constitution had survived its first and critical phase).

Fortuitously for the German pro-patent lobby, the first international patent congress was gathered during the 1873 Vienna world Exhibition, which proved that few – if any – other countries would abolish their own patent systems, no matter what became of German patent law. Von Siemens, with his brother William, attended the patent congress in Vienna and, upon returning to Germany, sought to muster new support for the patent cause by forming the so-called “Patent Protection Association” (*Patentschutzverein*) comprising important members from circles in trade and industry. Against hot resistance from the *Bundesrat* (the ‘upper house’ of the German bicameral legislature), the group wrote their own draft for the new patent law in 1876 which, when filed together with a memorandum written by von Siemens personally, received Chancellor von Bismarck’s approval (Feiler 1936). The Patent Law (*Patentgesetz*) was signed May 25th 1877 and became effective on July 1st the same year.

Invention without Inventor

The new German law fused different considerations into the most innovative patent code at the time. In line with the desires of German industrialists, it made the award of patents on eligible inventions mandatory on the state (it had been discretionary in earlier State laws); it emulated the examination as to novelty from the American Patent Law of 1836; and included the opposition proceedings from the British patent system of 1852. Together, these features made the first national German system remarkably predictable and fairly immune to manipulations.

However, in accordance with von Siemens's blueprint and new patent philosophy, the 1877 patent law took the inventor entirely out of the equation. In fact, the entire document did not mention the inventor by a single word. Instead, the law stated that

Patents are bestowed for new inventions that permit commercial exploitation.¹⁵⁹

For the first time, patent rights were assigned to the person or commercial entity responsible for filing the first application for an invention, and not the inventor himself. Moreover, it restricted the availability on industries by listing categorical exceptions to the admissibility of patent to certain classes of inventions:

Excluded are:

1. Inventions for which the commercial exploitation would be contrary to the law or to morality

¹⁵⁹ *Patentgesetz, May 25 1877 Art I: Patente werden ertheilt für neue Erfindungen, welche eine gewerbliche Verwerthung gestatten.*

2. Inventions pertaining to nutrition, pleasure, and medicines, as well as substances which are produced by chemical means, if such inventions do to relate to a particular method of producing them.¹⁶⁰

In these respects, the first German patent law was unlike any patent law thus far.

The contrast to the American patent system was particularly clear.

But there were other legal novelties in the German system. One was the introduction of renewal fees for patent-holders. In effect, any holder of a German patent had to pay for continued protection every year, at cumulating costs. This had the consciously designed effect of limiting patent-holding. German patents, at the time, were dramatically more expensive than anywhere else in the world – keeping a patent alive for its full (then 15 year) term cost 5,300 Mark which was equal to 6.5 times the annual average per capita income in Germany in 1913 (Burhop 2009:8). Moreover, the law established a ‘work-for-hire’ principle which meant that companies were entitled to many of the inventions of their employees, regardless if the employees themselves had filed the patent application. What the German *Reich* had done, with its repression of inventors and technical exclusiveness was to create the world’s first ‘invention system’ for patenting (see chapter 5).

The 1877 patent law did not eliminate debate over patent policy. The single most contentious issue would prove to be disputes between management and labor about inventing and patent rights in Germany. These kinds of

¹⁶⁰ *Ausgenommen sind: 1. Erfindungen, deren Verwerthung den Gesetzen oder guten Sitten zuwiderlaufen würde; 2. Erfindungen von Nahrungs-, Genuß und Arzneimitteln, sowie von Stoffen, welche auf chemischem Wege hergestellt werden, soweit die Erfindungen nicht ein bestimmtes Verfahren zur Herstellung der Gegenstände betreffen.*

inventions, known as “establishment inventions” (*Etablisementserfindung*) before World War I, and “company inventions” (*Betriebserfindung*) after, would eventually be eliminated by the Nazi regime with the 1936 patent reforms (Gispen 2002:33). But, importantly, all ensuing discussions centered on issues *within* patent law; no one of important political influence requested the abolition of the system entirely.

As the 19th century neared its end, the European political landscape was entering a new phase. The patent war was over, with even Holland pondering the reinstatement of its patent system, and the German system quickly established itself as the world’s most stringent and watertight. England continued its slow and reform-minded approach to its domestic legislation without paying too much heed to what was occurring on the continent. But continued French attempts to solidify its own technological position through attempts at transnational agreement and cooperation would eventually bring European patent policy to the regional level.

A New Century

At the turn-of-the-last-century, there were four dominant models for patent law in the world: one American and three European. Apart from the fact that the German system had created a new fundamental philosophy, the clearest expression of the differences at this point in time had to do with the understanding as to how the applicant had to specify an invention in order to provide sufficient disclosure to warrant protection. The variation

on this dimension was never as pronounced as at the time of the early 20th century (summary of systems in Vojáček 1936:34–36).

The reformers of the American system had already accepted the adversarial character of patents and the fundamental importance of patent claims as yardsticks for patent litigation. Claims, in the system of the United States, should comprise all essential elements of an operative combination. The number of claims needed for one single invention was therefore vast.

England, on the other hand, a combination of many practices which had evolved over the years made up claiming requirements. The written specifications should contain an approximate definition of the novel features of the invention, but also make broad references to drawings. In addition, the patent document could include so-called “omnibus claims” in which the invention was described and illustrated without any definition of its inventive features whatever.

In France – where the first resemblances of patent claims had been created a hundred years before – the *résumé* of the patent was to contain only an extract of specification which did not have the character of a binding definition of the features of the invention. Courts, at the time, had to rely on a holistic interpretation of the entire patent document to mete out the scope of a patent during litigation. At the time, it should be remembered, the French system was considered one of mere application registration.

The German *gekennzeichnet* system (“characterization” system) was structured and hierarchical. Claims were here neatly divided into a preamble giving the category of invention (*Oberbegriff*) followed by an inventory of definitions as to the new features for

which protection was claimed denoted by “characterized by...” (*gekennzeichnet durch...*).

The two opposites, the German and the American systems, were the only ones stringent enough to see international emulation. The choice of German or American claiming practices was one of patent strength and access to protection. In accordance with the ‘inventor’ (USA) and ‘invention philosophy’ (Germany) of the respective countries, the American patent was easier to obtain whereas the German patent entailed stronger rights, both of which being features that made patents attractive to industrial enterprise; only, German patents tended to fall in the hands of corporations and not the individuals who had carried out the inventive work, as in the United States.

When the U.S. Government issued a request for a global survey of the world’s patent systems in the mid-1930s, the verdict between German and American system was akin to an overall ‘tie’, particularly with regard to claiming practice: “The American system leads to prolixity. The same scope of protection for which 100 claims are necessary in the United States may be covered in Germany possibly by five to ten claims – and unduly binds the patentee” (Vojáček 1936:36).

Weimar

Within Germany, on the other hand, the system was not generally perceived as particularly just for the first half of the 20th century. The German courts begun interpreting patent claims and patentee rights flexibly, and only the outbreak of World

War I interrupted various reforms proposed to correct some of the undemocratic features of the system.

Most debates struck right at the core of the German ‘invention philosophy’, namely its disregard for individual inventors. The fact that patents in Germany was awarded to the first-to-file inventions, and did not specify nature of the legal entity to which the rights were bestowed, gave rise to discussions of so-called “establishment-inventions” (*Etablisementserfindung*) – known after World War I as “company inventions” (*Betriebserfindung*) – as most patents were granted to corporations and not its employees (Gispen 2002:32).

Notwithstanding these grudges, no major reforms materialized, not even with the fall of the imperial form of government and the establishment of the Weimar Republic. The Weimar era, although favorable to technology in terms of public expenditures for national electrification and public transportation, should be understood as an “anti-invention” phase in German history. This stems mainly from the Weimar Republics political neglect for incremental technological development and failure to politically accommodate small-scale consumer markets (Gispen 1992:396). But underneath politics, industrial forces were simmering.

Overseen by the lawyer and liberal politician Hugo Preuß, the so-called Weimar Constitution from 1919 rearranged and reworded intellectual property law into one charter, and gave express statement of the law’s intention:

Intellectual labor, rights of authors, inventors, and artists enjoy the protection and care of the Reich.

Recognition of, and protection for, the products of German intellect, art, and technical science, shall also be secured in foreign countries by international agreements.¹⁶¹

Although not all other systems were as inventor-friendly as that of the United States, industrialists from countries such as England and France never questioned the a priori rights to patents to the one person who conceived the invention; the rights to license away those rights to an employer or other third-party being a corollary right to the first.

Such was not the case in Germany where industrialists argued the impossibility to identify individual contributions in the realm of advanced technology which, they pointed out, in modern industry relied on collaborative effort and access to sophisticated equipment. Surprisingly, German workers unions also contested the individualist ideology of inventor-geniuses and advocated collectivist interpretations of all inventions, with the paradoxical effect of damping the same forces the industrialists sought to crush (Gispén 2002:40).

Nevertheless, dissenting voices were heard continuously – and finally vociferously – as the 20th century progressed; but, noticeably, it was not until the Nazi party seized power that the reformists were receiving necessary political attention. Nazi ideology, steeped in murky individualist-collectivist dogma, did uphold Siemens's 'National Economic' theory of patents which assigned to technology the role as the servant to nationalist aspirations. In order to achieve this, it introduced the notion of the

¹⁶¹ Article 158: *Die gestige Arbeit, das Recht der Urheber, der Erfinder und Künstler genießt den Schutz und die Fürsorge des Reichs. / Den Schöpfungen deutscher Wissenschaft, Kunst und Technik ist durch zwischenstaatliche Vereinbarung auch im Ausland Geltung und Schutz zu verschaffen.*

promethean industrialist genius sacrificing his effort and talent to the altar of the Fatherland (Gispén 2002:41–47). Out of this ideological fusion sprang the 1936 Patent Code.

The 1936 Patent Code

The hyperinflation of the *Deutsche Mark* in 1921-1923 had made the German public acutely aware of the dangers of debased currency. From this experience, the German reformers were more concerned with patent quality as with patent quantity. Unlike other places, increasing patent volumes were not automatically accepted as indicators of technological progress; it could equally well be the result of dropping standards at the patent office. But the economic situation of the 1930s shifted the focus to patenting rates in Germany too.

Patent fees – which had been lifted during World War I – had been reintroduced in *Weimar*, but exploding consumer prices made them effectively insignificant during the inflation years (Burhop 2009:8). As the currency was restored, patent prices grew, thus – combined with the economic hardships of the Great Depression – causing a massive drop in German patents. Restoration of German industrial output became the chief industrial concern, and patent law reform a primary objective to this end.

By May 1936 the National Socialist Government put a new patent code into law. The new law combined increased powers of state intervention with a number of social features strengthening inventor rights. Practically speaking, the new law was of little consequence, but ideologically it extended notions promulgated by Hitler himself in *Mein*

Kampf. In the words of Hans Frank, president of the Academy of German Law and future governor of occupied Poland, the new law codified Hitler's dictum that

[It is] not the mass [that] invents and not the majority [that] organizes or thinks, but in everything always only the individual human being, the person.

At the same time Frank asserted the obligation that this person "put his achievement at the disposal of the community" (both quotes from Gispén 2002:145).

The bill did, however, encounter practically motivated criticism. Göring's Air Ministry and the Army lashed out against weak provisions for issuance of forcible licenses by the state, the Ministry of Public Transportation insisted on stronger prior-use provisions, and the Finance Ministry thought the fee reductions were too generous (Gispén 2002:202).

The fact that the 1936 Patent Code¹⁶² introduced inventor rights to German Patent Law is to some extent due to its general resonance with Nazi hero-worship and worship of the individual genius. However, the text did little more than prosaically state that the rights to patents were bestowed on the inventor or his legal successor (*Erfinder oder sein Rechtsnachfolger*).¹⁶³ Even though the new patent code adopted first-to-invent principles, it accepted a weak version of it by abolishing company inventions and reducing patent fees, but not introducing searches for originality and inventor oath for being the true

¹⁶² *Patentgesetz* of May 5 1936.

¹⁶³ *Patentgesetz* of May 5 1936, Art. 6.

inventor as in the American system. Importantly, many important issues of inventor rights were left to other legislative areas, such as labor and contract law.

As German international offensive and the war drew closer, the ideological basis of Nazism begun permeating all political and social areas. Although the 1936 patent code had made concessions in that direction already, the individualistic aspect of Hitler's ideology became further strengthened. The chief concern of the German Labor Front was the further strengthening of employees' rights to just compensation for inventions made within companies. The patent code had mostly abandoned older employer privileges but not supplanted them with new rights to workers. The Labor Ministry, being in agreement with the Labor Front, made preparations for employee-inventor legislation.

Such steps were, eventually, successful, and constitute an important characteristic of current German industrial policy. However, the changes that did take place occurred *outside* of the patent law. Rather than changing the German patent philosophy additional legislation was passed to correct problems created by the patent law itself. This type of legislative specialization does not strike at the core of existing legal philosophy in one area but serves to differentiate pressure. Resultantly, the current patent code of Germany is similar to its 1936 precursor, which, again, is basically of the same ilk as the first law of 1877.

A solution to the conflict of German workers' compensation was given by Albert Speer himself who wrote ordinances which, among other things, stipulated the guidelines for the calculation of the inventor reward – in effect ending seventy years of employer discretion in matters of contract and remuneration of inventive workers. It is important to

recognize that, since these ordinances were directed at inventors as workers it only strengthened their rights within the firm from which they were hired. This is different from the solution of American patent law which protects the rights of workers irrespective of their occupational situation.

Speer's ordinances, published in the *Reichsgesetzblatt* in 1942 were intended to serve as a framework for ensuing legislation (Gispén 2002:275), something which were postponed for years with the developments of the war and its aftermath. The allied forces took control over all the productive forces of the country, confiscated all patents and other industrial publications, and divided the country into occupation zones. Materially, it was a 'point zero' for German industry, and the country had no operating patent system between 1945 and 1948. The industrial laws, on the other hand, would soon be resuscitated to the extent they could be salvaged from the wreck of National Socialism.

Indeed, patent law proved to be one legal area which could be easily purged of all past political connotations. True, the move in the direction of strengthening inventor rights with the 1936 act had resonated with Hitler's views on industrial progress – and to some extent been based on those – but there is nothing inherently 'Nazi' about inventor rights.

As the Soviet Union made it clear that the four occupation zones of Germany would not be united, the division plan into East and West was carried out in 1949. The Basic Law of Germany – originally only applicable to West Germany but today, with adjusted territorial specification, to the whole unified country – which dates back to 1949, gives general and federal provision for matters of "industrial property, copyright and

publishing” (“*den gewerblichen Rechtsschutz, das Urheberrecht und das Verlagsrecht*”).¹⁶⁴

It is perhaps surprising that the socialist German Democratic Republic – constitutionally declaring a “solid alliance to the working class” and the “socialist ownership to the means of production”¹⁶⁵ made provisions for patenting. These were, however, based on Soviet-style inventor- and innovator law and the inherited 1936 patent code was entirely scrapped in the East. Interestingly, the conditions and nature of these rights were continuously changed with East Germany’s different constitutions.

The 1949 East German Constitution specified that the “intellectual work” of authors, inventors, and artists, would enjoy the “protection, promotion, and welfare of the Republic.”¹⁶⁶ The terser commitment that the socialist State would protect the “rights of authors and inventors” was made in the 1968/1974 Constitution – echoed in the proposed, but never ratified, 1990 constitution. These rights were, however, conditional on them not being in “conflict with the interests of society”.¹⁶⁷

In the West, the 1936 code was reinstated at the behest of the western occupying powers in 1949. Both occupiers and occupied recognized the need to quickly replenish

¹⁶⁴ Art. 73. 1, 9.

¹⁶⁵ 1968 Constitution, Art. 2. 2: *Das feste Bündnis der Arbeiterklasse mit der Klasse der Genossenschaftsbauern, den Angehörigen der Intelligenz und den anderen Schichten des Volkes, das sozialistische Eigentum an Produktionsmitteln, die Planung und Leitung der gesellschaftlichen Entwicklung und den fortgeschrittensten Erkenntnisse der Wissenschaft bilden unantastbare Grundlagen der sozialistischen Gesellschaftsordnung.*

¹⁶⁶ Art. 22. 3: *Die geistige Arbeit, das Recht der Urheber, der Erfinder und der Künstler genießen den Schutz, die Förderung und die Fürsorge der Republik.*

¹⁶⁷ Art. 11. 1: *Das persönliche Eigentum der Bürger und das Erbrecht sind gewährleistet. / Das persönliche Eigentum dient der Befriedigung der materiellen und kulturellen Bedürfnisse der Bürger. / 2: Die Rechte von Urhebern und Erfindern genießen den Schutz des sozialistischen Staates. / 3: Der Gebrauch des Eigentums sowie von Urheber- und Erfinderrechten darf den Interessen der Gesellschaft nicht Zuwiderlaufen.*

German intellectual capital to facilitate rebuilding of the countries industry and markets and – as the political imprint on it was minimal – the restoration of the old patent law was considered an expedient solution (Gispén 2002:298–299). Substantially speaking the same law is the current federal German patent law.

Although it took longer, the effort originating with Albert Speer’s ordinances were also continued, eventuating in the employee-inventor law of 1957.¹⁶⁸ The implementation was directed by Senior Councilor Kurt Haertel, appointed by the new Federal Ministry of Justice. Haertel would eventually become president of the German Patent Office in 1963 and would have great impact on the establishment of a European patent system later, something which has earned him the informal title of “father of European patent law”.

With the securing of a bifurcated system, where one law covers the main principles of patenting and the labor aspects are addressed in another, the German ‘invention philosophy’ prevailed two wars and periods of vehement political conflict. Unlike the American philosophy, of simply trading monopoly for disclosure, the German approach has thus continued its legacy of more specifically trading “the right to special compensation for broad managerial control of employee creativity” (Gispén 2002:315).

Hence, in its fundamental approach to patenting, post-war Germany in essence continued the philosophical line advanced in 1877. Patents were justified primarily with reference to the invention, certain industries were rejected on moral grounds, a strict claiming and examination system served to diffuse the technical information of patents

¹⁶⁸ *Gesetz über Arbeitnehmererfindungen* of July 24 1957.

effectively, and high and cumulative maintenance fees served to limit average patent life – all intended to make patent policy a servant of society. As we shall see below, this legal line was the one which was adopted for the European patent system and the one with the greatest impact worldwide.

The New Europe

As the unconditional loser of the war, West Germany¹⁶⁹ was hardly in any likely position to steer the course towards European political collaboration; nor were the country's tainted institutions likely templates for regional emulation. Against the odds, both turned out to happen, though only after several years and phases of 'Europeanization' were concluded. The critical steps towards a European patent system all involved Franco-German reconciliation and cooperation – a task that not only involved French assurance of military security from its populous neighbor after the last war, but even a termination of the so-called *Erbfeindschaft*, the hereditary enmity between the French and German peoples which had disturbed European peace for centuries (Willis 1968:vii).¹⁷⁰

France, against initial opposition from the allied powers, was allowed to preside over its own occupation zone in demilitarized West Germany after the war. In contrast to British and American targeted efforts of temporal suspension of German operative military forces combined with aid to rebuild the country's industry, the French

¹⁶⁹ Used here to designate the Federal Republic of Germany until the unification in 1990; the Communist German Democratic Republic had no influence on what would eventually become European patent law and policy.

¹⁷⁰ The account of gradual Franco-German reconciliation after the war is based on F. Roy Willis's (1968) systematic treatment of the subject.

interpreted its task as a civilizing mission of 'denazification' and public reeducation. A German military could play no role in the country's future in the opinion of the French. The other western powers interest in gradually rearming West Germany as a buffer towards the communist block in Eastern Europe resonated less in France where socialists were a significant political force and the prospect of American geopolitical expansion was looked upon with suspicion. Still unresolved border issues in areas with mixed populations, such as the Saarland, further bolstered the French in their renitence.

Against the Anglo-American desire for a unified Western Europe, solidified both by the Atlantic Pact and pursued by the Council of Europe¹⁷¹, France desires that its disputes with Germany be solved bilaterally without external mediation. French opposition to German rearmament would halt, and eventually scrap, plans for a European Defense Community (EDC) as well as significantly delay other efforts towards European political multilateralism.

The single most important reasons the French eventually began accepting inclusion of West Germany into the new Europe came from the fear that Germany – irrespective of French support – would quickly return to its industrial might of the Weimar era. Germany had proven its ability to advance domestic industry and production on its own during its isolation of the interwar years and little seemed to stand in the country's way this time as other western powers were interesting in seeing its technology and consumption rise. Even in 1949, Germany was outperforming France in all major areas of industry, both in terms of output and productivity, with the sole exception of

¹⁷¹ Founded on May 5, 1949 by the Treaty of London which was signed by ten countries, not initially including West Germany.

agriculture. Aware that it stood no chance in stemming German growth, cooperation in the area of industrial policy was France's only way to avoid being outrun by its neighbor.

Pushed forward by an international interest in the revitalization of German industry and a French desire for domestic security and prosperity through a unified Europe, the post-war tensions would eventually give rise to political collaboration and European regionalization. As patenting activity was growing steadily from the 1950s onward (WIPO 2010) and was emerging as a truly transnational phenomenon, it was recognized both in France and Germany that harmonization of patent law would have to be part of the Europeanization process. However, when the Treaty of Rome was signed in 1957 – which consolidated and extended the European Coal and Steel Community, created the European Economic Community, the European Atomic Energy Community as well as a customs union – a European patent law was not included in the agreement. Despite several efforts – still ongoing halfheartedly – a 'Community Patent' has never materialized within the European Union (EU).

To Strasbourg, to Munich

Two countries, in particular, were interested in some form of patent law harmonization, though for slightly different reasons and with different objectives in mind. The United States desired procedural streamlining internationally in order to protect its growing pool of applicants and limit the duplication of examination procedures between patent offices. France, with a largely inefficient patent regime of its own and fearing dominance of American industry, wanted Europe to adopt common patent regime. In a

phrase, the American agenda was purely procedural whereas the French initiative would eventually require far-reaching substantial overhaul of national laws.

American efforts eventuated in the Patent Cooperation Treaty (PCT) which was signed in Washington in 1970 by 34 countries. The treaty unified search procedures in all signatory states and made it possible to file multiple national applications simultaneously. PCT patents are not international patents, but a central administration of applications intended to improve the duplication of search efforts when applicants file for protection in several countries. The PCT has been in continuous effect up to this day, with 144 contracting states as of December 2011.

Substantive European integration proved to be more difficult than the procedural adjustments of the PCT, but there was great political interest in the outcome. France had been at the front of the first developments towards unified European patent law; already in June 1947, France, Belgium, Luxembourg, and the Netherlands signed a treaty establishing the *Institut international des brevets* (IIB) in the Hague to centralize searching and archiving. France, never fully divorcing patent law from doctrines of Natural Law had several times proposed international patents as the only logical treatment of inventors, but no such proposal was met with approval by other states (see Spencer 1960).

During the first session of the Consultative Assembly of the Council of Europe in 1949, French representative Henri Longchambon presented a plan for a European patent office which would issue “certificates of novelty”, later to accompany national applications, but France’s ultimate goals were more far-reaching: The Longchambon

proposal was also for a “Study for a draft proposal for a convention on the creation of a European Patents Office” (Wadlow 2010:126).

It was immediately pointed out that the plan was not tractable as national offices differed precisely in their different criteria for novelty. Similar attempts of achieving a European patent “with a minimum of legislative unification” also failed as the creation of a patent covering several countries “requires a maximum of legislative unification” (Haertel 1980:1). In other words, a unitary framework from which to forge European law was needed.

No European country, however, was willing to discontinue its own system entirely; the main reason being that the patent laws in most countries were interwoven with the social, economic and legal systems and a new pan-European patent code would require uniformity on all these fronts as well (Spencer 1960:371). The dilemma facing Europe was hence to allow states to uphold patent sovereignty and simultaneously unify patent policy. Moreover, member states of the European Economic Community could not agree whether a European patent system should be limited to Common Market countries (the French view) or be open to non-EEC countries in Europe as well (the Dutch view). It is tempting to think that the French view testifies a resolve for even stronger unification later on.

Although the Longchambon plan had been a short-term failure in 1949 the Consultative Assembly of the Council of Europe approved its agenda and referred it to the Committee on Economic Questions for further study on its viability. Resultantly, a Committee of Experts was formed, comprising almost entirely the thirteen heads of

national patent offices (Wadlow 2010:126–127). The Expert Committee immediately spotted the difficulty of consolidating national idiosyncrasies:

The industrial characteristic is apart from novelty the only one which is required of a patentable invention by all the national regulations (inventions, ‘capable of industrial application’ Germany, Austria, Belgium, Denmark, Greece, Netherlands or arising from ‘any kind of industry’ France, Turkey or of ‘manufacture’ United Kingdom, Ireland) ... [But] A concept like that of ‘utility’ may refer to the technical or economic value of the invention (‘Nützlichkeit’ [in Germany]) or to the possibilities of realising the invention (in the French or Belgian terminology), or to one and the other (the ‘utility’ of the British law) or to the ‘technical’ character of a product (‘useful’ as opposed to ‘scientific’ or ‘aesthetic’), etc. *It appears therefore to be better not to attempt to group under general headings the various exclusions laid down by the laws or practices but to stick to setting out the common features which an examination of the national replies reveals under the diversity of concepts.* (quoted in Takenaka 2008:368–369, emphasis mine)

Two members of the Expert Committee were uniquely influential in the further development: President of the German patent office Eduard Reimer and Dutch delegate C. J. de Haan. Both Reimer and de Haan, in different ways, followed the strategy of “setting out the common features”; Reimer by drafting a proposal for a new law based on the widely respected and emulated German patent law, and de Haan by mapping out all points of divergence. Already at that time, and unlike American patent law, European nations all practiced exclusions of different industries and inventions from patentability, such as on inventions related to systems of insurance, accounting, calculating, teaching, rules of games, or methods of medical treatment (Takenaka 2008:369). Whether all of these were included in a European patent law or just some of them, the outcome would be an exclusive system. The Expert Committee also ruled that a negative definition of

patentability, with listed exclusions, side-stepped the cumbersome challenge on finding a definition of ‘inherent invention’ that all countries could agree on (Pila 2005:759–760).

Reimer and de Haan both thought a unified European patent to be the ultimate political goal, but they contemplated opposite approaches to reach it. Reimer’s proposal was ‘top down’, where national laws would need to be made identical enough for patents granted in one country to be recognized as valid in another. Patent enforcement issues, such as revocation and most litigation, would be delegated to a new regional “European Court of Justice” which would also supervise and monitor national patent legislation.

De Haan’s ‘bottom up’ proposal, on the other hand, did not require any changes of national laws but the erection of an independent regional patent office which would grant European patents in addition to national patents. Both proposals would have needed significant unification of substantive patent law across European countries, while leaving either administration (Reimer) or enforcement (de Haan) to existing national institutions.

Reimer’s plan was plagued by two difficulties. Firstly, it implied revisions to most national laws; in many cases, significant revisions. Secondly, a ‘European’ patent court would imply a substantial loss of national judicial sovereignty which few countries were likely to relinquish; the fact that the location and character of this court was likely to be ‘German’ did not make matters easier. Reimer, in a somewhat cavalier expression of German pride in the industrial laws of the homeland, wrote a draft for new substantive patent laws which were mostly verbatim replication of the German patent code. Although Reimer’s attempt was thwarted, this blueprint would later resurface and, ultimately, be implemented.

De Haan's proposal, on the other hand, contained the solution to the problem of legislative reform. Rather than replacing existing laws, his plan was for the creation of a dual system in Europe with national offices existing alongside an independent regional office. To overcome legal disparities between the various member countries, de Haan recommended that the European office should establish its principles by a process "fixed in such a way as to be as far as possible the maximum conditions for granting of patents applied for in each country" (quoted in Wadlow 2010:137). In other words, the national system with the strictest standard on any question of patentability would direct the one adopted by the European system. For instance, as long as France had a doctrine of universal prior art, so would the European office; as long as Germany and the Netherlands did not allow for chemical product patents, neither would the European counterpart; the strictest standards for non-obviousness and inventive step – that of Germany – would set the bar for everyone.

These "maximum conditions" would, of course, in many cases result in greater strictness in standards for patentability; however, it would also prevent that a member country's own standards were overruled and limited by a coexisting system. As explained by de Haan against Reimer's fears of a 'race to the bottom', the European system would be preferred for most important inventions, not only in countries with deficient national systems. De Haan's chief concern was to avoid affronting national sovereignty at all costs, and to that end he was willing to include any objection to patentability which could be found in any of the contracting states (Wadlow 2010:148).

One would possibly expect that harmonization of different legal regimes would best be achieved by discovery of minimum, or at least, average standards, but this is not the case when the chosen outcome is to allow existing national systems to coexist with a new regional system. In this latter solution, proposed by de Haan, the least common ‘denominators’ were not pursued but rather the sum of the maximum ‘numerators’; the fractions were not reduced but added. The goal was therefore not only to set a higher standard of patentability for the European office than national ones, but also a question of incorporating into its governing law all the different restrictions and conditions which existed in any one member state (Wadlow 2010:138).

The draft convention would alter some of de Haan’s proposal, particularly at the hands of Reimer who thus managed to reintroduce many of his previously proposed guidelines. The basic definition of the patent right, in de Haan’s revised proposal, is revealing the ‘invention philosophy’ that would solidify and spread across Europe with the eventual ratification: to avoid the implication that the patentee had a positive right to work the invention the draft convention explained “The effect of the European patent is to prohibit anyone in any of the countries to which the Convention applies from embarking professionally without the patentee’s authorisation on the manufacture, offer for sale or the utilisation of the patented object” (quoted in Wadlow 2010:140).

The efforts of the Committee of Experts paved the way for the European Patent Convention by route of the Strasbourg Convention¹⁷², but only after a five-year standstill between 1955 and 1960, when the implementation and solution of de Haan’s plan was

¹⁷² Full name: *Strasbourg Convention on the Unification of Certain Points of Substantive Law on Patents for Invention*, signed in Strasbourg, France, on November 27, 1963.

still unsettled. The Strasbourg Convention has been described as “relatively little known, and very poorly documented” (Takenaka 2008:367).

The reason is probably due to the fact that it went into effect in 1980, years after it was signed and after the European Patent Office had begun operating. However, the Strasbourg document was signed early and copied, in many cases, word-for-word in the stipulations that led to the European Patent Office. Understanding the history of the latter therefore inevitably points to the former.

The reasons little happened in the question of European patent unification between 1955 and 1960 is due to the fact that the problems of adopting the national-regional balance in terms of patent law administration and enforcement long seemed insurmountable and might as well have led to naught had not the consistent American impetus for what would eventually become the PCT awakened European interest in compromise in fear of American industrial dominance (Kranakis 2007:706).

The Strasbourg Convention became the immediate outgrowth of the Expert Committee’s efforts and the de Haan-Reimer negotiations. The fact that it was created by a small cadre of professionals, sharing the same basic vision for European patent policy, resulted in the adoption of the convention without much controversy (Takenaka 2008:367–368). Although it limited itself to harmonization of “certain points” of existing national patent laws of member states to the European Council, it anticipated further steps. As indicated by a resolution of the Expert Committee in 1955:

The Committee is of the opinion that the unification of certain points of the substantive laws on patents is one of the conditions for the creation of a European patent whether granted by a European or by national office.
(quoted in Wadlow 2010:145).

The Pioneering work of de Haan and Reimer was resumed by Reimer's successor at the German patent office, Kurt Haertel, and ten years after the signing of the Strasbourg Convention, the parties convened in Munich for the adoption of the European Patent Convention (EPC).¹⁷³ In accordance with de Haan's plan, the EPC established a fully integrated European patent office, existing alongside – not replacing – national offices for the sixteen signatory countries, including all, then, nine member of the European Economic Community. Under the EPC, European patents granted by the European Patent Office (EPO), would be eligible for protection in all member states for which a fee was paid. Resulting patents, and legislative authority over the use of the patents, remained national. In other words, it was theoretically possible for a European patent to be held legible in one country but deemed void by the courts of another. For substantive patent law, the EPC expanded on the Strasbourg Convention without much modification. This adoption did not meet any controversy (Wadlow 2010:148).

A German Law

The EPC was the culmination of French attempts to bolster European industrial competitiveness vis-à-vis the United States and followed the plan by Dutch delegate de Haan. Substantively, however, the EPC is German. There are several reasons for this.

¹⁷³ Full name: *The Convention on the Grant of European Patents*, signed in Munich, Germany, on October 5 1973.

One reason has to do with the plain fact that two of the most important architects behind the European system – Reimer and Haertel, respectively – both happened to be presidents of the German patent office. Their legal inclinations were above all shaped by their legal training and professional experience in their home country. De Haan was Dutch, but his home country's patent system also had a German tint: when the Netherlands eventually passed a new patent law in 1912 it did so with the help of the German patent office, in addition to that of the United Kingdom (Doorman 1948).

Related to this is the fact that, unlike de Haan, Reimer had written a draft for substantive laws. Although de Haan's approach to Europeanization of patent law was followed, the most expedient source from which to create a new legal framework was simply to adopt an already prepared document which had been written with a similar intent (Wadlow 2010:148 makes the same claim).

De Haan's "maximum conditions" solution meant that the strictest standards for patenting on a given issue from any country would be implemented in the new regional system. Since the German system, on most counts, practiced the strictest requirements in Europe (notably on the question of 'industrial applicability' and 'inventive step'), there was little reason to resist Reimer's draft given the fact that a new law would have to accommodate most of the same provisions in any event. The single most important addition to the German model was the French standard of 'absolute novelty' (implying that an application have to be compared to the existing 'prior art' globally, not only nationally).

Lastly, even if de Haan's "maximum conditions"-approach had not been followed in the Strasbourg Convention, the German patent system at the time was the most likely candidate to serve as model: German industry had quickly risen from the ashes of World War II and was outperforming its European neighbors. The country's strict and efficient patent system was part of the German *Wirtschaftswunder*, and German patent laws had already been emulated by several smaller European countries. Of the two most important competitors, France's registration system was limited and the English was too idiosyncratic to serve the task of Europeanization.

The saga of the European patent system would therefore aptly be described as one of 'Germanization'. The German 'invention philosophy' of patenting, which had had its origin in the patent controversy of the late 19th century and which, admittedly in gradually moderated form, had survived two world war defeats, a revolution and political turmoil, emerged largely unscathed and finally held all of western Europe in its embrace. With the inclusion of the French principle of 'absolute novelty', the last traces of von Siemens's "National Economic" approach to patenting was left from the German 'invention philosophy', and most of the continent would maintain a system of technological exclusiveness, information-focus, aimed at the diffusion of knowledge (see table 1).

Global

The discussion above deals with what the EPC *was*, but equally important is what it was *not*. It did not create a new patenting philosophy, but merely served to spread an

existing legal template. Although the ‘invention philosophy’ is almost a century younger than the first ‘inventor philosophy’, it dates as far back as the late 19th century. Although it is the former philosophy which has spread globally, this has been the result of administrative considerations and is not an ideologically driven development.

That is not to say that the arena for patent politics – today inevitably global in character – has been peaceful and uncontested; far from it. But ideological questions are rarely part of the discussion. Of major developments from the last decades many have encompassed international treaties and agreements, but these – to the extent that they have been successful – have been procedural. The PCT, which went into effect in 1978 – incidentally, the same year as the EPC – explicitly eschews substantive questions:

Nothing in this Treaty and the Regulations is intended to be construed as prescribing anything that would limit the freedom of each Contracting State to prescribe such substantive conditions of patentability as it desires.¹⁷⁴

That is not to say that the PCT has not had a huge impact on patenting. This agreement, together with the WIPO¹⁷⁵, and more recently the TRIPS agreement,¹⁷⁶ have all played a huge role in streamlining patent procedure around the world and making international application routes more accessible to inventors and companies (see Bogsch 1992). Under the WIPO, patenting procedures have been streamlined across the world

¹⁷⁴ Patent Cooperation Treaty of 1970. Art. 27(5).

¹⁷⁵ World Intellectual Property Organization, created in 1967 as a specialized agency of the United Nations for matters of intellectual property.

¹⁷⁶ Agreement on Trade-Related Aspects of Intellectual Property Rights, concluded in 1994 and administered by the World Trade Organization. The TRIPS agreement sets minimum standards for intellectual property rights in member countries but does not direct national legislation.

and specific treaties – such as the Patent Law Treaty¹⁷⁷ – have made treatment of applications and applicants more similar for several countries.

Substantively, on the other hand, less has been accomplished. Attempts by the WIPO to harmonize substantive patent law through the proposed Substantive Patent Law Treaty have still not been successful after thirteen sessions. It has been explained that the rule intensiveness of national patent systems have “functioned like swamps” (Drahos 2010:50) and curbed any efforts at major international consolidation.

Further integration of European patent law by creating a ‘community patent’ (for EU member states) has also not proven possible. Although this was an express ultimate goal of the Expert Committee of the European Council at the time it designed the national-regional hybrid-system currently in effect, nothing has materialized. As late as in 2000 the European Commission issued a Proposal for a Council Regulation on the Community Patent,¹⁷⁸ it has remained a draft and is likely to remain in that state.

Summary

Patents are the legal creation of Europe with a long history as royal privileges. The modern patent system stems from early democratic attempts to curb misuse of the patent system by setting up certain standards which needed to be met in order to qualify for legal protection. Whereas the monarchs needed no justification for their patronage, the modern patent institution had to be based on a more-or-less explicit philosophy.

¹⁷⁷ Adopted at June 1, 2000 in Geneva, went into force in 2010.

¹⁷⁸ OJEC 2000 C. E. 337, 278.

The first philosophy was inventor-focused; as an efficient way to transform a feudal practice to serve democratic purposes, European nations and the United States created codes that declared patents as an individual entitlement. Whereas this model was successfully carried out in the United States, the European nations had failed to strike the appropriate balance and the system soon lapsed into an intense legitimacy crisis.

As with the origin of patents in the first place, which came into existence in the polycentric European environment, patents survived due to the plethora of national systems already in place; virtually no country dared to attempt abolishment on their own without assurance that other nations would later follow suit. Instead of adopting the balance achieved in the United States a century earlier, the solution arrived at in one European Country – Germany – was to develop an entirely new patent philosophy, one with the ‘invention’ as its focal point.

This new ‘invention philosophy’ was the result of aggressive industrial policy and a state-corporate alliance. In difference to existing patent philosophies, the new German was based on technological exclusiveness and hostility to patent rights of long duration. The remaining European countries would either emulate the German system or let its own continue a shadowy and deficient existence.

The reasons as to why this German model spread to the rest of Europe were several. Firstly, the German system emerged the most efficient in Europe throughout the 20th century. Secondly, as European unity was sought through the creation of a alternative regional patent office, and national laws would continue alongside the new system, the latter had to follow the strictest standards for patenting lest to come into conflict with

national laws. Thirdly, an exclusive system does not require the same degree of philosophical agreement as an inclusive system – such as the German – which made regional harmonization easier to accomplish.

In effect, the two philosophies bequeathed by the end of the 18th and 29th centuries, respectively, still underpin the patent institution; albeit in a dim echo which is only heard during legal reform when a contrarian party desires to summon its rhetorical strength. In an invited study presented to the Committee on the Judiciary of the United States Senate in 1958,¹⁷⁹ the economist Machlup could note that there were would be no reason to create a patent system at the time, but no reason to abolish one that existed either. In the current global and corporately-driven world of patenting, such a far-reaching question is not even likely to be asked.

¹⁷⁹ “An Economic Review of the Patent System”, *Study of the Subcommittee on Patents, Trademarks, and Copyrights*, Committee on the Judiciary, United States Senate, Washington, 1958.

CHAPTER 8 - A TALE OF TWO SYSTEMS

The foregoing historical expositions have showed how the two patent philosophies described in chapter 5 developed, matured, and, to some extent, spread. A terser analytical summary will be given in this concluding chapter which will also connect theories discussed with empirical material presented. The history presented here will be focused around the question as to how the law has changed its focus on the different steps in the chain of invention as history has progressed. A theoretical evaluation and relevance of the findings to the question of substantive and formal law will then be discussed separately.

Analytical Summary

Economic situations do not automatically give birth to new legal forms; they merely provide the opportunity for the actual spread of a legal technique if it is invented.

– Max Weber (1978a:687)

At the King's Service

Patent laws have their origin in Europe. They were the outgrowth of geographical congestion of sovereign principalities in constant conflict, peaceful as well as violent, from the Middle Ages onward. Not only did these principalities separately rediscover the force of a shared law by dusting off the Roman codex of Justinian, they also came to understand the importance of technological development in the advancement of domestic prosperity and power.

Unlike other civilizations, such as the Russian, Indian, Chinese, and Arabic, that of Western Europe highly evaluated skilled manual labor and craftsmanship. Artisans enjoyed higher prestige and official recognition in Europe than anywhere else during the centuries leading up to the industrial revolution and they were able to organize collectively in guilds and even form secret societies (see Ehmer 2001). This unique combination of political conflict and technical innovation would become the seedbed of intellectual property laws: Europe was a polycentric region which placed high value on secular laws and on industrial might.

For the greatest period, however, patents were not recognizable as ‘modern’ rights where the distribution follows objective eligibility criteria. Rather, they were awarded individually by monarchs to inventors and artisans in the same way as any other privileges were being issued: by an ‘open’, or “patent”, letter bearing the royal seal for all to see. In legal terms, patents of the early and pre-modern era were part of a “patrimonial” system, where regulation of social relationships follows “individual privileges and bestowals of favor” (Weber 1978b:958).

Patents from this era constituted a broad range of privileges, where essentially any imaginable commercial advantage was being guaranteed by the King in personal and open letters. These could be of varying duration and even contain geographical stipulations, such as being only applicable in a certain town or region (Hilaire-Pérez 1991:914). As they were given at monarchical discretion, the patent institution was not systematically codified into law. In fact, what is often referred to as the first patent law,

the British *Statute of Monopolies* from 1623/1624,¹⁸⁰ was an attempt by Parliament to restrict the frivolous patenting of the Crown at the time to only new technical inventions.

In terms of patent philosophy, that of the pre-modern era targeted individual inventors selectively, either as royal favorites or as already accomplished craftsmen. It mattered little to the monarchs whether an invention was strictly new, or who had made it. What mattered was to ensure that it was practiced in the kingdom and possibly that the bestowal would create valuable political allegiance. This meant either to attract foreign artisans or to soothe them enough to stay. Patent distribution was one way of accomplishing both.

How closely patents at the time were associated with work and craftsmanship can be seen in the fact that the *Statute of Monopolies* established the patent term to 14 years; a period corresponding to that of apprenticeship at the time. But this also shows the first arrival of modern legal principles; namely the idea that the public should benefit in the long run from individual privileges. Just as a master needed 14 years to teach his apprentice, a patentee needed 14 years to educate the public about his invention (Bently and Sherman 2004:324).

The modern understanding of incentives to disclose inventions or to invest in inventive activity was not a necessary principle of the privilege system. Privileges targeted specific individuals, most of which had already made their inventions, and did so without demanding that they specify and share their skills. Indeed, the fact that patentees

¹⁸⁰ Full title: *An Act concerning Monopolies and Dispensations with penall Lawes and the Forfeiture thereof*. 1623, 21 Jac. 1, c. 3. Both the years 1623 and 1624 are frequently cited as the time the law was passed.

were often given lifetime protection excludes any notion of disclosure as a constitutive philosophical element, or of incentive to invent for that matter. In modern terms, the privilege era was one where patents were used as incentives to work and practice an invention.

On the other hand, the understanding of secrecy as a powerful private tool in industrial competition was undoubtedly present at the time. Although not directly targeted through patents, the various guilds of craftsmen relied heavily on secrecy and later legal developments would show full recognition of its importance when forging new patent laws (see Long 1991:869–870). Although the patent privileges did not consider originality an important issue before the *Statute of Monopolies*, the concept was appreciated elsewhere, namely in scientific disciplines by the 15th century (Merton 1957:659).

As the two great revolutions drew near, the contour of a modern patent system was beginning to appear. In particular, the requirement of novelty and, to some extent, originality was beginning to be demanded. In England it was expressed in the 1623/1624 *Statute of Monopolies* that “true and first inventor” was eligible for patents, and in some of the American colonies an inventor had to apply to the state legislature to receive a patent. In France in the early 18th century, formal novelty examinations were conducted (Hilaire-Pérez 1991:930–31).

Towards the end of the privilege era several of the “patrimonial” characteristics were starting to give way to objective patenting criteria. Nowhere, on the other hand, were patent applications examined and administered through a specialized patent office,

which meant that there was still some way to go for patent law before it would reach the formal rationality of bureaucratic rule, which “does not entitle the agency to regulate the matter by individual commands given for each case, but only to regulate the matter abstractly” (Weber 1978b:958).

The philosophical seeds of the ‘inventor philosophy’ had been sown but had not yet taken root. Until the two great revolutions of the late 18th century, patents were still vested in territorial ideological claims and nowhere did any of the two modern patent philosophies direct the law systematically.

Revolutionaries

Unlike the French revolution, which aimed at broad and societal transformation, the American Revolution restricted itself to matters of political governance – it sought to protect civil society and keep the State away from vital matters of society (Bell 1991:269). Still, both revolutions, independently and at the same time, created the first of the two modern patent philosophies and devised patent laws accordingly, namely the ‘inventor philosophy’ of patenting.

The requirement that only the “first and true” inventor was eligible for protection was adopted from English law, and French examinations for eligibility were further strengthened and emulated in the United States. In France, examinations were only conducted for a very short while. The reason as to why they were again removed was ideological: the country’s newly discovered Enlightenment ideals of innate human rights swayed the national assembly to remove what it considered an unfair encroachment on

individualist values. The constitutional assembly thought ideas were the properties of inventors and that the state should not interfere with these men's natural rights (Hilaire-Pérez 1991:930–31).

This was more or less the philosophical approach to French patent policy for the next hundred years. France showed reluctance to interfere with what was considered the 'natural rights' of inventors, and patent policy gradually turned into a mere registration system as a result. Legally speaking, the French system did not progress much internally, though politically France became pivotal in international steps toward patent law harmonization for the very reason that the country's weak patent system propelled it into the international arena in order to protect its own industry.

In the United States, on the other hand, a sophisticated system based on the 'inventor philosophy' was created. By the mid-19th century, American patent law was the most progressive in the world, the country saw a dramatic increase in patenting activity, and had developed a rich legal framework for industrial policy. Not only did the Patent Office carry out the best searches in the world at the time, courts also responded to inventor's exploitation of their patent property through ever more complicated licensing agreements and litigious conduct (Khan 2009).

American patentees, more than anywhere else at the time, begun developing sophisticated linguistic devices in order to delineate their inventions to anticipate future infringement and lawsuit. Through legislation, these practices became codified into the law. This practice, known as 'claim construction' has since become a fundamental – if

not *the* fundamental – aspect of patenting: “the name of the game is the claim”, as the influential patent court judge Giles Sutherland Rich once put it.

Unlike France’s lofty moral support for its patent laws, the United States kept pruning its system in accordance with practical considerations. At the same time, American patent philosophy was cautiously maintained and served to protect the interests of private inventors with great success for the national industry. It thus managed to “democratize invention” (Khan 2009). Resultantly, whereas France’s system was falling in disrepute by the mid-19th century, that of the United States was becoming the most accomplished.

Due to its success, American ‘inventor philosophy’ was firmly established and understood by American academics, industrialists, politicians, judges, and even the general public. The legitimacy of the patent institution was undisputed, both due to the country’s rapid industrial expansion, and due to the system’s resonance with political ideology at the time. Small intellectual skirmishes with anti-trust law – another political principle with strong support with the American public and intelligentsia – had not resulted in catastrophe for either but served to separate the jurisdictions of the two.

Throughout the remainder of the 20th century, however, the intellectual rigor of American ‘inventor philosophy’ would receive constant blows, one at a time. All developments, in one way or the other, were to constitute direct assaults on the core concept of the American philosophy, the private inventor.

Firstly, companies exploited contract laws to the point that they seized power over their employee’s. Unlike other countries, the United States already awarded patents

exclusively to inventors and hence saw no reason to bolster their rights further. Behind the scene, however, companies were forcing employees to give up most of their inventions as a prerequisite for employment.

Separate laws protecting employee-inventors were not pursued, with the result that inventor rights in the United States were *de facto* gradually diminished vis-à-vis corporate power. Whereas the salaried inventor still has a stronger position in name in the United States than anywhere else, the intention of American patent law on this question has thus “been turned on its head” in practice (Gispen 2002:22).

A similar ideological attrition has afflicted the American fee structure for patents. Well into the late 20th century, the United States continued to be the only country to practice so-called ‘sealing fee’, meaning that a patentee automatically received patent protection for the full potential patent life (17 years until 1994, thence 20). Even today, when holders of American patents must pay maintenance fees as well, these are generally lower than in Europe and not enforced every year but only at certain intervals (due at 3½, 7½, and 11½ years of patent life).

The most prominent example of America’s original philosophy which still characterizes its system is its practice of allowing patents to “anything under the sun that is made by man” (to quote Senator Alexander Wiley)¹⁸¹. The principle that no industries are categorically excluded originated in a desire to let the market – not the State – sift out the successful from the unsuccessful inventors and thus give the private inventor a chance

¹⁸¹ (S. Rep. No. 1979, 82d Cong., 2d Sess., 5 (1952))

as entrepreneur. In practice, of course, this principle too has gradually become a handmaiden of big industry rather than to the creative craftsman.

More broadly speaking, the most important ideological legacy of the ‘inventor philosophy’ is, in any case, its particular way of viewing patents as legitimate monopolies. It broke with the monarchical privilege system which was loosely founded on an understanding that patents constituted incentives to work and practice an invention.

The new and democratic ‘inventor philosophy’ addressed itself to an earlier point in the chain of invention, to the moment of invention itself. It sought to “add the fuel of interest to the fire of genius”, to use President Abraham Lincoln’s famous words. This new understanding was implied in the 1623/24 British *Statute of Monopolies*, and expressly evoked by the French Constitutional Assembly as well as the Founding Fathers of the American Federation.

True, the most widely accepted academic justification of patents today, globally speaking, is based on the ‘invention philosophy’ (see below), but the notion that patents *also* provide incentives to invest mentally in acts of invention is still considered valid. When the United States removed its unique originality requirement in 2011, its clearest direct manifestation in patent law was erased, but it still holds philosophical force in the United States.

Industrialists

The timing for the creation of the first ‘invention philosophy’ was peculiar. Europe, during the second half of the 19th century, was moving toward the

wholesale destruction of the patent institution. The situation was such that *The Economist* would confidently announce on June 5, 1869: “It is probable enough that the patent laws will be abolished ere long.”

The patent institution was under assault from all sides. Industrialists, whose commercial scope was becoming increasingly international, were not particularly charmed by the local idiosyncrasies of the different national systems. Politicians were unhappy with opportunistic uses of the patent system by certain countries who designed their laws to favor domestic industry and even encourage piracy. Economists and intellectuals, on their part, attacked the system on grounds of free-trade and anti-monopoly sentiments.

The reason patents survived was twofold: with the exception of the Netherlands – always a bold and progressive nation – no country wanted to be the free-trade guinea pig amidst a pack of hesitant protectionists. As the United States did not even contemplate chiming in with the European anti-patent chorus, the abolitionist cause did not materialize into political action. France, with its uniquely weak patent system, seized the window of opportunity by altering course and established itself as the godfather of international patent efforts – a position it would hold well into the late-20th century.

For Germany, the situation was different. Rather than contemplating whether or not to abolish patents, the newly formed Empire had to decide whether to adopt a patent system at all, just as Switzerland had to. Many prominent Germans were against it, not the least Chancellor Bismarck. Fearing that they would be hurled into international

competition stripped of a valuable commercial asset, German industrialists coordinated efforts and secured the future of patents in Germany.

Most prominent among these was Werner von Siemens who understood that the best way to sway recalcitrant politicians in favor of a particular legislation is to write the law yourself and thus spare them the burden. The first unified German patent law of 1877 was for a long while known as “Charta Siemens” for that reason. Von Siemens’s contribution can indirectly be assessed by the fact that Switzerland, who did not have a similar sponsor amongst its class of industrial magnates, waited until 1888 to finally enacting a patent code of its own – one which was of Europe’s most limited for almost a century later.

The “Charta Siemens” was the first patent law which introduced the eventually immensely influential ‘invention philosophy’. The text of the law did not mention the inventor by one word; rather, it awarded patents to the first person or corporate entity to file an application. It thus focused its attention away from the inventor and to the person or company responsible for filing the application: “The fundamental organizing principle and most innovative aspect of the German Patent Code was the first-to-file principle” (Gispen 2002:30).

Moreover, it made patent procurement difficult and patent protection expensive. The way this was done was to introduce yearly and cumulative renewals fees throughout the potential 20-year lifespan of patents. In what von Siemens had referred to as the patent system’s “self-cleansing”-mechanism, only the wealthiest patentees would be able to maintain protection for many years, and would only do so on the most lucrative

inventions. Anything else was publicized and made available for anyone to exploit within a very short time. If German patents survived the anti-monopoly movement, they did so by the grace of an anti-monopoly patent law.

The “self-cleansing” idea behind the ‘invention philosophy’ heralded a fundamentally new way of looking at patents. Instead of seeing it as a tool to entice inventive activity it shifted focus down the chain of invention to the information belonging to an invention after it has been made. The ‘invention philosophy’ sees patents as incentives to *disclose* a secret, not to *work* on a technique (as for the pre-modern privileges) or to *invent* as such (as in the ‘inventor philosophy’). This understanding has since taken hold, been further elaborated, and today serves as the standard way to defend intellectual property in general.

Internationalists

The reason as to why the ‘invention philosophy’ spread and eventually became the organizing principle for European patent law has to do both with German industrial success and matters of diplomatic procedure. The industrial sector in Germany – despite being a twice-defeated nation which during a short time-span had suffered through social upheavals, hyperinflation, occupation and geographical division – kept bouncing back with enviable results.

Although the industrial sectors were included in the earliest plans for a ‘New Europe’ after World War II, it was soon realized that industrial policy was too thoroughly rooted in other political and social areas (such as employment and education) to allow a full alignment across countries. A ‘Community Patent’ under the European Union edifice

was therefore abandoned; though technically speaking preliminary work on this is still ongoing. France, fearing that its own industrial sectors would crumble under the weight of American competition, added political pressure to bring Europe closer together.

The compromise found was to create an independent European Patent Office which would exist alongside optional national patent offices. This, it turned out, had to be modeled on the highest standards for patentability in any country for any given legal question. In most areas, this meant adopting the standards of Germany as few countries matched its rigorous legal requirements. The European Patent Convention which was signed in 1973 was therefore essentially a German law which spread to all of Europe primarily as a result of French efforts (Kranakis 2007).

The patent code of West-Germany was largely the same law as the one which was passed in 1936, which again was quite similar to the patent code of the Weimar Era, which again was quite similar to the first German patent law of 1877. Most new additions to the 1877-original had consisted in strengthening the position of individual inventors somewhat relative to that of corporations. Still, above all the European Patent Convention constitutes a spread of an 'invention philosophy' to the entire European continent.

Apart from the creation of a European patent office, however, mostly procedural aspects of patenting have been addressed internationally. Ideological or even substantive concerns have not predominated international patent policy, nor has questions of 'patent philosophy' been raised much.

The truly international phase of patent policy was entered with the Paris Conference of 1883 which established international priority for patent applicants. This

priority meant that novelty of an invention in any country would be considered against the time when the application was made to the first designated country. The two World Wars limited further international steps to be taken, but efforts were soon resumed after World War II. Due to its role as net exporter of technology, the United States was an eager supporter of international recognition of intellectual property globally and streamlining of patenting around the world (May and Sell 2006).

Landmark agreements were reached in 1967 in Stockholm¹⁸² when the World Intellectual Property Organization (WIPO) was created under the United Nations; in 1970 in Washington DC,¹⁸³ when application procedures were harmonized; a year later, in Strasbourg in 1971,¹⁸⁴ when a common system for technological classification was established; and in 1994 with the much discussed TRIPs agreement¹⁸⁵ signed in Marrakech, which set minimum standards for patent regulation and enforcement. There have been several other agreements as well (see Appendix), but none as far reaching or important as the ones mentioned above. The ongoing sessions of the *Standing Committee on the Law of Patents*, led by the WIPO is an attempt to create uniform substantive patent laws, but it is not likely to turn out any results. The political will is simply not present, and the potential consequences not great enough to strengthen it (Drahos 2010).

¹⁸² *Convention Establishing the World Intellectual Property Organization.*

¹⁸³ *Patent Cooperation Treaty.*

¹⁸⁴ *Strasbourg Agreement Concerning the International Patent Classification.*

¹⁸⁵ *Agreement on the Trade-Related Aspects of Intellectual Property Rights.*

New Hot Issues

That is not to say that there is no contest over the legitimacy of patents today. What is noticeable is that new political pressure is not channeled toward ideological rethinking. The reason most likely lies in the way the most important 'hot issues' are construed, which will be briefly mentioned in the following.

Today, alongside political and corporate pressures for procedural homogenization, various voices are being heard calling for substantial and ideological re-specification. This mostly centers on the question of patentable subject matter, and almost exclusively it is done with reference to either the American or the European patent systems. Older ethical and philosophical debates touched upon intellectual property as either altogether right or wrong (see Mossoff 2001), whereas new arguments are testing the fairness of intellectual property in certain conditions. Such discourses are matched by signs that the patent system is, at least partially, used to accomplish ends for which it was not originally intended.

Ethical concerns have revolved around the correctness or desirability to offer patent protection to new and emerging technologies or to extend patent protection into new industrial territory. Of particular concern has been software, biological, medical, and genetic technology. The argument fall mostly in three camps; objections based on the degree to which technological inventions are really a matter of scientific discovery, arguments about the appropriateness of substituting patent protection with other forms of intellectual property, and finally moral issues.

The issue of genetic patents has received both ideological and pragmatic attention. The objections are particularly staunch on part of members of the scientific community who contend that biological and genetic research, per definition and automatically, should unrestrictedly belong to the academic community. When discoveries are patented, they are not freely accessible to the furthering of science (see, for instance, Holman 2007; Paradise, Andrews, and Holbrook 2005).

The ultimate separation between science and innovation is referred to the ‘product of nature doctrine’ which, simply put, means that a product or process that naturally can occur without human manipulation belongs to the domain of science (Conley and Makowski 2004). Discussions of whether or not the distinction between science and innovation should be better protected usually points to the fact that the EPC, as opposed to American patent law, explicitly excludes ‘scientific discovery’ from patentability.

On a more pragmatic note, the debate has revolved around the potential for ‘skewing’ of ground research if academic institutions become more heavily reliant on intellectual property for funding (for discussions, see Geuna and Nesta 2006; Van Looy, Callaert, and Debackere 2006). Academic patents might express what has been described as a new shift in the relationship between science and public information (Gibbons 1999).

The gradual introduction of software technology to patenting has received much attention from legal scholars and computer specialists. Again, the hot issue has to do with where to draw the line, but some have also contended that software, and related applications, should not be proprietary at all. Both issues have been explored along

instrumental lines with reference to loss of efficiency or sufficient exploitation; but ethical considerations also imbue the discourse.

As far as distinguishing between forms of protection, software developers have enjoyed copyright protection on their inventions for as long as they have been made. Software developers have, however, consistently pressured to get patent protection instead; although it has a shorter duration, it covers greater ground. To a certain degree, their efforts have born fruit; patents are being awarded to software developers, although the extent to which this happens, and the circumstances under which it is possible, varies greatly from patent office to patent office.

The standard demarcation between the two is that patents protect the ‘idea’ whereas copyrights cover the ‘expression’ (Vaidhyathan 2003:18). Hence, copyright infringement has traditionally been more explicit than patent infringement; someone has to make an exact copy of the protected product. There is one caveat when discussing software; those who most staunchly oppose software patents also oppose software copyrights. Ideologically, the main contention is that software not only comprises information, but also essentially *is* information.

This, of course, is true of any patent; it consists of new, non-obvious, and technical information. For software, only the two first requirements are completely fulfilled. This, it has been pointed out, means that it is near impossible to distinguish between information *consumption* and information *production* (Benkler 2006:38). The anti-copyright movement for software is essentially similar to the anti-patent movement, but with stronger reservations to the latter due to its even stronger level of protection.

It is important to notice, though, that the open software movement says nothing about the legitimacy of the patent system as such. It opposes proprietary software, but does not oppose patents for other industries. In fact, the main argument – that software is inherently non-mechanical – implicitly accepts the traditional foundations of the patent institution.

Most moral objections to patents on technology in the ‘new’ industries have also, at least in part, been made with reference to the traditional philosophy of the patent system. Perhaps for rhetorical force, many critics of patents on biotech, software, medical process, and so forth, have pointed to the adverse effects of patents in particular areas. This, to be sure, does not necessarily mean that the entire patent institution is attacked. To reiterate, this in contrast to previous debates – notably the patent controversy in the 19th century – which did not so much discriminate between industries, but rather presented opinions that were either for or against patents in general.

Conversely, the current criticisms against patents typically falls somewhere in between the argument that ‘all patents are wrong’ and the pragmatic claim that ‘patents are undesirable for some industries’. Today’s global discourse is both fully ethical and selective at the same time. This, most likely, is a direct result of two factors: the global spread of patent systems, and development in scientifically complicated technological fields.

As patenting has spread to every corner of the world, there has been a growing fear that already strong international players will exploit the technological environments of weaker nations. In particular, commentators have pointed out the danger – or even

practice – for pharmaceutical and chemical companies to appropriate products and processes belonging to the verbal commons of indigenous people (for instance, Dutfield 2000; Mgbeoji 2006; Farhat 2008).

Several important political moves to prevent patents for certain forms of technology have also been made recently or are currently pending. Exclusions of certain industries from the patent realm are not always motivated by perceived economical inefficiencies, but sometime purely by moral outrage. The most hotly and morally contested technological fields are those of genetics and medicine. The stance towards the patentability for such inventions is also where the otherwise similar global patent systems differ most. The general picture is that the United States is the most favorable towards medical and genetic patents, and the rest of the world having mixed approaches.

Discussions range from the ethical problems of ownership to human material (Stix 2006) to the moral hazard of ownership to life-saving cures and medical procedures (Chirac et al. 2000; DeGeorge 2005). Media attention on some infamous patents such as the ‘Harvard mouse’ (for discussion, see Leder and Stewart 1984) and the U.S. patent number No. 5676977 for HIV treatment (discussed by Antelman 1997) shows that the public’s moral discomfort with some intellectual property is certainly present.

Politicians around the world have been responsive to some of these concerns. The U.S. Congress is, for instance, currently considering federal restrictions on genetic patents. Switzerland went even further during its recent constitutional review. In its new form, which went into effect in 2000, Articles 118-120 establishes a prohibition for commercialization of scientific discovery on human tissue.

To summarize, these moral debates are different from the traditional patent opposition in that it does not attack the system on the grounds of economic inefficiency or the legitimacy of patents in general. Consequently, patents are still contested on moral grounds but not in any abolitionist sense. The question of ‘patent philosophy’ is therefore not addressed systematically.

Direction without Philosophy

Whereas the philosophies have remained intact, the world of patenting has undergone tectonic shifts due to changing behaviors of patentees. What we are currently witnessing is that patents are used for purposes for which they were not originally intended or traditionally exploited. Of course, as an incentive structure, patent law is based on the idea of side-effect: the inventor is attracted by commercial advantages which the government is willing to defend, but only to make the information public. The patent system is therefore based on public by-product of individual motivations for a selective incentive, something that that has been called a “Faustian pact” (Bently and Sherman 2004:323).

Today, commentators are describing situations in which organizations seek patent protection for other reasons than commercial benefits. Several research organizations are, for instance, pursuing patent protection not to *make* business but to stay *in* business. Fearing that other companies’ patents might hamper their work, many research institutions, for instance, patent their findings in order to anticipate potential infringement suits (Hemphill 2003)

In a similar but more idealistic vein, the British *Wellcome Trust* funds biotech research and actively patents findings with the express pledge that its property rights will not be defended. The *Wellcome Trust* is, in fact, against patenting on biotechnology, but runs on the assumption that the most effective way to work against such patents is by holding them.

During the last three decades, the total volume of patent applications has increased dramatically worldwide (WIPO 2010). In order to account for this surge, researchers have pointed out the possibility that it emerges as a result of dropping marginal commercial value of independent patents. That is to say, they are held not so much for direct commercial results, but for their indirect legal importance.

A common theme across narratives documenting these new strategies is the idea that new forms of competition have induced would-be patent holders to view the value of their intellectual property in relation to the strategies of rivals rather than simply considering their technical usefulness or traditional commercial profitability.

For example, Rosenbloom and Spencer (1996) argue that, beginning in the 1980s, changes in management practices steered industrial research toward applied research that is likely to generate more patents, albeit of lesser commercial importance individually.

Similarly, Lerner and Kortum's (1999) research on American applicants, in the U.S. as well as abroad, concluded that legal reforms cannot account for the patent surge. They attribute the growth to changes in the management of American companies which has intensified the emphasis on research and innovation. Other studies have supported this view and, although the impact of new patenting strategies is regarded as a

widespread phenomenon, it is not seen as equally prominent in all industries (Hall and Ham 1999; Hall 2005).

Jaffe and Lerner (2003:16) point out how many companies today are pursuing patents, not for legal protection, but in order to increase a visible portfolio of competitive strength in order to attract investors. Qualitative studies have also found that the motivation behind applications are often indirect; patents are pursued not for the actual invention they cover, but in order to anticipate potential similar applications from rivals that might be blocked by the principle of technical equivalency (Cohen, Nelson, and Walsh 1997).

Such new and more competitive uses of the patent system, such as ‘patent pooling’, ‘patent blocking’, and ‘patent portfolio’ management have received increasing attention (Hall and Ham 1999; Cohen, Nelson, and Walsh 2000; Hall and Ziedonis 2001; Jaffe and Joshua Lerner 2004; Hall 2005; for a general overview of the literature on patent portfolios, see Gideon Parchomovsky and Wagner 2005). Generally, all such practices involve an *indirect* use of the potential of each individual patent through licensing agreements or threats of lawsuits. Hence, the portfolio theory posits that, for patents, the whole is much greater than the sum of its parts.

With the exception of the EPO, patent offices are confined to a single country. They are each subject to national laws that were originally set up to the industrial advancement of that country. But nations are no longer the main driving force of patenting; that role has been taken over by international companies with a global industrial and commercial activity and scope. These companies are not interested in legal

philosophy and political ideology and, as they have no legislative role and operate in multiple different regimes, they are not directly concerned with the grounds for legitimacy of the patent system.

According to Drahos (2010), patent offices today feel stronger responsibility vis-à-vis their corporate clients than to their country's legislature. Patent quality is less a matter of satisfying political goals and philosophical requirements than a question of building relationships of trust and receiving constant revenue through patent fees from major clients. Patent offices around the world are cooperating informally to streamline procedure, coordinate search efforts and sell each other consultative services. Clearly, such practices have a profound impact on the global patenting arena and making the operations of different offices more similar. But it is not an ideologically-driven process.

No essentially new 'patent philosophy' has hence been developed or proposed, with one noticeable exception. Although only a proposal at this stage, one new theoretical understanding of patents has recently been introduced which shifts legal focus throughout the chain of invention. Lemley's (2004) theoretical proposal has highlighted the 'property' function of patents, which allows for licensing agreements and sales of rights to the exploitation of an invention. This shift constitutes "ex post"-reasoning for patents, which Lemley contrasts to the current "ex ante" justification.

In "ex ante" explanation, intellectual property is justified because it gives inventors the incentive to publish technical information. This is the traditional defense of patents, and both 'inventor philosophy' and 'invention philosophy' largely corresponds with it. "Ex post" justification, on the other hand, is based on the assumption that

ownership gives the incentive to work on an invention. Moreover, given the fact that patents can be licensed and traded, *ex post* justifications maintain that ownership increases the likelihood that the person most capable of exploiting an invention will attain it. Patents, thus justified, are considered as transaction cost reductions – in terms of informational costs – and a way to overcome the market limitations presented by Coase's famous theorem.

This new understanding of patents is interesting in that it combines elements from both the 'inventor philosophy' and the 'invention philosophy' and repackages the combination in a radically new way: it seeks to bolster the legal status of a person in charge of an invention (which resonates with 'inventor philosophy') but it does not make any ideological commitment to the person who conceived an idea (like the 'invention philosophy'). Moreover, "ex post" justification interestingly focuses attention down the inventive chain to the point of actual production and manufacture – which is the same as the pre-modern monarchical privileges did.

Whether it will eventually replace 'incentives to invent' arguments ('inventor philosophy') for patents or 'incentives to disclose' arguments ('invention philosophy') is still too early to state. If it does, it will constitute yet another ideological distancing from the philosophical commitment to the private inventor which introduced the modern patent laws in the first place.

Theoretical Conclusions

Patent philosophies were ignited at discrete historical times, when the ideological stones of politics were struck by a concentrated and sudden force. The ensuing fate of these philosophies was then to be exposed to the harsh climate of slowly progressing political history which blunted their once sharp edges to the point where they are now but faintly visible.

Patent law became formalized, it developed gradually into a sophisticated system of rules within which only strong corporate players and well-trained lawyers can navigate. In weberian terms, it has become formalized, de-substantialized, cold and rational. Old philosophical justifications have since been evoked mostly for symbolic or rhetorical reasons; a powerful testimony to the ideological past, but less capable of directing legislation than it once was. This was most clearly seen in the American abolition of its unique first-to-invent system in 2011 which was a serious blow to the country's traditions and national prestige in matters of technology.

On the other hand, it does not seem that formalization creates as much tension between formal and substantive justice as Weber's theoretical framework would have us expect. It is undoubtedly true that, in patent policy, formal justice today "infringes upon the ideals of substantive justice" (Weber 1978a:813), and that this has been a consistent development throughout modern patent law's approximately 200 years history – though admittedly more intensely so toward the end of this period.

On the other hand, the "insoluble conflict between the formal and substantive principles of justice" Weber (1978a:893) describes is harder to detect in the area of patent law. It is occasionally seen still today – such as in the campaigns of lobbyists, special

interest groups, and action committees during legislative changes – but the relationship between substantive and formal patent law is today so peaceful that one is betrayed to think that the two are in harmony and alignment.

They are not; indeed, patent law is practically identical in Europe and the United States, despite the fact that the two patent systems are funded on largely opposite principles. They have grown together from two different seeds.

The theoretical reason as to why this development have been able to take place most likely has to do with the sophisticated nature – in terms of technology, law, industry and business – of modern patent law. If anything, this characteristic is one that has been consistently enhanced throughout the history of patent law.

Resultantly – and despite the fact that there has been a stark net growth in patenting in recent times – patenting has become a playing field for huge corporate experts. Whether they are politicians, entrepreneurs, or lawyers, these all share interest in the existence of the system, and stakeholders play globally. For these groups, patent law is a tool, a system the legitimacy of which rests in its procedural predictability and capacity to fulfill their instrumental purposes.

These players are putting their ‘means-rational’ action to its full use, and have little reason to request that the system assures the protection of substantive societal values. To them, patent philosophy is a suitable topic for PowerPoint-slides presented at the conference room, but not interesting in the laboratory or the courtroom (more specifically on this point, see Drahos 2010).

In a word, patent law is today for the expert-investors, and the expert-investors do not care for the interests of the non-expert. As far as they are concerned, the most important thing is that the system has the characteristics of formal rationality:

Juridical formalism enables the legal system to operate like a technically rational machine. Thus it guarantees to individuals and groups within the system a relative maximum of freedom, and greatly increases for them the possibility of predicting the legal consequences of their action. Procedure becomes a specific type of pacified contest, bound to fixed and inviolable ‘rules of the game.’

(Weber 1978b:811)

What the origins of a given system was, whose interests it once sought to advance, and what consequence it has to society are of secondary importance, if any.

An Expert Tool

To Weber, “juridical formalism” constituted a development of the law becoming autonomous from societal concerns, which again was a direct consequence of it being controlled exclusively by a trained group of legal professionals (see Treviño 2008:180–184).

A scenario that was not fully worked-out by Weber was a situation where not only the law was put in the charge of legal experts but where the use of the same particular branch of law was also left to experts. Such a situation would constitute a doubly formally rational legal system. Patent law in this day and age is precisely that. The law is complicated, its subject matter sophisticated, and it is used almost exclusively by strong commercial actors – at least *successfully*.

To these actors, the grounds of legitimacy are of little importance, the only concern they have is that the system runs smoothly and operates predictably. They are what is known in the sociological literature on the law as ‘repeat players’. Such ‘repeat players’ encounter the same laws over and over, and they are thus interested in its predictability and the general direction of the law – not substantive concerns of individual cases (Galanter 1974). This has been precisely the fate of modern patent law (Jaffe and Joshua Lerner 2004; Drahos 2010).

Although it has meant that substantive and formal concerns of the law have not clashed violently it does not mean that patent law has found its solution or its formal-substantive equilibrium. The “insoluble conflict” Weber identified is merely *indefinitely postponed*, as in the third and most absurd legal option presented to Joseph K. in Franz Kafka’s novel *The Trial*.

The fact that it has been possible to push the “insoluble conflict” of patent law out of purview still points to a potentially broader theoretical implication – one that is echoed in findings of the micro-oriented studies of the ‘law and society’ tradition. One ideology is able to accommodate several legal forms and procedural constellations. In ‘law and society’ this means that the same law can be given different ideological interpretations by different people (for instance, Conley and O’Barr 1990; Ewick and S. S. Silbey 1998; Tyler 2006). Thus, two patent philosophies have been able to approach each other procedurally without clashing with each other ideologically.

Weber, it is reasonable to conclude, identified the problem of law correctly, but exaggerated how the problem would play out. Formal law does indeed compromise

substantive law, but there need not be any confrontation. Once fully at the mercy of experts, it becomes a routinized tool which – like the knife or the hammer – may have been designed with a particular purpose in mind but can be put to use in opposite ways and, after a long while, can no longer be said to have any inherent morality.

The assertion of an expert given several decades ago was that

patent protection grew out of a practical need; theoretical justification came later and varied according to time and fashions of thinking.
(Vojáček 1936:3)

This study agrees with the general disparity but reverses the order: it is the practical needs that have changed whereas the same justifications keep being evoked over and over – for each time, with less force.

APPENDIX: LAWS AND CASES CITED

TYPE	TITLE	YEAR	PLACE/ BODY	IMPORTANCE
NATIONAL AND REGIONAL				
United States				
Statute	<i>U.S. Constitution</i>	1788	Delegates of the Philadelphia Convention	Established patents as a federal matter and presents basic argument for intellectual property
	<i>An Act to Promote the Progress of Useful Arts</i>	1790	U.S. Congress	First federal patent law of the United States
	<i>An Act to promote the progress of useful arts, and to repeal all acts and parts of acts heretofore made for that purpose</i>	1836	U.S. Congress	Drew up specification for storage and copy of models and writings relating to patent applications, removed possibility for patent extensions
	<i>Patent Act</i>	1842	U.S. Congress	Increased Patent Office capacity of examiners, introduced design patents
	<i>Patent Act</i>	1846	U.S. Congress	Increased Patent Office capacity
	<i>Patent Act</i>	1863	U.S. Congress	Altered system of remuneration for patent examiners
	<i>Patent Act</i>	1868	U.S. Congress	Implemented rules of Patent Office responsibility in absence or disability of the Commissioner of patents
	<i>An Act to revise, consolidate, and amend the Statutes relating to Patents and Copyrights</i>	1870	U.S. Congress	Laid out the basic procedures for applications to the USPTO
<i>Patent Act</i>	1952	U.S. Congress	Formalized and codified American patent law, made 'non-obviousness' a statutory requirement	

TYPE	TITLE	YEAR	PLACE/ BODY	IMPORTANCE
Case Law	<i>Patent and Trademark Law Amendmens Act (Bayh-Dole Act)</i>	1980	U.S. Congress	Introduced ex parte reexamination and renewal fees. Gave universities, small business and non-profits intellectual property control of their inventions and inventions made with federal funding Provides patent term extension
	<i>Drug Price Competition and Patent Term Restoration Act (Hatch-Waxman Act)</i>	1984	U.S. Congress	(of up to five years) for pharmaceutical patents and allows generics to win FDA marketing approval by submitting bioequivalence studies (as opposed to clinical data, which is costlier to compile)
	<i>Uruguay Round Agreements Act</i>	1994	U.S. Congress	Aligns US patent law with TRIPs, importantly extending possible patent life from 17 to 20 years
	<i>Leahy-Smith America Invents Act of 2011</i>	2011	U.S. Congress	Introduced a 'first-inventor-to-file' principle to American patent law
	<i>Lowell v. Lewis</i>	1817	The Circuit Court for the District of Mass.	Introduced the concept of 'utility' to U.S. patent law
	<i>Pennock v. Dialogue</i>	1828	the Circuit Court for the Eastern District of Pennsylvania	Established that public use bars patenting
	<i>Hotchkiss v. Greenwood</i>	1850	U.S. Supreme Court	Introduced the concept of non-obviousness as patentability requirement in U.S. patent law
	<i>O'Reilly v. Morse</i>	1853	U.S. Supreme Court	Influential decision in the development of the law of patent-eligibility
	<i>City of Elizabeth v. American Nicholson Pavement Co.</i>	1878	U.S. Supreme Court	Established that 'prior use' does not include experimental use
	<i>Egbert v. Lippmann</i>	1881	U.S. Supreme Court	Held that public use of an invention bars the patenting of it
<i>Continental Paper Bag Co. v. Eastern Paper Bag Co.</i>	1908	U.S. Supreme Court	Established the principle that patent holders have no obligation to use their patent.	
<i>Herman v. Youngstown Car Mfg. Co.</i>	1911	Court of Appeals for the Sixth Circuit	Clarified grounds for infringement	
<i>Royal typewriter Co. v. Remington Rand,</i>	1948	Court of Appeals for	Introduced the concept of 'doctrine of equivalents'	

TYPE	TITLE	YEAR	PLACE/ BODY	IMPORTANCE
	<i>Inc</i>		the Second Circuit	
	<i>Great Atlantic & Pacific Tea Co. v. Supermarket Equipment Corp.</i>	1950	U.S. Supreme Court	Only when the whole in some way exceeds the sum of its parts is a combination of old elements patentable
	<i>Brenner v. Manson</i>	1966	U.S. Supreme Court	Utility means practical utility
	<i>Graham v. John Deere Co.</i>	1966	U.S. Supreme Court	Clarified the requirement of 'non-obviousness'
	<i>Diamond v. Chakrabarty</i>	1980	U.S. Supreme Court	Ruled that a genetically modified micro-organism can be patented
	<i>Diamond v. Diehr</i>	1981	U.S. Supreme Court	Ruled that the execution of a process controlled by running a computer program was patentable
	<i>Warner-Jenkinson Company, Inc. v. Hilton Davis Chemical Co.</i>	1997	U.S. Supreme Court	Updated the 'doctrine of equivalents'
	<i>State Street Bank v. Signature Financial Group</i>	1998	Court of Appeals for the Federal Circuit	Defined the scope of a business method patent
	<i>Ex Parte Lundgren</i>	2004	Board of Patent Appeals and Interferences	Found that process inventions do not have to be in the technological arts in order to be patentable
	<i>KSR Int'l Co. v. Teleflex, Inc.</i>	2007	U.S. Supreme Court	Concerning the issue of obviousness as applied to patent claims

Europe

Statute

<i>Statute of Monopolies</i>	1623/ 1624	Parliament of England	Identified novelty and a rudimentary form of 'usefulness' as only grounds for patent
<i>Statute of Anne</i>	1710	Parliament of Great Britain	Copyright to be regulated by the State and the Courts
<i>Constitution française</i>	1791	French National Assembly	Established the grounds for a modern patent system in France
<i>Décret sur les inventions & découvertes en tout genre d'industrie</i>	1791	French National Assembly	First post-revolutionary patent law of France

TYPE	TITLE	YEAR	PLACE/ BODY	IMPORTANCE
	<i>Verfassung des Deutschen Reiches</i>	1871	North German Conf. and four southern German states	First constitution of the German <i>Reich</i>
	<i>Patentgesetz</i>	1877	German National Assembly	First patent law of unified Germany
	<i>Verfassung des Deutschen Reichs</i>	1919	German National Assembly	The <i>Weimar Constitution</i>
	<i>Patentgesetz</i>	1936	German Legislature	Introduced certain rights to individual inventors, in particular employee-inventors
	<i>Verfassung der Deutschen Demokratischen Republik</i>	1949	Third German People's Congress	Constitution of the DDR, updated in 1968 and 1975, a new 1990-version was never implemented before German unification
	<i>Grundgesetz für die Bundesrepublik Deutschland</i>	1949	Parliament. Council	Constitution of West-Germany
	<i>Gesetz über Arbeitnehmererfindungen</i>	1957	Legislature	Current German patent law
	<i>Convention on the Grant of European Patents</i>	1973	Signatory Countries	European Patent Convention the foundational treaty of the European Patent Office
	<i>Patents Act</i>	1977	Parliament of United Kingdom	Updated British patent law and brought it into alignment with EPC
EPO Case Law	<i>BAYER/Carbonless copying paper (T 1/80)</i>	1981	Technical Board of Appeal	Concerning the technical character of the invention as described as a requirement for 'inventive step'
	<i>BASF/Metal refining (T 24/81)</i>	1982	Technical Board of Appeal	Technical character of 'inventive step'
	<i>IBM/Computer-related Invention (T 115/85)</i>	1988	Technical Board of Appeal	Established conditions for patentability of software inventions
	<i>MOBILE OIL/Friction reducing additive (G 2/88)</i>	1989	Enlarged Board of Appeals	Concerning the relationship between novelty and patentability
	<i>BAYER/Plant growth regulating agent (G 6/88)</i>	1989	Enlarged Board of Appeals	Patentable subject matter
	<i>PBS</i>		Technical Board of Appeal	
	<i>PARTNERSHIP/Controlling pension</i>	2000	Technical Board of Appeal	Important to the 'unity of invention' requirement and patentable subject matter

TYPE	TITLE	YEAR	PLACE/ BODY	IMPORTANCE
	<i>benefits system</i> (T 931/95)			
	<i>COMVIK/Two identities</i> (T 641/00)	2002	Technical Board of Appeal	Concerning 'unity of invention' and 'problem-solution' approach to 'inventive step'
	<i>HITACHI/Auction method</i> (T 258/03)	2004	Technical Board of Appeal	Patentable subject matter is merely to be construed as "subject matter having technical character"
	<i>Diagnostic Methods</i> (G 1/04)	2005	Enlarged Board of Appeals	Established criteria for patentability for diagnostic methods
	<i>PITNEY BOWES/Undeliverable mail</i> (T 388/04)	2006	Technical Board of Appeal	Strengthened non-patentability for software

INTERNATIONAL

Treaties

	<i>Paris Convention for the Protection of Industrial Property</i>	1883	Paris	First international patent treaty: as a result of it, patents of any contracting state are accessible to the nationals of other states party to the convention. Established 'priority rights' of applications
	<i>Berne Convention for the Protection of Literary and Artistic Works</i>	1886	Berne	International agreement governing copyrights
	<i>Bureaux internationaux réunis pour la protection de la propriété intellectuelle</i>	1893	Berne	Created the BIRPI
	<i>Institute International des Brevets</i>	1947	The Hague	France, Belgium, Luxembourg, and the Netherlands established the <i>Institut international des brevets</i> (IIB) to centralize searching and archiving
	<i>European Convention Relating to the Formalities Required for Patent Applications</i>	1953	Paris	Simplified and unified the formalities required by the various national legislations for patent applications
	<i>European Convention on the International Classification of Patents for Invention</i>	1954	Paris	Ceased in 1999. convention created the International Classification of Patents

TYPE	TITLE	YEAR	PLACE/ BODY	IMPORTANCE
	<i>Convention on the Unification of Certain Points of Substantive Law on Patents for Invention</i>	1963	Strasbourg	This Convention (<i>Strasbourg Convention</i>) establishes patentability criteria, i.e. specifies on which grounds an invention can be rejected as not patentable
	<i>Convention Establishing the World Intellectual Property Organization</i>	1967	Stockholm	Created WIPO – one of the 16 specialized agencies of the UN. WIPO was created to "encourage creative activity, to promote intellectual property throughout the world"
	<i>Patent Cooperation Treaty</i>	1970	Washington, DC	Provides a unified procedure for filing patent applications to protect inventions in each of its contracting states
	<i>Strasbourg Agreement Concerning the International Patent Classification</i>	1971	Strasbourg	Known as the IPC-agreement. It establishes a common classification for patents, known as the IPC system
	<i>Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure</i>	1980	Budapest	The treaty allows deposits of microorganisms at an international depository to be recognized for the purposes of patent procedure, usually in order to meet the legal requirement of 'sufficiency of disclosure'
	<i>Agreement on the Trade-Related Aspects of Intellectual Property Rights</i>	1994	Marrakech	The TRIPs agreement sets the minimum standards for many forms of IP regulation as applied to national of other WTO members
	<i>Patent Law Treaty</i>	2000	Geneva	Aims to harmonize formal procedures such as the requirements to obtain a filing date for a patent application, the form and content of a patent application, and representation
	<i>Sessions of the Standing Committee on the Law of Patents of the WIPO</i>	1998	Geneva	A forum to discuss issues, facilitate coordination and provide guidance concerning the progressive international development of patent law
	<i>Substantive Patent Law Treaty</i>	<i>Prop.</i>		Aims at harmonizing substantive points of patent law

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