

Innovation : In the Shadow of Law

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Introduction

The innovation's discourse is fuelled with an ever-growing number of conference proceedings, scientific productions and reports. This material accumulates and disseminates writings, arguments and hypotheses like sediments by sea. Innovation is a major site of investigation for all modern societies. Outside of innovation, it seems, no salvation. Law, especially intellectual property (IP), is driven by this vast and wondrous quest. Intellectual property creates the space where inventiveness can be probed, conceived and eventually rewarded. It dovetails the idea of innovation, conditions, it is thought, its process by providing the modes of financially securing innovation or by harnessing tax incentive schemes. The law therefore participates, alongside other disciplines, to the construction of this new order: the innovation order. It partakes to the innovation rhetoric. The latest OECD report on "Science, Technology and Industry Scoreboard 2015 - innovation for growth and society" illustrates perfectly the discreet and omnipotent influence of law in the innovation discourse.¹ In a classic UN style, it reuse many expressions that have become part of the innovation jargon and which are replicated by echo in most studies on innovation: "Productivity is driven by innovation"² or "Innovation is a complex process and often involves many actors and linkages for knowledge production and use".³

¹ OECD, *OECD Science, Technology and Industry Scoreboard 2015: Innovation for growth and society*, (Paris: OECD, 2015).

² *Ibid* at 38.

³ *Ibid* at 142.

In this essay, we will try to identify what part of the innovation discourse is directly attributable to law, notice the extent and effects of the innovation paradigm on law and, conversely, determine what part of law is owed to innovation.⁴ Beyond these technical objectives and theories on innovation, there's a need to recognize the political project implied by the idea of innovation, a project that mobilizes law. Innovation and technology are not without end, they do not proceed mechanically by blind and continuous accumulation of knowledge according to a mechanical movement; they are part of society. Innovation, viewed as a social phenomenon, is necessarily dependant on law.⁵ In particular, law contributes to the language of innovation. By creating words, suggesting meanings, it structures the way we think about innovation and empower those who are interested – the dominant class, some would say - in it.⁶ For sure, there is a legal language on and of innovation but law penetrates more deeply in the formation of the concept of innovation. It interacts with science and is part of all social progresses: “counts of the development of science are incomplete without taking on board the shaping influence of legal imperatives and imaginations, and of necessity the work of legal practitioners and institutions”.⁷ In a Foucauldian view, law contributes to understanding innovation by providing language. This language consists not only to the one taught in law school, but also more broadly and subtly, to the language which individuals attribute credibility and normative values. Institutions and institutional thinking are born from the words of jurists. Law is part of structural communication scheme shaping innovation's goals and methods: it

⁴ OECD and Eurostat, *Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data, 3rd Edition*, The Measurement of Scientific and Technological Activities, (Paris: OECD, 2005) paras 142-143 at 44.

⁵ Giuseppe Tassone, *A Study on The Idea of Progress in Nietzsche, Heidegger and Critical Theory* (Lewingston: Edwin Mellen Press, 2002) starting at 324.

⁶ Building on Latour's work, Jasanoff has elaborated an ambitious research agenda on the interrelation between law and technology challenging the idea of “law lag” offering an original perspective on normative co-production. Technology can grow out of the law. Sheila Jasanoff, “Making Order: Law and Science in Action”, in Edward J. Hackett et al. eds, *Handbook of Science and Technology Studies*, 3rd (Cambridge: MIT Press, 2007) at 761-786. See also on the idea of code as law: Lawrence Lessig, “Code is Law”, *Harvard Magazine* (1 January 2000), online: Harvard Magazine:

<<http://harvardmagazine.com/2000/01/code-is-law.html>>.

⁷ *Supra* note 6 [Jasanoff].

transports our expectations and provide the technics to regulate it. The discourses of innovation and law are therefore consubstantial. These evolving discourses format our current knowledge.⁸

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⁸ Law helps to articulate the way we describe social phenomena. Positivism, pluralism, transhumanism are in this regard as many additional methods of knowledge organisation. To give an simple example: McGill's Transsystemism needs, to distinguish itself and exist, to offer some kind of a productive rationality, a method that can be transformed as a system.

I- Innovation as word or as a concept

The idea of innovation transcends law and other social science; in its elaboration it reaps the fruits of all scientific trees. This cognitive movement is, as we will see, linear and asymptotical to the idea of progress. Innovation often serves as a focal point; it produces discourses. Perhaps is it even its main purpose. To study this discourse is to learn the formation of ideas and its effects on institutions. The decision by Industry Canada to change its name to “Innovation, Science and Economic Development Canada” is already revealing of the desire of politics in the shaping of law and its administration.

We will begin our essay by reflecting on the federating power of innovation. The word innovation immediately mobilise fields such as economics and law. One can see the influence of liberalism and capitalism. Progress is in the semantic core of innovation. It contains the hope of rebirth, change and difference: the idea of novelty, core to the market system, allowing to find its own justification, in itself. Novelty means difference, which means for economists differentiation and price discrimination. This is also why it convenes so easily, perhaps too easily, the idea of intellectual property as a lever of progress⁹; a dynamic property that rewards the creative act. From this technical language, some insights can be gained on our modern society. Innovation assigns an attainable and self-sufficient goal without the need of other kinds of justification. Innovation is a self-driven concept: it produces its own justification. But from a legal standpoint it is already chartered. In the legal discourse innovation calls the laws of invention. Making the term invention and innovation reversible reduces our understanding of a complex phenomenon.

1- The power of the innovation discourse

Before getting to Schumpeter (b), some epistemological remarks are to be made (a). Innovation results from a certain perspective and answers to some important preconceptions posit by law.

⁹ “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”. US Const art I, §8, cl 8.

(a) Innovation as word

The word innovation has a positive ring. The Oslo Manual gives the following definition: “An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations”.¹⁰ But this definition is unsatisfying, deferring it to a future knowledge not acquired yet. The word innovation seems to be perpetually unstable and impossible to precisely frame. Schumpeter refers to it as a movement.¹¹ It cannot be apprehended in a univocal manner. Law, economics, sociology, politics and “hard science” are all mobilized. Innovation is thus a rallying sign, a post sign, a place of cogitation. Innovation creates aspiration and turn on the state machinery to create innovation’s policies and action plans. Rapidly, it is used and shared as a common language by so many and different levels that it becomes a universal theme.

In reality, it’s also a historic word, shaped by ideologies. It’s hard to discern this past because the word is made of underlying reference and statements accepted readily by our own limited knowledge. Our knowledge being limited by our language, it can’t fully account for all the meanings behind the word innovation. It’s easier to define it by the different viewpoints than by a static proposition. Innovation is able to resist any particular or static definition given. But it acts as a prompter for our aspiration.

Thirdly, the word “innovation” is recursive and attempts of definition are bound to failure. One can only partially appropriate its meanings. Its popularity can also be explained by the partial void of the concept. For Schumpeter, who was strongly influenced by the evolutionary theory of Darwin,¹² it attracts “une élite pensante” willing to give to it meaning and adjudicative authority. The thinking of innovation is institutionalising and combined with

¹⁰ *Supra* note 4 at 46.

¹¹ See J. A. Schumpeter, *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle* (New Brunswick: Transaction Publishers, 1934) at Chap 6.

¹² See e.g., Matthias Kelm, “Schumpeter’s Theory of Economic Evolution: A Darwinian Interpretation” (1997) 7 *J of Evol Econ* 97.

some social facts and economic context, an decentralized theory of innovation has emerged.¹³ As of now, innovation brings onto itself numerous studies, from different perspectives. Thus, the importance of the innovation literature in law and innovation, sociology and innovation, etc. It has become a vast enterprise. For instance, McGill University in an attempt to demonstrate its commitment to innovation – whatever it means - created knowledge centers such as the “Innovation constellation” and a Committee on innovation, whose mission is to prioritise certain axis of research.¹⁴ On this, Benoit Godin wrote that “Innovation has become a cliché that, to many, there is no need to define or analyze. The term is applied at every opportunity, some even going so far as to be amazed not to find it in the arts (Oakley et al., 2008) an innovative field it may be, but one that has its own vocabulary (creation) without any need for the concept of innovation”.¹⁵

Yet, this struggle for sense has to be studied. The fundamental reason explaining the popularity of innovation could be our own humanity, the unanswerable questioning of our purpose on Earth. Innovation is a way of creating a collective end for mankind beyond our personal and ultimate faith. Innovation seems to build on Christian eschatology.¹⁶ It carries our efforts to improve our life and the world, reduce pain and confirms the capacity of mankind to furthermore master its environment. Some would qualify our current fixation on innovation as yet another fetishism.¹⁷ Pessimists will see the proposition as a mere utopia.¹⁸

¹³ “Habits of thoughts” to take Veblen’s idea. See Olivier Brette, “Thorstein Veblen’s Theory of Institutional Change : Beyond Technological Determinism” (2003) 10 Eur J Hist Econ Thought 455. Implicit in the essay, the apparition of innovation is closely linked to the emergence of capitalism. See Pamela Samuelson, “Innovation and Competition, Conflicts over Intellectual Property Rights in New Technologies” (1987) 12 Sc, Tech & Human Values 6, at 8 and see also Benoit Godin, “Innovation : The History of a Category, Project on the Intellectual History of Innovation”, Working Paper 1, (2008) Project on the Intellectual History of Innovation, Montreal: INRS.

¹⁴ See <https://www.mcgill.ca/innovation/>

¹⁵ Benoit Godin, “Innovation and Creativity, A Slogan, Nothing but a Slogan”, Working Paper 18 (2014) Project on the Intellectual History of Innovation, Montreal: INRS. Numerous publications perpetuate the myth. See Tom Kelley, *The Art of Innovation*, (New York: Currency/Doubleday, 2001) See other titles like: “Lifting the creativity curtain”, “A Child’s Eye”, “Cross-pollinate”, “Hot Team Share”, “Expect the Unexpected”, “Fail your Way to Success”, etc.

¹⁶ *Supra* note 5.

¹⁷ See e.g. Dan Breznitz, “The Cardinal Sins of Innovation Policy”, *Harvard Business Review* (28 July 2014), online: Harvard Business review <<https://hbr.org/2014/07/the-cardinal-sins-of-innovation-policy/>> and Evgeny Morozov, “Our Naïve “Innovation” Fetish”, *New Republic* (17 March 2014) online: New Republic <<http://www.newrepublic.com/article/116939/innovation-fetish-naive-buzzword-unites-parties-avoids-policy-choice>>

¹⁸ See *supra* note 15 at 20.

Innovation is the buzzword of our industrial techno-centered society. Taken in its more consensual expression innovation is first and foremost technical innovation. It pursues the vast enterprise of pure science and confirm our faith in technology as a mean to control nature. Technology being the instrument of innovation it is consubstantial with it Janus idea, that of obsolescence. Innovation is a way of thinking the unpredictable and making the inaccessible, accessible. Innovation acts as a vector of democratisation of science. The mystery of science is domesticated with the new products that innovation put on the market, elevating consumption to a mode of existing. Technology is reduced and rendered accessible through its goods and products. Innovation leads us to the place of technology in society.

Innovation bridges the scientific discourse and our beliefs. It serves as a mediator between these two orders by simplifying knowledge and objectivising it. As such, it conciliates philosophical reflections on knowledge as power vector and explains the pre-eminence of economic discourse on innovation. What's interesting is that the question of innovation follows the methodology of science and engineering: it asks how to innovate rather than why innovate? By framing such a question, it places social science in the background. Innovation is not science but it shares its sequential and progressive rhythm, its obsession for anteriority, which conditions the need of novelty, the accumulation of knowledge needed for innovation and a linear causal vision of time. It is then not surprising to see the preeminent place of engineers and entrepreneurs, as the frontlines class for innovation.¹⁹

(b) Schumpeter

In 2005, Canada's Supreme Court made clear that law cannot and should not maintain artificially an advantage bound to disappear with the next innovation. To quote the Supreme Court: "Under the modern law of passing off, a passing-off action by the appellant was bound to fail. [...] The alleged distinctiveness of the product consisted precisely of the process and techniques which were now common to the trade. [...] Granting such a

¹⁹ For engineers, See Thorstein Veblen, *The Engineers And The Price System* (New York: Kelley, 1921). For entrepreneurs, they are Schumpeter's champion. See also, David Reisman, *The Social Economics of Thorstein Veblen* (Northampton: Edward Elgar, 2012) starting at 224.

claim in these circumstances would amount to recreating a monopoly contrary to basic policies of the laws and legal principles which inform the various forms of intellectual property in our legal system. The appellant is no longer entitled to protection against competition in respect of its product. It must now face the rigours of a free market and its process of creative destruction.”²⁰ In this infringement case regarding the famous Lego block whose patent had expired, economics have triumphed over law. The attempt by the plaintiff to protect the shape of the Lego block under trademark law failed. The SCC adopted a Schumpeterian approach to reject the claim.

While the famous concept of “creative destruction”²¹ greatly spread Schumpeter’s works, it also set tone of the narrative for innovation. He identifies innovation as a key element in economic cycles and, consequently, for researcher to study. Schumpeter’s work on innovation is highly conceptual, bare of facts.²² It explains its lasting impact. One commentator recently wrote: « My view is that TED (*Theory of Economic Development* (1911) is a deeply evolutionary piece of work, a dramatic illustration of the power of language unencumbered with formulae or data, and I can only marvel at its capacity to stimulate new thoughts at every fresh reading”.²³

It is in his work *Business Cycles* that Schumpeter elaborates on his basic ideas of innovation. He identified different factors of change in an economy and among them he isolates what he called New Combinations.²⁴ The entrepreneur, the agent of change, is able to use these. Profits for an entrepreneur means successfully realising the execution of new combinations. Without them, economic cycles would be static and potential only.²⁵ Later on, he distinguishes between natural and incremental evolution of products. For practices, methods and creative answer to be truly innovative, a breakthrough innovation, the cause needs to be external to the actual

²⁰ Kirkbi AG v. Ritvik Holdings Inc., [2005] 3 S.C.R. 302, 2005 SCC 6, para. 69.

²¹ See Joseph A. Schumpeter, *Capitalism, socialism and democracy* (New York: Taylor & Francis, 2003) at 81.

²² *Supra* note 11 at 64.

²³ Stan Metcalfe, “J.A. Schumpeter and the Theory of Economic Evolution”, Working Paper 1213 (2012) Max Planck Institute of Economics Evolutionary Economics Group at 2.

²⁴ *Supra* note 11 at chap. 4.

²⁵ *Ibid* at chap 5.

operating mode and routines. He therefore states that creative answer have the characteristic of being unpredictable and radically affect the economy. Innovation is new production functions.²⁶

Admittedly, Schumpeter struggles on innovation, he takes it for a fact. It is the link between the business cycle and evolution: evolution is spurred by innovation which in turns create a new business cycle. Grounded in the evolutionary cause and effect relation, innovation is an engine of growth. The amplitude of transformation varies and depends on context and on the sector of the industry. For Schumpeter, innovation needs to break radically with the current process, but some new combinations can substantially increase profits without being innovation. Innovation is for him the response of the market to a new technology or a new method of doing business; its effects. Innovation produces a new economic cycle, changing price. Instead of simply moving along a marginal cost curve, it shifts it.²⁷ Another remark worth making is that the firm is the center and the basic economic unit of Schumpeter innovation's theory. The path and growth of the firm under the influence of innovation, being internalized or not, is very similar to one of a human being. Innovation gives birth to a new firm and obsolescence leads to its death. "Most new firm are founded with the idea and for a definite purpose. The life goes out of them when that idea or purpose has been fulfilled or has become obsolete or even if, without having become obsolete, it has ceased to be new. That is the fundamental reason why firms do not exist forever. Many of them are, of course, failures from the start. Like human beings, firms are constantly being born that cannot live. Others may meet what is akin, in the case of men, to death by accident or illness. Still others die a « natural » death, as men die of old age. And the « natural » cause, in the case of firms, is precisely their inability to keep up pace in innovating which they themselves had been instrumental in setting in the time of their vigor".²⁸ This theme of decline is central in Schumpeter's work, criticising the viability of the capitalist

²⁶ See Oscar Lange, "Notes on Innovations" (1943) 25: 1 Rev Econ & Stat 19 at 21. "Innovations are such changes in production functions, i.e., in the schedules indicating the relation between the input of factors of production and the output of products, which make it possible for the firm to increase the discounted value of the maximum effective profit obtainable under given market condition".

²⁷ Joseph A. Schumpeter, *Business Cycles* (New York: McGraw-Hill, 1939) at 84 and Joseph A. Schumpeter, "The Creative Response in Economic History" (1947) 7:2 J Econ Hist 149 at 150.

²⁸ *Supra* note 27 [Business Cycles] at 90-92.

system on the long run. Schumpeter also introduced the idea of free riding²⁹ indirectly: “Whenever a new production function has been set up successfully and the trade beholds the new thing done and its major problems solved, it becomes much easier for other people to do the same thing and even to improve upon. In fact, they are driven to copying it if they can, and some people will do so forthwith”.³⁰ The creative destruction is here to point out the necessity of capitalism to constantly innovate. Statism will lead to its fall.

(c) The soldiers of innovation.

The concept of a leading or dominant class of actors for an economy is not a new idea. Marx chose the proletariat³¹, Veblen the engineer³², Schumpeter the entrepreneur³³. What about the jurist? Can he be agent of change?³⁴

The personification theory translates abstract principles into reasons to action or political mobilisation. In the same way, Florida suggested the rise of a Creative Class, a new genre of Foucault’s Cultural Centers (les foyers de culture).³⁵ Again, by identifying a specific categories of individual, it is possible to produce a modeled discourse which allows a certain interpretation and possible control by the given class. Precisely, Schumpeter’s entrepreneur, with its competence and predispositions, is a new object study for what constitutes innovation. While the definition of innovation remains unsatisfying, at least tracks are given to study innovation in politic science, sociology and psychology.

²⁹ Mark A. Lemley, “Property, Intellectual Property, and Free Riding” (2005) 83 Tex L Rev 1031.

³⁰ *Supra* note 27 [Business Cycles] at 98.

³¹ See Karl Marx and Friedrich Engels, *Manifesto of the Communist Party* (Moscow: Progress Publishers, 1969)

³² *Supra* note 19.

³³ *Supra* note 24 [Business Cycles] at 100.

³⁴ In particular, the cost of legal services needs to be considered seriously in modern economies. Thomas S. Kuhn, “The Essential Tension: Selected Studies in Scientific Tradition and Change Tradition and Innovation in Scientific Research” cited in Calvin Taylor, *The Third (1959) University of Utah Research Conference on the Identification of Scientific Talent* (Salt Lake City: University of Utah Press, 1959) at 162–75.

³⁵ Borrowing from Gadoffre. Michel Foucault, *On the Government of the Living* (New York: Picador, 2016) at 8. R. Florida, *The Rise of The Creative Class*, (New York: Basic Books, 2012) at 38 -39: “The distinguishing characteristic of the Creative Class is that its members engage in work whose function is to “create meaningful new forms””. His categorisation seems particularly arbitrary and very different of Veblen’s or Schumpeter’s hero.

(d) The geography of innovation

Recent studies have showed the geographical dimension of innovation.³⁶ Pioneer in this new field of social geography, AnnaLee Saxenian's works are invaluable in that effect. She compared the Silicon Valley and Boston's route 128, especially the intellectual elite such as the engineer and entrepreneurs and their migration pattern to understand the social and economic phenomena.³⁷ One of her first findings was the State's importance in the emergence and development of these innovation poles. Considerable investment in national defense and the reuse of military technology for civilian use explain partially the importance of these locations. The technocentrism of innovation directly results from the war efforts. As much as innovation is humanistic, its bases are profoundly anti-humanistic.³⁸ It may also explain why representations of innovation are often detached from any social consideration and casted in their limited end, progress and profit, instead of being placed in their larger social context.³⁹ Second, innovation is also caused by externalities, such as social or political measure that are only accessible geographically or resulting from some interdependencies that the market cannot account for.

⁴⁰ For the social economist Marshall, writing in the end of XIXth century, innovation depends on the technical

³⁶ Adam Smith seems to have a very different conception of the creative class, compared to Florida. "The labour of some of the most respectable order in the society is, like that of menial servants, unproductive of any value, and does not fix or realize itself in any permanent subject ; or vendible commodity [...] In the same class must be ranked, some both of the gravest and most important, and some of the most frivolous professions: churchmen, lawyers, physicians, men of letters of all minds; players, buffoons, musicians, opera-singers, opera-dancers, etc. [...] Like the declamation of the actor, the harangue of the orator, or the tune of the musician, the work of all of them perishes in the very instant of its production.

³⁷ Her introduction on the recent migrants lay well the foundation of her research: "We know little about the economic contributions of highly skilled immigrants, particularly in an increasingly global economy. This study explores the extent to which highly skilled immigrants create jobs and wealth for the California economy—both directly, as entrepreneurs, and indirectly, as facilitators of trade and investment linkages to their countries of origin. The analysis suggests that policy makers need to recognize the changing relationships between immigration, trade, and economic development in an increasingly global economy". AnnaLee Saxenian, "Silicon Valley's new immigrant high-growth entrepreneurs", (2002) 16 *Econ Dev Q* 20 at 20.

³⁸ Céline Lafontaine, *L'empire cybernétique, Des machines à penser à la pensée machine* (Paris : Seuil, 2004) at 33. Also, AnnaLee Saxenian, "Inside-Out: Regional Networks and Industrial Adaptation in Silicon Valley and Route 128", (1996) 2 *Cityscape: J Policy Dev and Res* 41 at 42. She adds that "in spite of their common origins in postwar military spending and universitybased research, Silicon Valley and Route 128 have responded differently to intensified international competition".

³⁹ Science accumulates ideas that are necessarily provisional. See Paul Veyne, *Foucault*, (Paris: Albin Michel, 2008) at 124.

⁴⁰ Henri Bourguinat, "Économies et déséconomies externes", (1964) 15 *Revue économique* 503 at 506. See also, *supra* note 27 [Business Cycles] at 89: "External economies are reductions in unit costs that are due to favorable circumstances incident to the growth of an industry, notably to its growth in a certain locality".

progress of the industry and on a qualified labour force, which are external to the firm.⁴¹ Location of a plant and zoning are therefore key factors of economic growth. The volume of transactions and the human capital available in a region are key parameters to account for. Silicon Valley was able to concentrate important level of knowledge and competence while relying on a very dynamic labour market. Saxenian concluded from her observations that where skills are localized and highly concentrated and recognized as factor of innovation, norms, social or legal, adapt to sustain a greater labour mobility. The importance of movement of the creative employee seems to be positively related to the economic dynamism of the region and adaptability of the judicial rules. Non-compete clause (NCC) and their level of enforcements could therefore have a direct impact – mostly negative - on innovation. Saxenian's hypothesis presupposes that law has an important role to play in the economy, assumption that is questionable. The precise effects of laws are always hard to assess. Many scholars resist the instrumentalization of the law generally supported by positivists and, more recently, the school of Chicago. As such, positive law is one normative technic among others to regulate socio-economical processes and some sociologists would defend that law is not always the most efficient. The mechanism of formalising law can be so long that by it becomes obsolete by the time of its voting. Still, this original thesis developed by Saxenian and other social geographers, did not leave the jurists indifferent. Gilson will espouse the theory advanced by Saxenian. In a seminal article published in 1999 he advocates the negative impact of the NCC on the economy.⁴² We owe to Saxenian for having open a new perspective for law, one that challenges the traditional and limited views on NCC which, until then, was contained to a contractual technic without much bearing on the whole. Its mechanisms were entirely internalized by the law of the parties. Traditionally, private law is coordination of private interests, it lives in intersubjective relations. Only in exceptional circumstances will social considerations constrain drafters. But Saxenian's thesis forces us to consider a larger public interest that

⁴¹ Alfred Marshall, *Principles of Economics* 8th ed (New York: Palgrave MacMillan, 1890).

⁴² Ronald Gilson, "The Legal Infrastructure of High-Technology Industrial Districts: Silicon Valley, Route 128, and Covenants Not To Compete", (1999) 74 NYU L Rev 575-629 at 578.

needs to scrutinize the exercise of some private rights and their effect on society. The private law should no longer acts as a right of coordination but as a right of direction.

Any social function given to a right implies normative values.⁴³ To encourage employee's mobility underpin a particular idea of innovation and progress. Innovation, we repeat, is the tabernacle of our beliefs. Hasn't Schumpeter become the prophet of innovation to some? The evolutionary thesis that leaves us no place for alternative: end of capitalism, degeneration of mankind or relentless efforts to innovate.

Heidegger and other anti-progress authors already warned us⁴⁴: innovation produces pernicious effects on economy and humanity. Art, in the words of Heidegger, instead of technique, opens us to truth. Innovation pollinates the perhaps elusive idea that happiness is secured by science and its consumable by-products. Innovation perpetuates the myth of the industrial society.

II - The laws of innovation

Sociologists seem to have found some recurring factors for innovation at a regional level and intellectual property laws seem to be absent from the list. In fact, recent studies show that innovation doesn't depend on a minimal threshold of protection. Innovation therefore grows under the shadows of PI, not under its lights. At the same time, highly innovative regions seem to be jurisdictions with high IP protection. The relationship between innovation and IP is complex. However, creativity and inventiveness are not necessarily obtained through strong intellectual property. (1). Saxenian points rather to contract law and its impact on the mobility of knowledge. (2).

1) The dusk of IP

⁴³ Pierre-Emmanuel Moysé, "L'abus de droit: L'antenne" (2012) 57: 4 McGill LJ 859.

⁴⁴ *Supra* note 5 at 199-200 "Instead of blindly attacking technology and attempting to neutralize the dominion that it has imposed on the world by devising rational patterns of historical development leading to the advent of the new era, Heidegger invites us to become aware of the inescapable truth that there is no exit from the technological world. Technology cannot be mastered or overcome because it is the destiny that was sent to humanity by the play of Being". See also Ronald Wright, *A Short History of Progress* (Toronto: House of Anansi Press, 2004).

Innovation and IP doesn't easily combine. The Machlup report presented to the American Senate in 1958 stated that "none of the empirical evidence at our disposal and none of the theoretical arguments presented either confirms or confutes the belief that the patent system has promoted progress of the technical arts and the productivity of the economy".⁴⁵ IP's abolitionists are making some progress, especially given the importance of information in today's economy and the suspicion arising from any forms of legal appropriations which now appear as a misuse.

a) Invention as candidate for innovation?

Schumpeter makes a distinction between innovation and invention. Invention can be productive will not necessarily reach the market. Invention is the intermediary between ideas, origin of innovation, and innovation. Numerous inventions will never see the light.⁴⁶ By contrast, innovation refers to the successful commercialisation of the invention. That's why we need the entrepreneur.⁴⁷ Schumpeter distinguishes the entrepreneur from the inventor. "Many inventors have become entrepreneurs and the relative frequency of this case is no doubt an interesting subject to investigate, but there is no necessary connection between the two functions. The inventor produces ideas, the entrepreneur "gets things done," which may but need not embody anything that is scientifically new. Moreover, an idea or scientific principle is not, by itself, of any importance for economic practice: the fact that Greek science had probably produced all that is necessary in order to construct a steam engine did not help the Greeks or Romans to build a steam engine; [...] Finally, "getting new things done" is not only a distinct process but it is a process which produces consequences that are an essential part of capitalist reality". While the affirmation contains truth, it is fragile. Particularly for the jurist, the "inventor" refers to a specific and well charted domain. In fact, on this point, Schumpeter shows its lack of knowledge of IP.

⁴⁵ US, Fritz Machlup, 85th Cong 2d. Sess, An Economic Review of The Patent System, *Study of the Subcommittee on Patents, Trademarks, and Copyrights of the Senate Judiciary Committee*, Committee Print (1958). See also F. Peritz, "Patents and Progress : The Incentive Conundrium", cited in Annette Kur, *The Structure of Intellectual Property Law : Does One Size Fits All ?* (Northampton: Edward Elgar, 2011).

⁴⁶ *Supra* note 21 at 147.

⁴⁷ *Ibid* at 163.

He doesn't explain how new combinations are to be conciliated with existing patent and IP. Another source of confusion is the idea of imitation, which is treated differently in innovation theory and in IP. The latter sees in the innovator an infringer when he has borrowed from an existing work or invention.⁴⁸ The recent Hargreaves report raises concerns about the effect of what is called the patent thicket: a growing number of patent granted by public authorities: "The exclusive right that a patent confers is intended to incentivise innovation. But the presence of patents imposes transaction costs on others arising from the need to identify and license other people's patents, or those associated with disputes over patent rights. A higher total volume of patents leads to increasing transaction costs, particularly in markets which are patent intensive. The cost/benefit trade-off of the patent system may shift away from the socially optimal position – i.e. where innovation incentive benefits outweigh transaction costs by the largest margin".⁴⁹

Levine and Boldrin are also very critical: "there is no empirical evidence that they serve to increase innovation and productivity, unless the latter is identified with the number of patents awarded – which, as evidence shows, has no correlation with measured productivity. This is at the root of the "patent puzzle": in spite of the enormous increase in the number of patents and in the strength of their legal protection we have neither seen a dramatic acceleration in the rate of technological progress nor a major increase in the levels of R&D expenditure [...] In the long run, though, even the positive partial equilibrium effect may be more apparent than real: the existence of a large number of monopolies due to past patent grants reduces the incentives for innovation as current innovators are subject to constant legal action and licensing demands from earlier patent holders".⁵⁰

⁴⁸ *Supra* note 13 [Samuelson] at 11.

⁴⁹ Ian Hargreaves, "Digital Opportunity : A Review of Intellectual Property and Growth", Independent Report UK, at 59. This problem is especially important in patenting of computer programs and telecommunication. See at 9.

⁵⁰ Michele Boldrin and David Levine, "The Case Against Patents", Working Paper 2012-035A (2012) Research Division, Federal Reserve Bank of St-Louis at 2-3.

b) The creative employee

The protection achieved by IP benefits to the right's holder who, in many cases, is not the creator or the inventor. In today's creative economy, the employer and not the employee is generally by law or by contract the first owner of intellectual property. In this context, it is difficult to see how IP can incentivize to create when the person who creates is not directly rewarded. In some jurisdiction, the employee gets some forms of compensation. This is the case in Germany for instance since 1957 for the employee inventor. The mechanisms is entirely internalized, if it is implemented at all by the firms. Canada's law doesn't account for the different origin of the property. S. 13(3) of Copyright Act specifies that where the author of a work was made in the course of his employment by the employer, the employer shall be the first owner of the copyright. For patent law, the law is silent and the question is addressed by contract to the same effect. Certainly, under copyright law, the creator benefit form some moral rights but they are rarely exercised. Catherine Fisk has researched the effect of such a systematic transfer on creativity. "A foundation of the modern law of intellectual property is that firms own some of the ideas that exist in the minds of the employees"⁵¹, "The conflict between employee freedom and corporate control of intellectual property sharpened as courts realized the importance of knowledge to economic development and began to recognize workplace knowledge as an asset of the firm rather than an attribute of the employee".⁵² It places the question of innovation no longer in the hands of IP, but also employment law, where confidentiality in NCC are often present. The paradigm of innovation relies heavily on the workforce, not only IP.

⁵¹ Catherine Fisk, "Working Knowledge: Trade Secrets, Restrictive Covenants in Employment, and the Rise of Corporate Intellectual Property, 1800-1920" (2001) 52 *Hastings LJ* 441 at 441.

⁵² *Ibid* at 442.

The affirmation that IP stimulate innovation leads to the extension of the domain covered by IP. It also favors and explain the aggravation of criminal sanctions in the case of IP infringement⁵³ which seems to contradict the openness and inclusivity called by the very actors of the new economy. Currently the possibility of using protected IP by an innovator has been considerably narrowed. In the case of software, IP has revealed its limit as it is ill suited to codes and programming practices. The digital convergence, the apparition of new products and the integration of different types of property interfere with each other, causing confusion on the range of protection.⁵⁴ Paradoxically, patent laws seems to allow and favors rent seeking by firms, leading to statism and insecurity but it is not so much the IP system which is to blame than the cost of litigation which allows for incredible leverage.⁵⁵

2) Knowledge, new property

Modern IP replaced the traditional institutional protection of knowledge through professional organizations or guilds. Prior to modern IP, profession and craftsmanship were under control of guilds and other forms of associations. The later had no interest in any technology that could threatened their hegemony over a particular craft or occupation: "This distrust of Innovation and change has been cited as one of the principle causes for the collapse of the guild system".⁵⁶ Guilds were the guardians of tradition in the apprenticeship and resisted innovation. The liberalisation of the practice of professions allowed to protect the intrinsic quality of some property. Patent was seen as an antidote to trade secrets, encouraging the transfer of information. The specification of a patent should contain the know-how and some knowledge or savoir-faire in consideration for a limited protection granted by the State. In reality, it seems that the patent's specifications do not accomplish

⁵³ Peter Yu, "The Alphabet Soup of Transborder Intellectual Property Enforcement" (2012) *Drake L Rev Discourse* 16 at 25.

⁵⁴ *Supra* note 50 at 2. The problem not only concerns patents but all of the intellectual property than can exist on an intangible good. See also, Estelle Derclaye and Matthias Leistner, *IP Overlaps: A European Perspective* (Oxford: Hart Publishing, 2011).

⁵⁵ See Clayton M. Christensen and Michael Overdorf, "Meeting the Challenge of Disruptive Change", *Harvard Business Review* (March-April 2000), online: [Harvard Business review <https://hbr.org/2000/03/meeting-the-challenge-of-disruptive-change>](https://hbr.org/2000/03/meeting-the-challenge-of-disruptive-change).

⁵⁶ *Supra* note 13 [Samuelson] at 32-40.

this goal. It seems that even secrets are not readily divulged through patents. Moreover, some scholars suggested that patenting is used as a way to prevent employees from transferring knowledge. “Firm may use patents to protect against knowledge leakage through employee movement (Risch 2007). Although a patent may not cover tacit knowledge per se, it may cover a product or method incorporating that tacit knowledge. Assuming the firm can bear (or credibly threaten to bear) enforcement costs, the expropriation risk posed by a departing employee would be limited to informational assets that fall outside its patent portfolio”.⁵⁷ Also, some other studies tend to show that researchers obtained their information from other sources such as published articles.⁵⁸ The benefit of society is therefore almost null, especially when firms tend to try to broaden the scope of protection to encompass information and ideas, such in the case of computer software and business methods patents.

Patent law continues to perpetuate the idea of progress as linear and proportional to the available quantity of information. As such, a monopoly was acceptable because of the ideas communicated. But the reality is that calling on the greed of individuals doesn't achieve the proposed goals. The holder of IP, to make his or her property more profitable, is incentivised to minimise the communication of secrets and growth of competition. In the same manner, firms would rather retain their most important property, the creative employees, to the detriment of innovation.

Non-compete clause (NCC)

To attract businesses to a particular jurisdiction, states often attribute the ownership of intellectual property to employers rather than to employees;⁵⁹ however, some academics have argued that this practice detracts from

⁵⁷ Jonathan M. Barnett and Ted M. Sichelman, “Revisiting Labor Mobility in Innovation Markets” (2016) USC CLASS Research Paper No. 16-13; USC Law Legal Studies Paper No. 16-15 at 10.

⁵⁸ James E Bessen, “The Value of U.S. Patents by Owner and Patent Characteristics” (2006) Boston University School of Law Working Paper No. 06-46.

⁵⁹ See *Copyright Act*, RSC, 1985, c C-42, s 13(3); Steven Cherenky, “A Penny for Their Thoughts: Employee-Inventors, Preinvention Assignment Agreements, Property, and Personhood” (1993) 81 Cal L Rev 595.

the individual's incentive to innovate.⁶⁰ NCC obviously reassures employers. It especially targets executives and creative employees because of their access to sensible information.⁶¹ It encourages training of the workforce and prevents the knowledge to be transferred or used by a rival firm. It also mitigates the risks of recruiting new employee. While logical, it's difficult to measure how relevant they are in reality. While Gibson attributes the Silicon Valley's success to the non-enforcement of NCC, firms seems to have reorganized accordingly to minimise information leak and found mechanism to mimic the effect of NCC.⁶²

In today's information-era society, any restraint on information seems to create important unwanted social and economic impact. Current research tries to evaluate the macro-economic effects on a region. These preoccupations are not entirely novel, but only now are they considered from a different perspective. The traditional reason that can be found at the article 2089 of the Civil Code of Quebec seems too narrow: "The parties may stipulate in writing and in express terms that, even after the termination of the contract, the employee may neither compete with his employer nor participate in any capacity whatsoever in an enterprise which would compete with him". What makes an NCC reasonable or not in law rests on a holistic review of its scope and varies on a case-by-case basis. Some courts will invalidate an NCC on the basis of a single, overreaching component. With reference to the spatial component, Quebec, Canadian, and US courts limit the range of NCCs to the area covered by the employee's particular activities, as opposed to that of the employer's business in general. A general trend in case law permits greater restrictions in the highly specialized and global context of "knowledge industries", and the use of Internet-based business models that extend the range of

⁶⁰ See Richard A Booth, "Give Me Equity or Give Me Death: The Role of Competition and Compensation in Building Silicon Valley" (2006) University of Maryland Legal Studies Research Paper No 2006-44; Susan Cartwright & Nichola Holmes, "The Meaning of Work: The Challenge of Regaining Employee Engagement and Reducing Cynicism" (2006) 16 Human Resource Management Rev 199; David Lametti, "Publish and Profit? : Justifying the Ownership of Copyright in the Academic Setting" (2001) 26 Queen's LJ 497.

⁶¹ *Ubisoft Divertissements inc. c. Tremblay*, 2006 QCCS 2677, para 46. While the NCC are sometimes valid in Quebec, it's not at all in California.

⁶² Adam Lashinsky, *Inside Apple: How America's Most Admired--and Secretive--Company Really Works* (New York: Grand Central Publishing, 2012)

employees' activities. In the United States, the law governing NCCs reflects a spectrum of unfavourable to favourable attitudes that vary from state to state. California and North Dakota have prohibited NCCs in employment contracts. Colorado allows NCCs only for executive and management-level employees. In contrast, Florida and Texas have adopted a more employer-friendly attitude toward NCCs. In France, NCCs were first considered valid *a priori*, but were criticized for preventing skilled or talented workers from staying in their fields of predilection. The burden has since shifted to employers. The "legitimate interests" of an employer cover specific know-how in addition to sensitive commercial information, especially if such knowledge was acquired working in a highly specialized and competitive field.

In France and Israel, NCCs must provide additional financial compensation for the employee in addition to the compensation she receives from her work. In Canada, Israel, and the United States, courts can strike down an otherwise reasonable NCC if it is considered contrary to the public interest (for example, creating a monopoly or depriving a region of an essential industry, service, source of wealth, or technology). Israeli law distinguishes itself from that of the other jurisdictions for developing a more explicit and sophisticated account for the role of public interest in the judiciary analysis of NCCs. In a Israeli case, the judge said the following: "as a rule, the employer's interest in preventing a former employee from competing with him, without this coming to protect additional interests (beyond the non-competition), such as trade secrets or customer lists, is not a legitimate (nor a "protected") interest".⁶³ Such an interpretation of legitimate interest basically put an end to most non-compete clause in Israel, the Start-Up Nation! What's even more interesting, it's the line he mark between the contractual power and the proprietary thought: "Thus, the reasons I have explained justify a middle ground, according to which in the overall balance freedom of occupation prevails when all that stands against it is the employer's interest in non-competition, while freedom of contract prevails when alongside it stands a legitimate interest of the employer such as a "proprietary" or "quasi-proprietary" interest of the employer. It is then the

⁶³ LA 164/99, *Promer and Checkpoint Software Technologies Ltd v Redguard Ltd*, PDA 34 294,(given on 4.6.99) (in Hebrew) [*Checkpoint*] at para 11.

case that limiting competition “for its own sake” ... does not protect any “legitimate interest” of the employer at all. It goes against the public good and it will be invalidated in the framework of “public policy”.⁶⁴ It confirms the importance of liberty in all of its forms in innovation. And it does seem that innovation is better served without these clause, which in their effect are either neutral in the best case, or particularly nefarious in the worst case. In California, giants such as Google and Apple, to counter this mobility, seems to have agreed to collude to enforce unwritten no-hire arrangements.⁶⁵

On the other hand, limitation of competition which is intended to protect the interests of the employer in trade secrets, customer lists, reputation and the like the “legitimate interests” of the employer, and as a rule does not go against public policy. For instance, some American states acknowledge the common law doctrine of “inevitable disclosure”, allowing employers to seek and receive an injunction prohibiting a former employee from working for a competitor, even in the absence of an NCC.

Our knowledge is limited at a zone in-between human and society. The human being, like Foucault said, can't be object of knowledge because knowledge is said through him or her. Here lies all of our occupation. There's no transcendental Truth, or metaphysical direction for our thought. No God, like Nietzsche announced. Therefore, the discourse is generating its own inertia, its own truth from which thinking organism builds and in a recursive movement, confirms the initial discourse as true. All of our institutions, from the most complex and massive to the jurist, are all built and following without exception this movement and constitutes part of what we could call the historic discourse.

⁶⁴ *Ibid* at paras 16-17.

⁶⁵ Although these arrangements were ultimately dissolved following a settlement with the Department of Justice for alleged antitrust violations (*id.*), they illustrate how firms that are precluded from using noncompetes may have strong incentives to use other mechanisms to protect their human capital investments. *Supra* note 55 at 11.