

# Law and Economics – Limits of Analysis: The Case of Intellectual Property

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## 1.1. INTRODUCTION

The main theme of my talk today<sup>1</sup> is the Law and Economics of intellectual property and the limits of analysis. I will critically observe a shift within the Law and Economics literature from the public goods/incentives paradigm to the property paradigm as the main framework to analyze intellectual property, and I will focus on the shortcomings of the two frameworks, and especially of the latter, which ignores the key question of the philosophical justification in allocating IPR. It should be emphasized that my critical analysis of the contemporary writings in the Economic Analysis of intellectual property should by no means be understood as a rejection of the discipline, as I really believe that Law and Economics is the most important development, especially for the realm of legal studies, because it is the first attempt for lawyers to try to analyze law from a scientific perspective, both on the normative level and on the positive level. Even if this scientific perspective is not sufficient to assess and evaluate the existing legal rules and does not yield definite results, it is still significantly important for the way that we think about law. It is also very important to proclaim this loudly. Law scholars and jurists have been encountering difficulties to communicate between themselves because different legal systems have different traditions, customs, concepts etc, which go much beyond the same wording of legal rules. One of the advantages of Law and Economics is that it provides universal language for discussion and

<sup>1</sup> This text presents Prof. Eli Salzberger's keynote lecture delivered at 2<sup>nd</sup> Polish Law & Economics Conference on May 6, 2011.

it is enriching each others thinking about specific legal issues, entrenched in particular legal and indeed general cultures.

Today I will attempt to achieve two goals. One is to talk about the Law and Economics of intellectual property and the shift of paradigmatic thinking within Law and Economics from the incentives/public goods to the propriety frameworks. As will be elaborated in the second part of my talk, I am critical of this shift. But I would like to begin with some more general philosophical insights about the Law and Economics movements including its biases, limits and developments which are also relevant for the case of intellectual property. So the first part of the lecture will concentrate on Law and Economics in the framework of the philosophy of science, moral and political philosophy and the philosophy of law. Indeed it is a very general topic but I would like to give you my take on the place of Law and Economics within the grand maps of moral, political and legal philosophies and its evolution within the grand picture of the development of science. By doing so, I will also say a few words about the science of economics and where it is heading.

## 1.2. LAW AND ECONOMICS WITHIN A GRAND PICTURE OF THE DEVELOPMENT OF SCIENCE AND MORAL AND POLITICAL THEORIES

The Law and Economics movement is rooted in developments in jurisprudence, which are the result of developments in moral and political theory, on the one hand, and in developments in the philosophy of science, on the other hand. This statement applies both to the normative analysis of Law and Economics (whereas efficiency or other normative criteria are set as the primary goals of law) and to the positive analysis of Law and Economics (which attempts to find the effects of legal norms on society, on the economy, on culture and on other indicators.

The dominant view of the ancient world did not distinguish between positive questions about the world (how things actually work; how physical, biological, chemical and human powers shape reality) and normative question as to how we ought to construct the world and our conduct. The lack of distinction between *what is* and *what ought to be* characterized also the approach towards the law. Plato, for example, believed that everyone possesses full knowledge of morality as well as explanations for the physical, biological, chemical components of the universe and the way they shape natural powers and human behavior. In order to understand how the world works, we just have to unlock out existing knowledge through thinking and intuition. That is the reason why he thought that philosophers have to rule the world.

It was Aristotle who rebelled against this Platonic view and can be viewed as the founder of modern scientific thinking. He acknowledged a distinction between what is and what ought to be and argued that it is not intuition or

thinking that will answer questions about how the world operates, what the functions of various materials and powers in the universe are, what the law is. It is rather a process of scientific inquiry for the achievement of which we have to conduct measurements and experiments. Aristotle perceived his time. Science, as we know it, was born in the 17<sup>th</sup> century with the theory of Francis Bacon about the development of knowledge. Bacon argued that what we can know about the world is obtained through constructing a theory, which can be tested by hypotheses, experiments, induction and deduction. According to Bacon, our knowledge accumulates with time. Knowledge is like building a wall – a stone on top of a stone, thus over time we have more knowledge about the world. His writings were supplemented by Karl Popper who argued that a scientific venture is scientific only if it is a process in which one can actually falsify hypotheses. But if you apply Popper's strict analysis of knowledge then many of the scientific work today, in physics for instance, are not scientific because they are based on pre-existing assumptions or on pre-suppositions (foundational theories) which cannot be proven; they are assumed and ordinary scientific research is constructed on their basis.

A long historical jump brings us to Thomas Kuhn and his important 1962 book about scientific revolutions and ordinary scientific ventures. Kuhn disputed Bacon's picture of the development of science. He argued that it is maybe an ideal or idealistic account, but it is not the real description of scientific enquiry and progress. Scientists, Kuhn argued, conduct their investigations within well-defined paradigms and a-priori frameworks. Those are taken as given and are not matters to be proven. Ordinary scientific ventures attempt to prove various elements within the given framework. Scientific research is therefore not a process resembling a construction of a wall, stone by stone, but rather like completing a puzzle, the frame of which is given. Scientists try to put the right pieces of the puzzle in the right place; some of them do not fit-in and are sometimes forced-in, and hence once in a while the whole framework collapses and then we shift to a different framework, a different paradigm. Ordinary scientific research is ruled by the paradigm and this dictates the research agenda, sources of funding, scientists' acknowledgment and hierarchies, etc.

Kuhn himself declared that he is not a relativist and over long periods of time our knowledge does accumulate. His ideas, though, were taken up and pushed one step further by post-modernism proclaiming that everything is subjective, viewed as truth from a specific point of view, while different truths are asserted by other points of view. So basically while Bacon said that our knowledge accumulates with time, Kuhn actually said that our knowledge is obtained within a set paradigm, once in a while the paradigm collapses and we witness a paradigmatic shift, a construction of a new paradigm within which a different research agenda is set and new knowledge is accumulated. Law and Economics is a paradigm in the Kuhnian sense. It views, analyzes and evaluates the law in a different way from previous or indeed parallel paradigms. Law and Economics is maybe the dominant paradigm in legal studies and research

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Law and Economics is also a consequence of changing paradigms (or even meta-paradigms) in moral and political theory. The dominant concept of law until the 18<sup>th</sup> century was *Natural Law à la Plato* or *à la 13<sup>th</sup> century Thomas Aquinas*. As a theory of law, *Natural Law* fitted the prevailing beliefs about science and morality. Since law was given by God, or dictated by human nature, everything that contradicted its substance was not viewed as law at all. Hence, *Natural Law* did not distinguish between the questions "what law is" and "what the law ought to be"; Law is what it ought to be – the universal and eternal norms of God or human nature. This paradigmatic perception of the law had direct effect on the explanation and description of various legal doctrines and concepts. For example, *Common Law* was not described by *Natural Law* theories as we describe it today – judge made law, but as judges' declaration of the existing law created in the course of the centuries by the English nation.

The paradigm of *Natural Law* collapsed in the 18<sup>th</sup> century with the Enlightenment and the developments in moral theory and political philosophy. The social contract theory (Hobbes, Locke, Rousseau) set the new paradigm of political philosophy: political communities are not given by God, they are human creations, achieved by consensus. An alternative moral theory to natural law, *Utilitarianism*, was developed by Bentham and Mill. It turned out to be a very important foundation of Law and Economics. *Utilitarianism* basically denies the deontological claim to the existence of universal and eternal good and bad. Good and bad exists only on the individuals' level and they are totally a subjective matter. What we have to do in order to be moral is to try to maximize the good (everyone defines the good differently) for the whole community or maximize the utility of society. This moral principle is of course one of the bases for wealth maximization, efficiency and other concepts in economics and in Law and Economics.

These changes, together with the birth of social sciences in the 19<sup>th</sup> century, each of them developing its own scientific language and methodology, brought about a shift in the dominating paradigm regarding the law. From *Natural Law* we are shifting in the 19<sup>th</sup> century and early 20<sup>th</sup> century to legal Positivism. Law detaches itself from morals and develops its own pure theory of law (the title of one of Hans Kelsen's books). Legal Positivism attempted to build a scientific approach to law without any connections to other methodologies and other disciplines. According to Kelsen legal norms are created by legal norms, under a roof of a meta-legal basic norm. Philosophical legal positivism was transformed to legal formalism and the belief that inner-legal doctrines can arrange a normative system that can solve every legal question and that every judge can reach this solution.

The positivist-formalist approach to law is still quite dominant in many law schools in Europe and North America and characterizes the rhetoric of legal practice as well. However, a backlash to this paradigm occurred already in the first half of the 20<sup>th</sup> century with the emergence of Legal Realism.

The Realists pointed out that law in the books and in law schools is very different from the law on reality grounds. Legal decisions are not only the result of formalist legal analysis but also (or mainly) the result of the structure of institutions that enforce and adjudicate them, the result of the individuals who operate in these institutions, their political and moral ideology and character in general. The Realists concluded that in order to understand and evaluate the law better and more scientifically legal scholars should approach the social sciences and try to cooperate with them, rather than enclosing themselves with legal doctrines, the construction and application of which are not a real scientific exercise. It should be noted that the social sciences themselves were born as a result of the same meta-paradigmatic changes that brought to the shift from Natural Law to Positivism. The study of human behavior - psychology, the study of political institutions - political science, the study of societies - sociology - and of course the birth of Economics, were all connected to the Enlightenment and the shift from viewing God in the center stage to viewing the rational human being as the center stage actor of the universe. Indeed, this Realist call was welcomed by economists and provided the aspiration for the emergence of Law and Economics in the 20<sup>th</sup> century.

The paradigmatic changes in the theory of law in the mid 20<sup>th</sup> century were also advanced by historical developments and particularly by the great economic depression in the US and the aftermath of World War II, which further discredited the positivist-formalist approach to law (on its own bases the trial and convictions of Nazi and Japanese war criminals could not have taken place) and required fresh legal thinking. Side by side with the emergence of Law and Economics we witness the return of Natural Law-Natural Rights legal approaches and other non-positivist approaches, such as the theory of Ronald Dworkin, which affected real legal changes, especially in the realm of constitutional law and adjudication. Law and Economics was not the only offspring of Legal Realism; Critical Legal Studies and Law and Society were another example of such offsprings. Using insights and scientific methodologies from the humanities as well as from softer social science to analyze law,CLS positioned itself as a lefty ideological rival to Law and Economics, locating (wrongly, to my view) Law and Economics as a right wing movement.

The history of the modern science of economics is also very relevant for the understanding of Law and Economics. The birth of modern economics is yet another consequence of the Enlightenment and is associated with Adam Smith's "Wealth of Nations", the importance he attributed to free and competitive markets and the invisible hand which results in market equilibrium. Adam Smith would have probably turned in his grave had he known what mainstream Law and Economics is doing with his basic ideas. His grand theory included not only market analysis which is based on the perception of human beings as rational self maximizing agents, but also on the analysis of human beings as ruled by emotions and intuitions; Smith wrote not only about sense and reason, but also about sensibility and sensitivity, components which were

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abandoned by economics in the course of the 19<sup>th</sup> century when economic was formalized and developed its methodological tools that we still use today. The formalization of economics brought it to narrow down (in comparison to Smith) and focus on traditional economic markets, on things that we usually associate with economics or with the economy.

What we are witnessing in the last few decades is the expansion of the science of economics. With the incorporation of game theory from mathematical and social choice and public choice into the science of economics, it expanded to tackle fields that were not part of its traditional focus on markets of product and services: political markets, the analysis of institutions and indeed the analysis of norms' systems including the law. The Imperialism or colonization of economics to other fields which were not perceived in the 19<sup>th</sup> century a part of the science of economics, brought economists to believe that it is the science which can be used to analyze any human interaction, whether it is within the traditional economic markets or not. Economics today returns to a grand theory mode à la Adam Smith or other 18<sup>th</sup> century thinkers. It is noteworthy that Critical Legal Studies, the great rival of Law and Economics is also the result of the return of a grand theory, in which traditional theories from the humanities, such as post-modernism, are extended and utilized in much broader realms than its origins. In other words, what we have been witnessing in the last few decades is actually an opposite phenomena to what we witnessed in the 19<sup>th</sup> century. While the 19<sup>th</sup> century was characterized by the division of the social sciences, each with its own methodology and limited field of study, the second half of the 20<sup>th</sup> century is characterized by the return of grand theories that attempt to explain everything. The law or legal studies is an interesting field in which two grand theories clash; Law and Economic and Critical Legal Studies are the reflections of these two grand theories in the field of law.

The expansion of the science of economics makes its definition a challenge, which is significant also to the understanding of what Law and Economics is all about. Many definitions of economics focused on the subject areas it analyses. I prefer a definition that focuses on its unique scientific methodology, rather than on the realms in which it is applied. Economic takes a very complicated reality, which cannot be analyzed with the rigorous scientific tools it utilizes, and thus the first stage of economic analysis is simplifying the complex real world into a workable imagined reality. In the second stage, mathematical and graphical tools are applied to analyze this simplified reality. This can be done on the positive level – findings regarding the inter-relations between the various variables of this simplified reality, or on the normative level – prescribing the best actions to be taken in order to achieve a certain normative goal. In the third stage, the results of the model are used to derive policy conclusions for the real world.

There are at least two bold advantages for the methodology of economics. Firstly, it is scientifically evolutionary. Far-reaching simplifying assumption: enable to construct a simple and workable model and in the course of time it can be developed by the relaxation of some of these assumptions (at the



Another very common assumption in economics and in Law and Economics models, this time on the positive level of analysis, is that of rationality. But again rationality has various different meanings, from thin rationality of being able to have a complete and transitive order of preferences, to thick rationality of utility maximization or self-wealth maximization. Despite the fact that a growing body of psychology scholarship shows in recent years that people do not behave rationally in the way assumed by economists, the vast majority of Law and Economics literature is still based on this assumption. Both assumptions elaborated here, which are also interrelated and affect each other's nature, are part of the paradigmatic thinking in Law and Economics. However, one can also point to the development of clear distinct sub-paradigms within Law and Economics, some of which attempt to relax the thick rationality assumption.

Law and Economics can be characterized as a comprising five sub-paradigms, which can also be viewed vis-a-vis the scientific methodology of economics as different generations of the movement. The first generation, which is by no means passe as it still dominates Law and Economics scholarship, is the Chicago School. It applies traditional neoclassical microeconomic theory to legal questions and the world of law. Assuming thick rationality, full information and a normative goal of wealth maximization or static efficiency, the Chicago school utilizes the supply and demand curves, the competitive market equilibrium analysis, the classification of market failures as justifications for central intervention, and applies them to legal questions. Such an approach can be found in the writings of Richard Posner, one of the icons of Law and Economics whose 1972 book was a major impetus to the rise of the movement. Competitive market outcomes are assumed by the Chicago School to be desirable because they generate wealth maximization, but also utility maximization and Pareto optimality. Only when we have to intervene in the market, we have to choose one of these normative goals, whereas the Chicago school adopts wealth maximization. Because of the thick rationality assumption (together with other crude assumptions such as full information of the law) central intervention is justified only in limited cases of market failures: lack of competition or problems of monopoly, monopsony or cartel, public goods, lack of asymmetric information and externalities. Hence, the result of the Chicago analysis is a strong preference for markets and contracts and the a-priori rejection of regulation or other central intervention. This type of analysis associated Law and Economics with the political right.

Alongside to the Chicago School a rival Law and Economics scholarship had been developed – the Yale School. It uses more complex and less rigid assumptions as to individuals' and institutions' utility functions, and as to information and knowledge of legal rules. It recognizes on the normative side additional goals to efficiency like distributive justice. These differences result in recognition of a much broader range of market failures and desirable intervention by the government. However, the more complex assumptions and normative goals yield less rigorous models.



The second generation sub-paradigm of Law and Economics is Transaction Cost and Neo-Institutional Law and Economics. The Chicago market model assumes that all market players are individuals who are aiming to maximize their preferences or utility. In the real world and especially in the world of law many of the market interactions involve the state, corporations, institutions etc. Such players are very complex organizations comprised of various groups of people with various incentives and preferences and therefore we cannot treat them as individuals. This is one of the tasks of Neo Institutional Law and Economics, which incorporate institutional structures as endogenous variables within the analysis of law. Neo Institutional Law and Economics incorporates also Ronald Coase's path-breaking 1937 article about the firm and his 1960 article about transaction cost. Coase showed that transaction costs are the most important factor with regard to both the market structure (contracts vs. firms) and in choice of legal norms.

The fourth generation of Law and Economics - Behavioral Law and Economics - is only about a decade old. It incorporates a body of knowledge from psychology and sociology in order to refine the crude rationally assumption used by the Chicago School, as well as other behavioral patterns, such as behavior under risk and path dependence in decision-making. Despite the rich new insights of Behavioral Law and Economics, which were instrumental in offering new explanations and tools to analyze specific phenomena, it has not yield a new general model so far that can challenge or replace the neoclassical model.

A new generation of Development Law and Economics is now beginning to emerge. Previous generations assumed that the normative goal of economic analysis is wealth maximization or efficiency, meaning static efficiency. Their models were looking for or examining whether legal norms or other social and economic arrangements are generating the maximum of goods and services for any current level of inputs using existing technology. Economic policies around the world, however, are nowadays aiming to achieve the greatest growth, development and progress, which are missing from a static efficiency analysis. A slightly higher percentage of growth today means a much higher static income or wealth in any given point in the future. In other words, economic analysis so far took the level of technology as exogenously given. Innovation which brings to technological advancement is probably the key factor for growth and thus cannot be ignored and ought to be incorporated as an endogenous variable within the general model analyzing the effects of different legal rules.

This new paradigmatic thinking is crucial to intellectual property law, on which I will elaborate below, as IP law is perceived to be one of the main vehicles for generating innovation. But the new approach is by no means relevant only to IP law. Take the case of torts. The Learned Hand's formula viewed from a Development Law and Economics perspective is very problematic because if you apply the existing technology as the standard for precaution measures (to be outweighed against the harm and multiplied by probability) then you actually disincentivize those who can develop new technologies, from developing a better preempting measures as they can rely on the existing

economics and in Law and level of analysis, is that of different meanings, from thin transitive order of preferences, and self-wealth maximization. My scholarship shows in recent way assumed by economists, nature is still based on this which are also interrelated and paradigmatic thinking in Law and development of clear distinct of which attempt to relax the as a comprising five sub-the scientific methodology of the first generation, which and Economics scholarship, neoclassical microeconomic Assuming thick rationality, with maximization or static supply and demand curves, the classification of market failures relies them to legal questions. of Richard Posner, one of the is a major impetus to the rise are assumed by the Chicago alth maximization, but also when we have to intervene normative goals, whereas the cause of the thick rationality such as full information of nited cases of market failures: monopsony or cartel, public externalities. Hence, the result markets and contracts and al intervention. This type of political right.

customs, or on the current state of technology. Hence, a model of tort law from the Development Law and Economics point of view (such model has not been offered yet but I am sure that somebody will offer it shortly) will be different from the traditional Law and Economics analysis of torts.

Other fundamental concepts of Law and Economics will have to be revisited, including the Coase theorem, which is basically taking technology to be exogenous. When one argues that transaction costs are the sole consideration relevant to the decision whether to allocate the right to pollute to the factory, or the right not to be polluted to the neighbors, one ignores a key factor of who is better equipped to develop a new innovation that will enable to eliminate this harm better. Only incorporating innovation or the state of technology as an endogenous variable in the analysis of efficient liability rules, will yield a result that maximizes dynamic efficiency. Within this emerging field, Law and Economics scholars will have to look for economic literature, which has not been utilized so far within the paradigm, such as Neo-Schumpeterian economic analysis, which is very different from neoclassical analysis. Interestingly, initial writings within this new sub-paradigm derive general conclusions regarding the law and legal institutions that are not very far from some of the recommendations of Critical Legal Studies, which was perceived in the last twenty years as a big competitor of Law and Economics. Therefore this new sub-paradigm within Law and Economics has far reaching ramifications when a broad legal theory perspective is applied. The Emerging field of Development Law and Economics, which will definitely occupy more and more Law and Economics scholarship in the future, raises old-new philosophical questions. What is the optimal rate of growth? Is growth identical to progress or to utility maximization? Does higher growth make us happier? And what should be an optimal target of the distribution of growth over time, are some of these questions.

The relatively long survey of the roots and history of Law and Economics is directly relevant to the law and economics of intellectual property. Intellectual property is about central intervention in the market by providing not only legal entitlements but also monopolistic powers, with very problematic effects vis-a-vis the traditional neoclassical paradigm. It is about innovation and progress, i.e. dynamic efficiency. It challenges the crude rationality assumption. So the survey should be referred to as an important background for questions regarding the normative analysis of intellectual property rights. The more general lessons to be learned from our journey so far is that we always have to be aware that when we conduct our Law and Economics work, we work within one of its sub-paradigms, pre-assuming various factors which are much more complicated in the real world. We also have to bear in mind that the normative goal when evaluating legal norms or trying to prescribe legal norms for our society and legal system, is exogenous to the science of economics. Using different normative goals or different economic methodologies will yield different results and policy recommendations.

Let me say a few words about the normative economic analysis of intellectual property.

### 1.3. ECONOMIC ANALYSIS OF INTELLECTUAL PROPERTY – PARADIGMATIC SHIFT FROM INCENTIVES TO PROPERTY

Intellectual property has become a very serious matter and so has the Law and Economics of intellectual property. It is of great importance in a sense that debates about the desirable regime of intellectual property have more real world effects than debates in any other field of Law and Economics. A debate about whether the remedy for a breach of contract should be specific performance of damages is important; it has some fascinating philosophical ramifications, but its result, one way or another, does not bring about a significant change on the ground, on the economy and on society. In contrast, the different views regarding the desirable IPR have immense potential effects on the economy, on culture and on society. Extending patents from 20 to 30 years or shortening copyright from 70 to 50 years will have economic ramifications far beyond any change in legal rules on which there is a debate within Law and Economics in other areas. Estimates today assess the current value of intellectual property higher than the value of all other sorts of property together: real estate, tangible and even financial instruments. Intellectual property has immense impact on social structures, on the new class of high-tech industry. It has immense effect on the culture that we consume as well. It has significant effect on politics and interests groups' activity, especially on the international level and it is an emerging source for tension among nations. Imagine a world in which intellectual property rights are abolished or significantly reduced. It would have been a very different world. Whether it would have been a better or worse world is an open question.

The effect of IP on our world is even more striking considering the fact that intellectual property is actually a new concept. It was coined only in 1967 when the United Nation established the World Intellectual Property Organization, encompassing different legal doctrines – patents, copyright, trade secrets trademarks and others – under one roof and under a unified legal concept. This is a good example for the philosophy of science and paradigmatic thinking discussed above. The new term – intellectual property – paved the way to a new paradigm which pre-assumes information to be an object of property. I will elaborate on the shift of the Law and Economics literature in this field from the incentives/public goods paradigm to the property one. But already at this stage it can be argued that one of the explanations for this shift is the new term, which utilizes the title “property” to describe historically much more limited private law rights relating to creations and innovations. One example of the effects of the new paradigmatic thinking about information are recent Law and Economics publications that suggest treating trade secrets or contractual agreements within firms as property rights, rather than contractual rights, under the auspices of intellectual property. The cycle completes a full circle in further expansion of intellectual property in recent years partly due to recommendations of the Law and Economics literature.

What is the basic justification for awarding intellectual property rights? Why do we have to award a person or a company with a property right on

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d Economics will have to be s basically taking technology to allocate the right to pollute e neighbors, one ignores a key w innovation that will enable ting innovation or the state : analysis of efficient liability amic efficiency. Within this ill have to look for economic in the paradigm, such as Neo- y different from neoclassical his new sub-paradigm derive institutions that are not very cal Legal Studies, which was

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history of Law and Economics intellectual property. Intellectual et by providing not only legal very problematic effects vis-a- out innovation and progress, rationality assumption. So the t background for questions I property rights. The more so far is that we always have d Economics work, we work rious factors which are much ive to bear in mind that the ying to prescribe legal norms to the science of economics. mic methodologies will yield native economic analysis of

information? One can point out four basic philosophical foundations or four grand approaches justifying intellectual property rights, two are within the realm of deontological morality and two within the realm of teleological morality. The Natural Law – Natural Rights foundation à la John Locke is the prime deontological theory. According to it, we have a natural right to own the products of our labor, whether it is a physical product or a virtual one. The natural rights theory cannot confirm the current laws of intellectual property because if accepted, on the one hand, intellectual property rights would have not been limited in duration (patents are limited for twenty years and copyrights for seventy years), and on the other hand, intellectual property rights would have not been granted to inventions or creations which are the result of sheer luck (e.g. the invention of Viagra), rather than purposive work investment. The same applies to the second deontological foundation of Kant and Hegel, according to which intellectual property rights should be granted to reflect the autonomy, self-fulfillment or flourishing of the creator. Again, accepting these moral bases would lead to IPR not limited in time, but only to works that express the personality of its creators. IPR would, therefore, have not been granted to mere technical compilation of data, such as compilation of databases, which enjoys an intellectual property right protection in the EU.

The two teleological grand frameworks for the normative analysis of intellectual property are Utilitarianism and Republicanism. The Utilitarian approach and its derivatives is the source for the old paradigm of Law and Economics of intellectual property, which I will discuss shortly. Intellectual property rights, under this roof, are justified as long as they promote the sum of individuals' utilities (or welfare or wealth) in society. This path can also confirm with the U.S. constitution, which vested in Congress the power to enact laws defending copyrights and patents in order to promote the progress of science and *useful arts*. The Republican framework can also be considered teleological as it justifies IPR as long as they result with a good society. However, this goodness is not measured by mere maximization of utilities, but rather by achieving an attractive and just society, which promotes discursive foundations for a democratic culture and civic association. From a Law and Economics point of view a possible difference between the Utilitarian and the Republican theories is that the latter does not assume that people have exogenous preferences and that the only collective enterprise is to aggregate the preferences. Republican political theory in economic terms believes that our preferences are not exogenous but endogenous to the market and the collective decision-making processes. Through market transactions, meetings, deliberation, persuasion, individual preferences can be changed to more other-regarding preferences, enabling higher utility frontiers. State institutions and substantive law ought to incentivize these positive changes of preferences. The Republican foundation might be the most interesting challenge for the future development of Law and Economics.

Until recently the dominant approach towards intellectual property within the Law and Economics literature was that of the incentives/public good paradigm. It is founded on a Utilitarian-based justification shifted to wealth

would have not allocated and expanded intellectual property rights. Their requirement for monetary incentives does not mean that in lack of such incentives society would have been worse-off, or, in other words, the basic analysis has to endogenize the institutional structure and establishment of corporations as an integral part of the public good analysis. These corporations are comprised of different groups of individuals whose incentives structures are very different from each other – employees (who do not own their creations), managers, share owners etc. The simple picture portrayed by the incentives paradigm is thus much more complicated.

Even if we assume that there is a need for monetary incentives to create one can argue that lead-time, service, reputation and other similar factors would provide such sufficient incentives within the free market, negating the characterization of the products as public goods, meriting central intervention. Moreover, technological changes of the last decades enable to exclude in many areas products that were non-excludable in the past. For example, in the area of copyright, with the current technological means a creator can exclude readers or listeners or viewers unless they pay for the creation or per view or for a subscription or for access; an electronic copy, in contrast to a physical one, remains under the control of its creator and thus no copyright protection is needed to enable its creation.

The second premise of the incentive paradigm is that intellectual property rights are the best mechanism for central intervention. Let us assume that monetary incentives are required to generate an optimal level of innovation and creation. Are copyright and patents the best way to achieve the desirable incentives? Law and Economics scholars believe so because property rights can generate a market in which voluntary contracts can facilitate transactions that will derive an efficient allocation, maximizing wealth in society. But the major problem with that belief is that IPR create monopolies and the markets they generate are not competitive. The information will be sold at a monopolistic price, bringing to a deadweight loss.

A related problem is the intellectual property paradox, which I think is a serious challenge to the incentives paradigm. Creations and innovations, which have close substitutes, for example a new medication for headache, will not enable their owners to behave like a monopoly. They will be priced at a near competitive market price, and thus intellectual property rights would not really make a significant difference and might not be needed at all. In contrast, those huge, very important, very significant inventions to our daily life, for example a new drug for AIDS, will enable a full exploitation of a monopoly. Their price will not be afforded by those who are really in need for them, and the prime purpose of central intervention – maximizing society wealth or welfare – would be obstructed. This constitutes the intellectual property paradox, the main problem that the incentives paradigm suffers from.

In addition to the direct deadweight loss, IPR generate a second type of monopolistic powers. Rendering exclusivity in informational goods gives right holders strategic advantage in informational markets and allows them to exercise control over informational goods far beyond the carefully defined list

of rights and the economic purposes they were designed to serve. Intellectual property laws have turned out to be a major means of expanding market power, reducing competition and concentrating control over production and distribution of informational and derivative goods and services, far greater than the specific monopoly granted to the patent or copyright holder for a particular creation. Copyrights are being used strategically in order to increase barriers on entry (which are otherwise low) and to reduce the risks of competition. If you want to include something in a textbook you are writing, the costs of clearing rights especially in complicated and multi-facade creations are quite high and therefore the likelihood that a copyright holder will bother to engage with an individual writer are much smaller than the likelihood that a copyright holder will engage with big corporations, mega producers of content. Similarly, it was shown empirically that filing for patents is serving functions other than securing incentives to create or invest. Indeed, patents are being used strategically, often in aggregation, in order to defend against hostile acquisitions and patent wars, to prevent competitors from entering a market, and to maintain a strategic market lead. It is not surprising, therefore, that the economic studies have not found correlation between the number of patents applications and the level of innovation.

An additional problem with IPR as the best mechanism to generate incentives is transaction cost. Acquiring a patent requires preparing application, registration and sometimes litigation. Various studies have shown that the costs of maintaining a patent system outweigh the total value of patents. But high transaction costs characterize also IPR that do not require registration, such as copyright. Since materials protected by copyrights have increased expeditiously in recent years, whereas the intellectual proprietary regime is covering more and more informational works and affords protection to types of works, or new aspects of works, which used to be in the public domain (i.e. data bases), and each use requires a license, the cost of content has been significantly increasing and copyright law creates serious impediments on generating new works and innovations. Licensing is becoming more expensive not only for users but also for the right-holders. It may require legal counseling regarding the scope of copyright protection and the legal definition of authorized uses. Right holders are more likely to incur the cost of licensing when they expect to benefit, i.e., when they license the work for commercial use. They may be reluctant, however, to incur the high cost of licensing for non-commercial uses. Consequently, licensing costs may prevent the use of works that would otherwise become available, thus impeding access and subsequent creation and contributing to increasingly unequal distributive effect.

As stated above, intellectual property rights have significant problems from the internal perspective of economic analysis (in addition to critique from other normative and theoretical perspectives). Are there alternative mechanisms to generate monetary incentives to produce informational goods? Bearing in mind that IPR have only a second order justification from a Law and Economics own perspective, it is puzzling that such alternative mechanisms have not been examined seriously by mainstream Law and Economics literature.

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A market failure of public goods can be overcome by government production of the public good. Indeed, under Communism inventions and creations were basically centrally created, directly or indirectly. But otherwise it is also the government that sponsors public universities and research institutions to produce information. One can argue that there are threats from a democratic theory perspective to information created by the government, but one has to admit that the power of mega corporations which are sometimes stronger than governments, dictating which culture we consume and which gadgets we use is not a weaker threat than democratic theory.

Incentives can be generated also through systems of subsidies ex-ante or prizes ex post. Another type of legal regime to generate incentives is through liability rules or unjust enrichment law. The Calabresi-Melamed theory of private law can be a useful framework to analyze the advantages and disadvantages of liability rules as opposed to property rules, and I would add unjust enrichment rules as a third option, to protect the entitlement of information, or as a mechanism to incentivize people to innovate, invent and create. Unjust enrichment rules mean that the owner of the entitlement can claim not the losses that he suffered from the use or the appropriation of the entitlement (i.e. liability rule), but the profits that were generated by the infringement. Calabresi and Melamed constructed on the bases of the Coase theorem a model in which transaction cost determine which rules (liability or property) are more efficient in protecting an entitlement. The transaction costs involved in operating both the patent and copyright systems are huge, as mentioned above, and demonstrate that unlike physical property, protection of the entitlement to information might be more efficient through liability or unjust enrichment rules. The later will also prevent monopolistic pricing and thus will generate much more competitive markets.

An important point to mention here is that all the legal and public policy tools mentioned above are possible substitutes to IPR. Some of them already exist in different countries and are overlapping with IPR, creating inefficient over-incentives. Take the case of universities, in which tenured scientists are paid a fixed salary in order to invent and create. Their recognition and promotion depend on their achievement and they can also be awarded specific grants for research projects or prizes for their works. They do not need additional incentives. However, we see today more and more universities that are significant players on the patent field. Not only that allowing universities to benefit from patents create overlapping incentives and is therefore inefficient (the public good failure has been remedied already by the fact the scientists are paid regular wages, grants and prizes), it motivates universities to shift their research focus to creations and inventions that have a potential profit from IPR, abandoning basic research in favor of applied research and commercialization, thus risking academic freedom. IPR for universities has the risk of dictating the way in which scientists are assessed and are incentivized – to do things, which will bring the university money. It is a very problematic phenomenon. Generally what I am trying to say is that a serious problem of the current legal regime is that on top of intellectual property we have other sort of incentives and from

A Law and Economics perspective university inventions and creations should not be granted the same extent of intellectual property as private creators or firms which are not supported by public money and cannot compete on grants and prizes.

Returning to the grand picture of Law and Economics' incentives paradigm and the normative analysis of the desirable IPR regime, we are confronted in full force with one of the major problems of Law and Economics in general, which is an acute problem in the case of IPR – the question of the normative goal. What do we want from an optimal regime of intellectual property rights? Do we want to maximize utility? Do we want to maximize wealth, growth, progress? What should be the time framework for such maximization? What should be the territorial unit? Since information leading to innovation is one of the prime mechanisms for growth, the question of the time unit for designing the right IPR regime is very important and contrasts traditional – static efficiency geared Law and Economics – with development – dynamic efficiency Law and Economics. Since information is a sort of commodity that easily crosses geographic borders, the geographical unit for tailoring the desirable IPR regime is of extreme importance. What we are witnessing today is that the perceived efficient IPR rules for the US are enforced in the entire world through international treaties (e.g. TRIPS) and organizations (e.g. WTO). The fact that the current IPR laws might be good for the United States, does not mean that these laws are good intellectual property laws for other countries of the world. In other words, the current IPR laws can be explained in light of a public choice analysis of positive rule-making and rent seeking on the international level (on top of the domestic levels). The existing laws demonstrate the problem of a lack of equilibrium between normative and positive analyses of the public good/incentives paradigm (on the bases of same behavioral assumptions Law and Economics analysis cannot predict that the enacted laws will be the desirable ones).

To the conceptual-philosophical problems mentioned above and all the other points of criticism regarding the incentives paradigm, one should add the most significant practical problem of Law and Economics analysis of IP – the measurement problem. Even if we are convinced that incentives are needed and that the best way to generate them is intellectual property rights, we have to translate the theoretical analysis into positive laws. So far the science of economics, and Law and Economics included, had failed to prescribe the optimal IPR laws in terms of scope and duration. We are witnessing over the last couple of decades a significant expansion of intellectual property rights in most realms. Such expansion does not correspond to the technological developments that should have been pointing to exactly the opposite trend. Cyberspace, the Internet, the way that we can exclude by technology, the much cheaper way of distribution, communication, cooperation, should have led to exactly the opposite trend, to actually limiting intellectual property rights in duration and scope. The limits of analysis of Law and Economics scholarship in prescribing the exactly or nearly exactly efficient intellectual property rights

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are one of the causes for the paradigmatic shift in the literature from the incentives to the propriety paradigm.

Contributed to this shift was the extension of copyright by twenty years, which the American Congress passed in 1998, giving huge additional profits to the content industry. What was especially striking in this legislation is that the extension of 20 years was granted also for existing works. This legislation, dubbed the Mickey Mouse law because it extended copyright over this popular cartoon figure which was about to expire (one can guess the role played by the Disney corporation, as well by other mega production companies, to achieve this legislation), could have not been justified by the incentives paradigm. There was no need to generate incentives to create for already existing creations. But some of Law and Economics icons, like Posner and Landes, supported this law, and the bases for this support had to come from a different theoretical framework. This support (and, of course, the developments on the ground) gave the new framework, which I entitle the *propriety paradigm*, a big push.

An important theoretical foundation for the new Law and Economics paradigm regarding intellectual property was the Tragedy of the Commons theory (or rather a twist of this theory) put forward half a century ago by Harold Demsetz as a positive theory of the emergence of property rights in land and natural resources. Harold Demsetz's theory described the market process in which an efficient property rights regime emerges. It was thus a positive analysis, which was in a sense also a normative theory; it pointed to equilibrium between normative and positive analyses (due to the spontaneous emergence of norms with no central intervention). The new propriety paradigm in intellectual property adopted the Harold Demsetz's theory, shifted it from a positive to a normative theory, requiring central intervention, shifted its focus from analyzing scarce resources that are rival and limited to intellectual property which is non-rival and unlimited. Demsetz himself recently wrote that he opposes the attempt to apply the tragedy of the commons theory to the normative analysis of intellectual property.

It is noteworthy that Demsetz's theory can serve as an interestingly positive analysis framework for some phenomena within the intellectual property world. For example DRM – how people protect their information by technology, and, on the opposite side, Creative Commons or open source which are basically bypassing inefficient or over-incentivizing intellectual property rights through contracts. So Demsetz's framework is very interesting, but not for normative justification for intellectual property in the first place. A good example for the paradigmatic shift of the Law and Economics of IPR can be found in the comparison between the 1989 writing of Landes and Posner with their writings from 2003. The earlier article reflects the public good/incentives analysis in which the authors recognize, on the one hand, the need for intellectual property rights in order to overcome the non-excludability of information or in order to generate incentives to create, and on the other hand, the non-rivalrous nature of information which ought to set limits on IPR (duration and scope) to maximize the usage of information. The 2003 writings do not mention at all the non-rival aspect of intellectual property or



information creators to own their creation, as opposed to writings within the incentives paradigm, which focused on this core question.

I believe that the incentive paradigm is superior to the property one. The points of criticism against it are valid but the economic methodology is well equipped to deal with them within the existing framework, rather than avoiding the core questions regarding IPR, which characterize the property paradigm. The traditional categorization of different IP rights – patents, copyright, etc – might not hold water, and a possible next step in the field would be to examine different categorization. For example, although major IPR issues in both the high-tech industry and the pharmaceutical industry relate to patents, the results of their analyses within the incentive paradigm are very different. Patents in the high-tech industry are not needed to generate incentives to create, due to the relatively small investment in R&D, technological exclusion means and a much shorter life span; IPR here might even obstruct innovation. In the pharmaceutical industry patent protection is crucial because of the relatively very high investment in R&D required to develop a new drug. The fact that unlike copyright, the duration of patent protection was not extended significantly might be due to the conflicting interests of the different industries for which patent law is relevant. But this example can prompt also a different categorization of rights in information (far beyond some contemporary proposals to tailor existing IPR), which will be the result of applying the incentives framework more rigorously.

The concluding practical advice for Law and Economics students and scholars, in the field of IP and beyond it: when you construct your sophisticated models, always ask yourself what are the exogenous positive and normative premises on the bases of which the model is constructed. How would the model change if the premises were modified? Both points and the mere question the model attempts to address are part of a paradigm, and it is important to be aware of the fact that our work is conducted within paradigmatic framework.