

## Comments on the Law and & Experimental Economics Seminar, October 22<sup>nd</sup>, 2013<sup>1</sup>

“For the rational study of the law the black-letter man may have be the man of the present, but the man of the future is the man of statistics and master of economics”.  
**Justice Oliver Wendell Holmes, 1897<sup>2</sup>**

Experimental economics is a branch of economics, in which research and policy issues are addressed by relying on data collected in controlled human experiments<sup>3</sup>. As such, economic experiments may be of great interest for IP Law & Economics, as this field is crossed with manifold policy debates, theoretical controversies and irregularities<sup>4</sup>.

The seminar held on October 22<sup>nd</sup> was intended to introduce into our interdisciplinary discussions this (not so) emerging area of economics<sup>5</sup>, pointing out its advantages, but also its peculiar methodological issues, challenges and constraints. Two papers were proposed as background readings, both presenting economic experiments related to the process of innovation, with hypotheses related to intellectual property protection. The main object of the seminar was however the presentation of a project on experimental IP L&E by a group of researchers: Marianna Epicoco (BETA) Agnieszka Kupzok (BETA-CEIPI Project in law and economics of IP), and Thibaud Lelong (CEIPI). Consequent debate was intense, giving wide margins for further comments and thinking.

### **Papers at scrutiny:**

- 1) Buchanan, Joy, Wilson, Bart J., “An Experiment on Protecting Intellectual Property”, *Working Paper*, April 2012
- 2) Engel, Christoph, Kleine, Marco, “Who is Afraid of Pirates? An Experiment on the Deterrence of Innovation by Imitation”, *Working Paper Series of the Max Planck Institute for Research on Collective Goods*, 2013/07

---

<sup>1</sup> NB: this comment is based on articles, the presentation made during the seminar, as well as discussions held during the seminar and after, especially with Elena Dan. It is hence a result of cumulative creativity; however the author keeps the whole responsibility for written statements and all potential mistakes.

<sup>2</sup> Justice Oliver WENDELL HOLMES, “The Path of the Law”, 10 *Harvard Law Review* 457, 469 (1897), as cited in Thomas S. ULEN, Richard H. MCADAMS, “Introduction to the Symposium on Empirical and Experimental Methods in Law”, 4 *University of Illinois Law Review*, 2002.

<sup>3</sup> Rachel CROSON, “Why and how to experiment: methodologies from experimental economics”, *University of Illinois Law Review*, Vol 2002, p. 921-945, p. 922. Other types of empirical work are simulations and observational research, the latter being most common in both economic and legal empirical research.

<sup>4</sup> Indeed economic experiments may be classified between “those designed to address theory, to investigate anomalies, and to inform policy”, following categorisation by Alvin E. Roth, “Laboratory Experimentation in Economics”, 2 *Econ. & Phil.*, 245 (1986), cited by Rachel CROSON, *supra* note 3, p. 924 and fn 14.

<sup>5</sup> This branch started to be known in the 1980s, and the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel (*aka* “Nobel prize for Economics”) was first granted in Experimental Economics in 2002 to Vernon L. Smith and Daniel Kahneman.

In both papers authors test hypotheses related to the necessity of legal IP protection as an incentive, 1) within the very process of innovation and wealth creation, 2) when innovators are facing appropriators.

In the Engel & Klein paper, along with side effects, such as the importance of appropriation risk and costs, the experiment showed that no “chilling effect”<sup>6</sup> on investment into innovation was observed in lab conditions while innovators were fully aware of the risk of appropriation of their knowledge goods by counterparts. This was *inter alia* meant to suggest that policy discourse over the necessity of prior legal protection as a *sine qua non* condition for innovation is somehow exaggerated.

The same observation appears in the Buchanan & Wilson paper, where authors show that “IP protection is not necessary to induce people to create non-rivalrous knowledge goods in nontrivial quantities”<sup>7</sup>. They also show that, while profits for creators are enhanced by IP protection, the clue for the profits is the outbreak of “entrepreneurs”<sup>8</sup>: “This experiment demonstrates that entrepreneurship plays a critical role in creating wealth when intellectual property protection is either exogenously enforced or endogenously and voluntarily respected”<sup>9</sup>.

### **Presentation of a new project**

Starting from the observation that there is no conclusive evidence in recent scholarship on how patent protection affects creativity and innovation, the L&E Research Group endeavoured to shove off the Buchanan & Wilson experimental frame, with the aim to expand it and obtain new data to test additional hypotheses. Underlining its interdisciplinary nature, the Research Group has worked on several hypotheses’ extensions, both in economics and in IP law, posing the following research question: “if we manipulate the rules of the experiment in order to simulate different IP regimes and technological regime, how does creative output change?”

The legal extensions comprise notably moving away from the initial binary model IP / No IP by imposing a third option (protection by reputation or enforcement with cost), and testing incentives of the economic agent’s real choice between national, European or unitary patent. The economic extensions are primarily focused on impact of technological regime, which can be either simple or complex.

The initial experiment was set up as a “colour game” consisting of a two stage process, where participants were first asked to create within a specific virtual environment either rivalrous (grey) or non-rivalrous (coloured) goods, then to exchange them on the market, gaining then the real monetary outcomes of their virtual activity. Hence, the L&E Research Group intends to replicate the “colour game” of the Buchanan & Wilson experiment, a practice that is common in experimental economics’ methodology<sup>10</sup>, enlarging it by novel hypotheses.

---

<sup>6</sup> ENGEL & KLEINE, 2013, p. 26.

<sup>7</sup> BUCHANAN & WILSON, 2013, p. 2.

<sup>8</sup> *Ibid.*, p. 16-20.

<sup>9</sup> *Ibid.*, p. 22.

<sup>10</sup> R. CROSON, *supra* note 3, p. 922: the author suggests the capacity to reproduce other’s experiments and hence verify findings as one of the advantages of this methodology.

## The debate

It will be impossible to be exhaustive on all the ideas. However, some major ideas should be consigned: after a brief reminder of Economist's comments, we will focus on Lawyer's questions, with a specific intention to show the complexities of the legal and economic dialogue.

### *Comments made by the economists:*

Giuseppe Attanasi pointed out a methodological concern, *i.e.* the necessity to be cautious on the outcomes of the unpublished Buchanan & Wilson experiment, as it is still at a 'working paper' stage, hence still under scrutiny.

Professors Julien Pénin and Robin Cowan have expressed their concerns about the complexity of the new project, proposing for instance to reduce the second market stage and to exogenize trade by introducing an artificial demand side.

Also Professor Pénin was concerned about the lack of external validity based on the quasi absence of knowledge accumulation by the actors. Indeed, the length of each game made building and applying knowledge from the past rather fictional.

The dichotomy of IP/ No IP treatment has been widely criticized as too simplistic, however it has been commonly agreed that introducing a middle regime may render the experiment too complex and hence less reliable.

### *Lawyer's issues:*

First, as stated by Oleksandr Bulayenko, discovering such experimental methodology may be of great interest for lawyers, as in the legal field evidence is particularly difficult to obtain. And as authoritatively said by Sherlock Holmes: "It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts"<sup>11</sup>.

Then, as pointed out by Professor Xavier Seuba, there is potential for misunderstanding with regards to the vocabulary used by the authors of the background papers. Terms such as piracy, appropriation, innovation, creativity, ideas, are used in various contexts, which is not always adequate from a legal perspective. For instance both background papers confuse what in legal terms are inventions, subject *inter alia* to patent law, and other objects of intellectual property (inventions, literary and artistic works, distinctive signs, geographical indications, appearance of products, etc.) without separating these concepts. Consequently, it is important to notice that the results of these experiments may not be applied to all policy debates over intellectual property protection, and a paper's title "An experiment on protecting intellectual property" (Buchanan & Wilson) may be deemed as deceptive.

---

<sup>11</sup> Sir Arthur Conan DOYLE, *A Scandal in Bohemia*, in *Complete Adventures and Memoirs of Sherlock Holmes*, C.N. Potter, 1975, p. 326, cited by Rachel CROSON, "Why and how to experiment: methodologies from experimental economics", *supra* note3, p. 921 and fn. 1.

An example of lexical/conceptual misunderstanding may hence be pointed out. With much simplification it can be said that in IP law “creation” and “creativity” is commonly attached to literary and artistic property, whereas “invention” and “inventiveness” is attached to industrial property<sup>12</sup>. Trademarks, while forming a major IP right, may not be considered in either of these categories, as they perform different functions. The main distinction parameter between creations and inventions is the moment at which the right on such property arises: out of the creation act or upon registration of the invention<sup>13</sup>. Manifold legal consequences arise from this distinction.

Another concern is to agree on the limits of simplification afforded by such economic experiments. Indeed, does investment in innovation equate with the process of inventing (Engel & Kleine)? Does blind-matching a certain colour by mixing virtual red, blue and green, afford for scientific progress (Buchanan & Wilson)? Speaking of the IP/No IP dichotomy, it is worth stating, that the legal landscape is much more complex than just IP/No IP: people may choose between different options of patent protection, trade secrets, open innovation, manifold licenses, compulsory licenses, etc. Of course, laboratory experiments are supposed to be based on reduced processes of problem-solving and knowledge creation; however it is sometimes hard to apprehend their results in theoretical (legal or economic) thinking. Here we would like to quote Rachel Croson’s *mise en garde*, on methodological limits of such economic experiments: “a theory that can predict outcomes in a laboratory environment may suggest what might happen in the real world; just because a theory works in a laboratory experiment, does not mean it will work in reality. However, if a theory does *not* predict outcomes in an idealized, controlled setting in the lab, it will likely not predict outcomes in the real world”<sup>14</sup>.

One simplification has been particularly remarked by participants: economic experiments under scrutiny rely on behavioural models of individual inventors, though on the real market, in a majority of industrial sectors, investment decisions are taken by firms, filing patent applications. This concern is nevertheless addressed in the Engel & Kleine study, where they acknowledge “trading some aspects of external validity for experimental control”<sup>15</sup>. To legitimise such trade off, they present two arguments: that *in fine* decisions in firms are taken by individuals and that in the “legal discourse justifying intellectual property, the individual innovator is the regulative model”<sup>16</sup>. The former argument negates the separation of tasks between inventors and managers, whereas for the latter argument the authors do not bring any supportive references.

A different, although related, concern arises over significance given to the market and its features in such experiments. Experimental games in both papers are structured over trade exchanges in knowledge goods, which are hence created only in order to be traded over the

---

<sup>12</sup> Schumpeterian “innovation” is an important economic concept, but does not have a “pure” legal meaning.

<sup>13</sup> For philosophical elaboration of the concepts of creation and invention, which are close to such legal discourse, see George STEINER, *The Grammars of Creation*, Faber and Faber, 2001, p. 90 sq.

<sup>14</sup> R. CROSON, *supra* note 3, p. 923.

<sup>15</sup> ENGEL & KLEINE, 2013, p. 4.

<sup>16</sup> *Ibid.*

market<sup>17</sup>. This view assumes that knowledge goods have only an economic value. More importantly, efficiency of the intellectual property system is only analysed in a functioning market framework. However, in legal discourse such reduction is far from being consistent. Although it may be said that an issue becomes a policy and a legal concern as soon as it acquires market value, it does not present the whole complexity of IP legal regime. For instance, as was mentioned by Professor Seuba, criminal enforcement policy does not only follow an economic rationale, public interest prevails in the extension of the scope of criminal law. Also, moral rights are not marketable goods, as well as exceptions and limitations to IP rights embody policy concerns over educational and scientific social needs, freedom of expression, etc.

Finally, we should point out that an important part of current research and policy concerns in industrial property<sup>18</sup> focuses on the means to enhance quality of patents, not their quantity, whereas the aforementioned economic experiments were strongly focusing on the quantitative outcome, although some sort of quality outcome (colour) was measured by the closeness to the ideal colour of the day and by price it got in the Buchanan & Wilson paper, but it is not so convincing.

### **Further comments**

The debate during the seminar has hence highlighted many interdisciplinary questions related to the use of experimental economics methodology in IP related research. There may be many further lines of interrogation, and we would like to concentrate on a specific one: on empiricism within the legal field *stricto sensu*.

When observing the relative importance of experimental economics within economics, and its difficult applicability to law (*cf* criticisms *supra*), one may wonder what kind of empirical work suits the legal discipline. A first disambiguation is necessary here: we should address “empirical work”, as a part of scientific methodology, not in the sense of “legal practice based on positive law”, as it is for instance addressed by Immanuel Kant in the *Introduction to the Science of Right*<sup>19</sup>. Indeed the dialectic between theory and practice is a separate and ever greening subject<sup>20</sup>.

Empirical work is hence a crucial aspect in legal research, as it permits to escape formalism. If in experimental economics, as we could see through the seminar papers, data is predominantly collected at the stage of market exchange, in law such “empirical situation” is

---

<sup>17</sup> Of course, as was noted during our seminar, participants may choose to offer goods for zero monetary units, but as stipulated in the ENGEL & KLEINE methodology (p. 3) and assumed in the BUCHANAN & WILSON experiment, “actors are fully rational money maximizers”. This assumption is realised by the fact that lab participants are encouraged to maximise their real gains through the experiment.

<sup>18</sup> See the EPO initiative “Raising the Bar”, incl. as explained by Heli PIHLAJAMAA in Ch. GEIGER (ed.), *What Patent Law for the European Union*, LexisNexis, 2013, p. 177-183.

<sup>19</sup> in *The Philosophy of Law: An Exposition of the Fundamental Principles of Jurisprudence as the Science of Right*, trans. W. Hastie (Edinburgh: Clark, 1887), where the philosopher compares “a merely empirical system that is void of rational principles”, to a “wooden head in the fable of Phædrus, fine enough in appearance, but unfortunately [lacking] brain”.

<sup>20</sup> B. EDELMAN, “Théorie et pratique juridiques”, *Archives de la philosophie du droit*, Tome 33 *La philosophie du droit aujourd’hui*, Sirey, 1988, p. 141-154.

the trial, as has been shown by Max Weber<sup>21</sup>. Arguably a trial is the optimal situation where legal empirical investigation is made possible, where strategies and motivations of different actors are revealed, where private interests collide, and general interest steps in. Hence the analysis of case-law has always been of crucial importance for legal scholarship. Recently new methodologies have been introduced, including statistics, in order to elucidate new aspects of case-law and probate additional hypotheses<sup>22</sup>.

Empirical legal investigation also attaches much importance to other interdisciplinary collaborations: for instance to sociological methodological tools. Indeed, field observations and surveys may bring lots of interesting evidence to corroborate or refute theoretical assumptions. Other data examination can be brought by linguistic methodology<sup>23</sup>. Finally, it is important to underline the significance of historical case-study in approaching different issues of intellectual property law. If we go back to the issues raised by the seminar papers, *i.e.* the adequacy of IP protection as an incentive for innovation and creativity, we may compare them with historical investigation done by Graham Dufield and Uma Suthersanen, resulting in advices for instruments to avoid overprotection that restricts innovation<sup>24</sup>, as well as finding occasions, when “freedom to imitate was an essential step towards learning how to innovate”<sup>25</sup>.

## Conclusions

In a very broad sense, this seminar showed the necessity of exploring methodological advantages and disadvantages of empirical methods in interdisciplinary studies, but also to send researchers back to their own disciplines to evaluate the nexus between theory and practice, concepts and facts, rules and behaviours.

It has raised many questions, such as to find the limits of experimental economics in the field of Law & Economics, the benefits and limits of L&E itself as applied to intellectual property law, and many others to come.

---

<sup>21</sup> It is particularly explicit in *Rudolf Stammler and historical materialism* (1907), as reported by Antoine Bernard DE RAYMOND, “La règle de droit comme maxime empirique de l’activité économique” A propos de Rudolf Stammler et le matérialisme historique de Max Weber (note critique), *Terrains & travaux*, 2004/1, n° 6, p. 71-80, spec. p. 77-78.

<sup>22</sup> We can cite the following articles: Andrew TORRANCE, “Beauty Fades: an Experimental Study of Federal Court Design Patent Aesthetics”, 19 *Journal of Intellectual Property Law* 389; Barton BEEBE, “An Empirical Study of U.S. Copyright Fair Use Opinions, 1978-2005”, 156 *Pennsylvania Law Review* 549 (2008); Barton BEEBE, “An Empirical Study of the Multifactor Tests for Trademark Infringement”, 95 *California Law Review* 1581 (2006).

<sup>23</sup> *E.g.* Frédéric POLLAUD-DULIAN, “Le langage du droit d’auteur français”, *Droit et technique, Etudes à la mémoire du professeur Xavier Linant de Bellefonds*, LexisNexis/Litec, 2007, p. 413-416 ; Graeme DINWOODIE, “What linguistics Can Do For Trademark Law”, in J. Ginsburg, L. Bently, J. Davis (eds), *Trade Marks and Brands: An Interdisciplinary Critique*, Cambridge University Press, 2007.

<sup>24</sup> Graham M. DUTFIELD and Uma SUTHERSANEN, “The Innovation Dilemma: Intellectual Property and the Historical Legacy of Cumulative Creativity”, *IPQ* n° 4, 2004, p. 379-421.

<sup>25</sup> Graham M. DUTFIELD & Uma SUTHERSANEN, “Harmonisation or Differentiation in Intellectual Property Protection? The Lessons of History”, *QUNO Occasional Paper 15*, August 2004.

### **Further readings:**

Elizabeth HOFFMAN & Matthew SPITZER, “Experimental Law and Economics: An introduction”, 85 *Columbia Law Review* 991 (1985) (available through Jstor)

Rachel CROSON, “Why and how to experiment: methodologies from experimental economics”, *University of Illinois Law Review*, Vol. 2002, pp. 921-945 (available online)

Thomas S. ULEN, Richard H. MCADAMS, “Introduction to the Symposium on Empirical and Experimental Methods in Law”, 4 *University of Illinois Law Review*, Vol. 2002 (available online)

« Regards civilistes sur l’analyse économique du droit », *Revue Henri Capitant de Droit*, n° 1, 30 décembre 2010

<http://henricapitantlawreview.net/article.php?id=226>

“Civil Law Perspectives on Law and Economics”, *Henri Capitant Law Review*, n°1, December 30<sup>th</sup>, 2010

[http://henricapitantlawreview.net/edito\\_revue.php?lg=en&id=18&lateral=18](http://henricapitantlawreview.net/edito_revue.php?lg=en&id=18&lateral=18)