

12-30-2016

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Recommended Citation

Alessandro Romano, *Micro-Meso-Macro Comparative Law: An Essay on the Methodology of Comparative Law*, 17 Chi.-Kent J. Int'l & Comp. Law (2016).

Available at: <http://scholarship.kentlaw.iit.edu/ckjicl/vol17/iss1/5>

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Micro-Meso-Macro Comparative Law: An Essay on the Methodology of Comparative Law

Alessandro Romano*

Abstract

There are strong analogies between the quest for a methodology of comparative law and the broader debate on the epistemology of social and natural sciences. In this vein, after having explored the dispute between holists and reductionists, I argue that the dichotomy between micro and macro comparative law ought to be abandoned. Building on the insights of social theory, I introduce a specific framework to bridge the two levels of enquiry through a *meso* analysis. This framework is applied to investigate the robustness of the findings of the legal origin theory.

I. Introduction

Identifying *the* right methodology for the study of comparative law has always been the holy grail of comparatists,¹ and the surge of “new comparative economics”² (NCE) and “numerical comparative law”³ (NCL) reinvigorated this hunt of epic proportions.⁴ The quarrel surrounding these strands of literature stems primarily from the fact that NCE and NCL build on two postulates. The first, and most apparent, is that legal rules must be measurable⁵ and commensurable.⁶ The

An earlier version of this paper was presented at the Annual Meeting of the Canadian Law and Economics Association (CLEA) in Toronto, at the 11th Annual Meeting of the German Association of Law and Economics (GLEA) in Bozen, at the Annual Meeting of Juris Diversitas (JD) held at the Swiss Institute of Comparative Law in Lausanne, and at the 2014 Annual Meeting of the Law and Development Institute (LDI) in Manchester. The comments and the suggestions that I received at these meetings were extremely helpful. I am also particularly indebted to Miriam Buiten, Eleni Frantziou, Yong Shik Lee, Ralf Michael, Roberto Pardolesi, Mathias Siems and Jack Vromen.

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¹ See, Vernon V. Palmer, *From Leretholi to Lando: Some Examples of Comparative Law Methodology* 53 AM. J. COMP. L. 261, 262-263 (2005) (“As an abstract matter, comparative law has but one method – to compare and contrast norms, institutions, cultures, attitudes, methodologies, and even entire legal systems. But in practice the word is applied more concretely. Method is now identified by the “techniques” by which comparisons are carried out,” the word methodology refers to the techniques used to compare different laws).

² See Simeon Djankov, Edward Glaeser, Rafael La Porta, Florencio Lopez-de-Silanes & Andrei Shleifer, *The New Comparative Economics*, 31 J. COMP. ECON. 595 (2003).

³ Mathias M. Siems, *Numerical Comparative Law: Do We Need Statistical Evidence in Law in Order to Reduce Complexity?*, 13 CARDOZO J. INT’L & COMP. L. 521, 521 (2005) (the author refers to the practice of translating the effects and the characteristics of law into numbers).

⁴ For an overview of the debate see Oliver Brand, *Conceptual Comparisons: Towards a Coherent Methodology of Comparative Legal Studies*, 32 BROOK. J. INT’L L. 405 (2006). Cf. also Mathias M. Siems, *Legal Origins: Reconciling Law & (and) Finance and Comparative Law*, 52 MCGILL L. J. 55, 57 (2007) (“The problem is how ‘properly’ to engage in comparative law.”).

⁵ This is a controversial point in itself. See JOHN HENRY MERRYMAN, *THE LONELINESS OF THE COMPARATIVE LAWYER* 456 et seq. (1999) (arguing that the law is mostly about non-measurable values).

⁶ For an exhaustive overview of the debate on incommensurability see H. Patrick Glenn, *Are Legal Traditions Incommensurable*, 49 AM. J. COMP. L. 133 (2001).

second, subtler, yet even more fundamental, is that it must be possible to isolate specific components of the law from the social context and the rest of the legal system.⁷ Indeed, “every measurement of an observable requires and involves an isolation with respect to that observable”⁸. That is, measurement cannot be performed without isolating—at least partially—the component being measured. Let us say that, for example, one wants to “measure” the weight of a steak. If, in a paroxysmal attack of holism, we affirm that the steak cannot be separated in any meaningful sense from the rest of the beef, and that the beef cannot be separated from the field in which it is grazing, it is evident that weighting the steak becomes impossible.

These postulates are opposed, explicitly or implicitly, wittingly or unwittingly, by influential scholars that consider the legal system to be part of an inseparable whole comprising social norms and social values.⁹ For example, Legrand notes that the meaning of a rule is not merely the sum of the words by which it is composed, as legal rules embody a whole culture.¹⁰ By culture he refers to “frameworks of intangibles within which interpretive communities operate and which have normative force for these communities It occupies a middle ground between what is common to all human beings (if, indeed, there be such commonality) and what is unique to each individual.”¹¹ The gist of Legrand’s argument is that the law cannot be understood when separated from the context in which it is embedded. As discussed in Section III, this view is incompatible with a quantitative approach to the study of the law, because any ambition of measuring the law is barred in a purely holistic conception of legal systems.

This point can be clarified using a standard example taken from two seminal articles, that will be discussed later in this work,¹² from La Porta, Lopez-de-Silanes, Shleifer and Vishny (hereinafter, LLSV). In these articles, LLSV argue that higher investor and creditor protection favor the development of financial markets.¹³ To empirically test this assertion, LLSV create quantitative

⁷ Noteworthy strands of legal research as legal formalism and law and economics have been built on this assumption. See John B. Ruhl, *Complexity Theory as a Paradigm for the Dynamical Law-And-Society System: A Wake-Up Call for Legal Reductionism and the Modern Administrative State*, 45 DUKE L. J. 849, 853 n.4 (1996).

⁸ See HENRY MARGENAU, *PHYSICS AND PHILOSOPHY: SELECTED ESSAYS* 33 (1978).

⁹ See Palmer, *supra* note 1, at 264-265 (noting how the idea that “each legal culture is a unique, culturally contingent product which is incommensurable and untranslatable except through a deep understanding of the surrounding social context” is now very influential in comparative law). See also Siems *supra* note 3, at 533 (“It is increasingly understood that law cannot be isolated from history, politics, economics, and social science.”).

¹⁰ Pierre Legrand, *European Legal Systems Are Not Converging*, 45 INT’L COMP. L. Q. 52, 56 (1996).

¹¹ *Id.*

¹² See discussion accompanying *infra* notes 67-77.

¹³ See Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer & Robert W. Vishny, *Legal Determinants of External Finance*, 52 J. FIN. 1131, 1131 (1997) (showing empirically that “countries with poorer investor protection, measured by both the quality of legal rules and the quality of law enforcement, have smaller and narrower capital markets”). See also Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer & Robert W. Vishny, *Law and Finance*, 106 J. POL. ECON. 1113 (1998).

proxies capturing the degree of investor and creditor protection in several countries.¹⁴ Leaving aside the debate on the accuracy of the indicators,¹⁵ the key point is that to create these proxies LLSV had to isolate some legal rules from the rest of the legal system, stripping them almost completely from their cultural component. Their proxies must necessarily be crafted from the letter of the law, instead of building on the countless nuances characterizing the cultures of the 49 countries analyzed. Criticizing LLSV for such choice would be unfair, as empirical studies *require* the identification of a limited number of variables that can be expressed by a number. For example, “[a]ccording to Pistor et al., the average of shareholder rights in transition economies is ‘3.13.’ And according to Bebchuk et al., the average of antitakeover statutes per state in the United States is ‘2.7.’”¹⁶ Here, the largely overlooked tension between empirical legal studies and a holistic view of the world can be observed.¹⁷ The former requires isolation and measurement, the latter precludes both. Indeed, these numbers would probably have very little meaning for a scholar like Legrand, because they (are bound to) overlook crucial cultural components. Therefore, measurability and the debate on holism and reductionism in the study of comparative law are two faces of the same coin.¹⁸ Or, more precisely, the latter is prior to the former. Only embracing an – at least partially – reductionist view of the law does measurement become a possibility.

In this article, I tackle these hierarchically ordered problems building on the centuries old debate of reductionism and holism in science. More precisely, I show that the juxtaposition of a micro (reductionist) and a macro (holistic) approach to the study of comparative law is an empty exercise. Only bridging the two levels of enquiry via a *meso* analysis allows the development of an approach to the study of comparative law that is not plagued by a problem of infinite regress and that also encompasses a quantitative approach.

The balance of this Article is as follows: Section II introduces the philosophical debate on determinism and predictability, and presents the dichotomy between reductionism and holism; Section III discusses the implications of the philosophical theories presented in Section II for the

¹⁴ *Id.* at 1122-1125.

¹⁵ See Holger Spamann, *The “Antidirector Rights Index” Revisited*, 23 REV. FIN. STUD. 467 (2010) (refining and correcting the indicators used by LLSV). Interestingly, most of LLSV results no longer hold using the updated data.

¹⁶ Siems, *supra* note 3, at 521 citing Katharina Pistor, Martin Raiser & Stanislaw Gelfer, *Law and Finance in Transition Economies* 8 ECON. IN TRANSITION 325, 337 (2000). See also Lucian Bebchuk, Alma Cohen & Allen Ferrell, *Does the Evidence Favor State Competition in Corporate Law*, 90 CAL. L. REV. 1775, 1814 (2002).

¹⁷ Siems, *supra* note 3, at 528 (“It is remarkable that, so far, there has been almost no general discussion regarding this kind of comparative law [i.e. numerical]. Rather it appears that some academics are doing these studies, some are citing them, and some are simply ignoring them”).

¹⁸ The strict connection between measurability and the debate on reductionism and holism has been long recognized in many branches of human knowledge. See, e.g., Effie L. C. Law, *The Measurability and Predictability of User Experience*, EICS PROC. (2011) (“an intriguing controversy about UX is its measurability, which is grounded in the age-old debate of reductionism versus holism”).

methodology of comparative law; Section IV introduces the micro-*meso*-macro approach to comparative law and an example of its application; Section V briefly summarizes the findings of this paper.

II. The Philosophical Debate: Chaos, Holism and Reductionism

Although sometimes overlooked, there are strong analogies between the quest for a methodology of comparative law and the broader debate on the epistemology of social and natural sciences. To explore these similarities, two important debates that have entertained philosophers for centuries are shortly described in this section.

A. Predictability and Chaotic Systems

We ought to regard the present state of the universe as the effect of its antecedent state and as the cause of the state that is to follow. An intelligence knowing all the forces acting in nature at a given instant, as well as the momentary positions of all things in the universe, would be able to comprehend in one single formula the motions of the largest bodies as well as the lightest atoms in the world, provided that its intellect were sufficiently powerful to subject all data to analysis; to it nothing would be uncertain, the future as well as the past would be present to its eyes.¹⁹

The words of Laplace are generally considered the manifesto of determinism.²⁰ However, Laplace's determinism is grounded on two very strong implicit assumptions.²¹ First, Laplace hypothesizes that small causes produce small effects. To put it differently, studying two very similar settings will result in very similar answers. However, in many circumstances this assumption does not hold,²² and nature is pervaded by chaotic systems that are extremely sensitive to infinitesimal

¹⁹ ERNEST NAGEL, THE STRUCTURE OF SCIENCE 281-282 (1961) quoting PIERRE-SIMON DE LAPLACE, A PHILOSOPHICAL ESSAY ON PROBABILITIES (1812).

²⁰ There are many kinds of determinism and not all of them imply perfect predictability. Discussing the various versions of determinism lies way outside the scope of this article, and hence I will focus on Laplacian determinism only. For a discussion of other versions of determinism, see John Earman, *Aspects of Determinism in Modern Physics*, THE PHILOSOPHY OF PHYSICS. HANDBOOK OF THE PHILOSOPHY OF SCIENCE, PART B 1373 (Jeremy Butterfield & John Earman eds., 2007)

²¹ See William J. Firth, *Chaos-Predicting the Unpredictable*, 303 BRITISH MEDICAL J. 1565, 1565 (1991).

²² More precisely, this assumption only holds for linear systems. In a very famous passage Poincaré states that “[a] very slight cause, which escapes us, determines a considerable effect which we cannot help seeing, and then we say this effect is due to chance. If we could know exactly the laws of nature and the situation of the universe at the initial instant, we should be able to predict exactly the situation of this same universe at a subsequent instant. But even then when the natural laws should have no further secret for us, we could know the initial situation only *approximately*. If that permits us to foresee the subsequent situation *with the same degree of approximation*, this is all we require, we say the phenomenon has been predicted, that it is ruled by laws; but it is not always so. It may happen that slight differences in the initial conditions produce very great differences in the final phenomena; a slight error in the former would make an enormous error in the latter. Prediction becomes impossible and we have the fortuitous phenomenon.” [emphasis original]. Henri Poincaré (G. B. Halsted trans.), *Chance*, 22 THE MONIST 31, 34 (1912).

differences in initial conditions.²³ In a chaotic system, small differences in initial conditions “cascade through various iterations into remarkably different output.”²⁴ The most famous example is the butterfly, or better, the sea gull effect.²⁵ In the words of Lorentz, “One meteorologist remarked that if the theory were correct, one flap of a sea gull’s wings would be enough to alter the course of the weather forever. The controversy has not yet been settled, but the most recent evidence seems to favor the gulls.”²⁶ The controversy has since been settled and chaos theory is a mainstay of modern science. Besides weather forecasting, chaos theory has been successfully applied to the study of vital components of the human body,²⁷ to social sciences,²⁸ and much more.

Second, Laplace implicitly assumes the existence of a linear relationship between the complexity of a model and the calculation power required to analyze it. In this vein, a small increase in the calculation power would be enough to include an additional element into a model or to extend the time horizon of the predictions.²⁹ Nevertheless, contrary to what was envisaged by Laplace, the calculation power needed to study complex systems grows at a very high rate, thus barring the possibility to include too many factors in any model.³⁰

Once Laplace’s assumptions are relaxed, perfect predictability becomes no more than a Siren’s song. On the one hand, we cannot define initial conditions with infinite precision. On the other hand, even small imperfections in the data might lead to completely wrong predictions. Furthermore, we cannot include every facet of reality in a model, and hence—as summarized by Poincaré—whenever we are confronted with chaotic systems “prediction becomes impossible.”³¹

B. Methodological Individualism and Holism

²³ This point has been acknowledged also by legal scholars. See Siems *supra* note 3, at 529 (“Most things do not follow deterministic rules and a lot of truths are not the logical outcome of one set of rules because systems are often dynamic and chaotic”). See also Ruhl *supra* note 7, at 864 (affirming that chaotic systems attract scientist attention because they appear frequently in the real world).

²⁴ See, e.g., John P. Higgins, *Nonlinear Systems in Medicine*, 75 YALE J. BIOLOGY MED. 247, 249 (2002).

²⁵ The sea gull metaphor was soon to be replaced by the more famous one involving a butterfly. For a historical account of the sea gull effect see Robert C. Hilborn, *Sea Gulls, Butterflies, and Grasshoppers: A Brief History of the Butterfly Effect in Nonlinear Dynamics*, 72 AM. J. PHYSICS 425 (2004).

²⁶ Edward N. Lorenz, *Section of Planetary Sciences: The Predictability of Hydrodynamic Flow*, 25 TRANSACTIONS OF THE N.Y. ACADEMY OF SCI. Series II 409, 431 (1963).

²⁷ See, e.g., Ary L. Goldberger, *Non-Linear Dynamics for Clinicians: Chaos Theory, Fractals, And Complexity at the Bedside*, 347 THE LANCET 1312 (1996). See also LEON GLASS & MICHAEL C. MACKAY, *FROM CLOCKS TO CHAOS: THE RHYTHMS OF LIFE* (1988).

²⁸ See L. DOUGLAS KIEL & EUEL W. ELLIOTT, *CHAOS THEORY IN THE SOCIAL SCIENCES: FOUNDATIONS AND APPLICATIONS* (1997).

²⁹ See Firth, *supra* note 21, at 1565.

³⁰ *Id.*

³¹ See Poincaré, *supra* note 22, at 34.

There is no univocal definition of methodological individualism.³² The main question is whether the *explanantia* of social phenomena should be determined in terms of individuals alone or in terms of individuals plus relations between individuals.³³ For the sake of exposition, only two rather extreme positions in this debate will be discussed. In particular, the two considered opposed perspectives are:

- (i) every explanation of collectives' behavior has to be offered exclusively in terms of individuals (methodological individualism), and
- (ii) wholes are different in nature from the sum of their parts, and hence both social and natural sciences should adopt a broad object of enquiry (holism/methodological collectivism).

One of the champions of methodological individualism is Sir Karl Raimund Popper. According to him, "The 'behaviour' and the 'actions' of collectives, such as states or social groups, must be reduced to the behaviour and to the actions of human individuals."³⁴ In this vein, the studies of methodological individualists focus strictly on individual agents because they are considered the only relevant unit of analysis.

At the other end of the spectrum, advocates of what Phillips calls "Holism 2," advance the five theses of organicism:

- (i) The analytic approach as typified by the physico-chemical sciences proves inadequate when applied to certain cases...., (ii) the whole is more of the sum of its parts, (iii) the whole determines the nature of its parts, (iv) the parts cannot be understood if considered in isolation from the whole, (v) the parts are dynamically interrelated or interdependent.³⁵

The corollary of this view is that, instead of focusing on individuals, the attention should be on groups of individuals.

It is, however, apparent that both theories are affected by a problem of infinite regress. Holism is affected by a problem of infinite regress because neither societies nor organisms themselves are wholes. As written by Haldane:

These parts [of the organism] stand to one another, and to the surroundings, not in the relation of cause and effect but in that of reciprocity. The parts of an organism and its

³² See Lars Udehn, *The Changing Face of Methodological Individualism*, 28 ANN. REV. SOC. 479 (2002).

³³ Geoffrey M. Hodgson, *Meanings of Methodological Individualism*, 14 J. ECON. METHODOLOGY 211, 211 (2007).

³⁴ KARL POPPER, *THE OPEN SOCIETY AND ITS ENEMIES*, VOL. 2 87 (1945).

³⁵ DENIS C. PHILLIPS, *HOLISTIC THOUGHT IN SOCIAL SCIENCE* 6 (1976).

surroundings thus form a system, any one of the parts of which constantly acts on the rest, but only does so, *qua* part of the system, insofar as they at the same time act on it.³⁶

Because there are no boundaries in nature, if the whole is considered the organism plus the environment there is no way to isolate an organism from the whole universe.³⁷ However, if all the knowledge has to be knowledge about the universe as a whole, there can be no knowledge at all.³⁸ As it is impossible to identify an object of study that is large enough to not be part of a broader system, Holism 2 cannot produce any knowledge.

On the other hand, there is methodological individualism:

Attempts to explain each emergent layer of institutions always rely on previous institutions and rules. If institutional influences on individuals are admitted, then these too are worthy of explanation. In turn, the explanation of those may be partly in terms of other purposeful individuals. But where should the analysis stop? ...We are involved in an apparently infinite regress, similar to the puzzle 'which came first, the chicken or the egg?'³⁹

Importantly, once reductionism is embraced, it is natural to question why the analysis should stop at the individual level instead of investigating its components. Considering individuals as the basic unit of analysis is an entirely arbitrary choice.⁴⁰ If we one assumes that only the basic component of a system can produce relevant knowledge, the behavior of each individual should be explained in terms of the particles by which it is formed. Even studying individuals would therefore be irrelevant and the focus should exclusively be on subatomic particles.⁴¹

III. Comparative Law

In the perspective of Holism 2, the law is only a part of the whole society, thus it is not possible to gain any understanding of the law without having prior knowledge about society as a whole. The very nature of the law is determined by society and, because parts cannot be studied in isolation from the whole, legal scholars have embarked in a meaningless crusade. Furthermore, a scholar of Holism 2 would claim that a society cannot be explained in terms of its laws, even after it has been

³⁶ John S. Haldane, *Life and Mechanism*, 33 MIND 27, 33 (1884).

³⁷ See Phillips, *supra* note 35.

³⁸ BERTRAND RUSSELL, A HISTORY OF WESTERN PHILOSOPHY 745 (4TH ED. 1945).

³⁹ Hodgson, *supra* note 33, at 219.

⁴⁰ See Juergen Lange-von Kulesa, *Searching for a Methodological Synthesis-Hayek's Individualism in The Light of Recent Holistic Criticism*, 4 J. ECON. METHODOLOGY 267, 270 (1997) ("To reduce all complex social phenomena to their elements looks like an infinite regress where it is arbitrary which unit of explanation is chosen.").

⁴¹ *Id.* ("For advocates of a holistic perspective there is no reason why reductionism, once it is entered, should stop at the individual level and not go further to the level of genes or even that of neurones as determinants of human actions.").

understood as a whole. Therefore, studying the law cannot produce any knowledge even after the society has been understood.

When Eörsi states that “the small piece of steel which happens to be built into the Eiffel Tower could also have been built into Waterloo bridge,”⁴² he is claiming that a part cannot be understood without considering the whole. Yet, he overlooks that also the Eiffel Tower is part of a larger system and that this larger system affects the characteristics of the Tower. For example, the tower is made of iron that, like most materials, expands when heated.⁴³ This is not a small and irrelevant effect, and indeed engineers have to account for thermal expansion when building bridges and railways.⁴⁴ Just like a legal rule has a different meaning in another cultural context, the same tower has a different size if located at the North Pole or in Death Valley. And just like a legal scholar must account for the context when studying the law, an engineer has to account for environmental, *social and cultural* factors when developing her project.⁴⁵

Consider this metaphor mentioned by Professor William Twining in light of this debate: the law must be in harmony with its context like a house must merge into the landscape.⁴⁶ Adopting a dynamic perspective, it is easy to see that also this metaphor, that probably many comparatists would endorse, is plagued by a problem of infinite regress.

The law has to be in harmony with the context not only today, but also in the future. In Twining’s metaphor, the house has to merge with the landscape of today and with the landscape of tomorrow. However, the characteristics that the landscape will have tomorrow depend also on the characteristics of the neighboring areas that, in turn, depend on the areas that are further away and so on. Indeed, because no area is an isolated system, interrelations with all the other systems must always be accounted for. Even if the connection is so weak and so remote to be comparable to one flap of a sea gull’s wings, it can *completely* change how the landscape will look tomorrow. In other

⁴² GYULA EÖRSI, *COMPARATIVE CIVIL (PRIVATE) LAW* 54 (1979).

⁴³ Hana Dobrovlny, *Lecture notes for Physics 10154: General Physics I* 98-99 (2012) (“Most substances increase in volume as their temperature (thermal energy) increases. The thermal energy of an object is actually a measure of the average velocity of the constituent atoms. As temperature increases, atoms move faster. In solids and liquids, these atoms cannot actually leave the substance, so their vibrational motion increases leading to an increased separation between atoms. Macroscopically, we see this as an increase in volume.”) available at http://personal.tcu.edu/hdobrovlny/GenPhys_notes.pdf.

⁴⁴ See, e.g., GUNTER RAMBERGER, *STRUCTURAL BEARINGS AND EXPANSION JOINTS FOR BRIDGES* 1 (2002) (Explaining that, when building bridges, it must be accounted for the fact that they “are subjected to movements due to temperature expansion and elastic strains induced by various forces”).

⁴⁵ The expected traffic is an important factor to consider when building a bridge. In turn, the amount of traffic is influenced by the socioeconomic and cultural context. See César Crespo-Minguillón & Juan R. Casas, *A Comprehensive Traffic Load Model for Bridge Safety Checking*, 19 *STRUCTURAL SAFETY* 339, 339 (1997) (“Traffic action is the most important effect for the fatigue deterioration of short and medium span bridges. Besides, traffic represents also the most significant contribution to the total value of the external action to consider for ultimate limit state analysis.”).

⁴⁶ See William Twining, *Diffusion of Law: A Global Perspective*, 36 *J. LEG. PLURALISM UNOFFICIAL L.* 1, 28-29 n.59 (2004). I remark that Twining is not mentioning this metaphor because he is endorsing it.

words, to know how the landscape will look like tomorrow one must have information on the whole world.⁴⁷

Abandoning the metaphor, the effect of a rule introduced in a European country depends also on the existing regulations at the European level and on other transnational rules.⁴⁸ Moreover, the effect of the rule will also be significantly affected by the laws of non-European countries, the state of their economies and so on. One natural answer to this complexity is performing a more thorough analysis that keeps into account national and transnational rules and the social factors involved. Yet, as there is no reason to postulate that legal systems behave as linear systems,⁴⁹ this answer overlooks the debates presented in Section II. In the light of chaos theory, which provides that one cannot attain perfect knowledge or include every factor in the analysis,⁵⁰ *improving the quality of our knowledge does not reduce the likelihood or the magnitude of possible mistakes*. No matter how careful the study and how many components are accounted for, the landscape might still be totally different from what was expected. For example, let us assume that the “real” value of investor protection in a country is 10 (whatever that means), but that this value is unknowable (i.e. perfect knowledge is unattainable). A superficial study might indicate that the investor protection is 6, whereas a more accurate study could suggest that it is 11 (thus reducing the error margin in the measurement of the variable). However, in a chaotic system it *cannot* be stated that the study performed assigning 11 to investor protections offers predictions that are closer to reality than a study conducted assigning a value of 6. Actually, even assigning a value of 10.0001 would not help and would not reduce the probability and the magnitude of mistakes. This is a crucial point. For linear systems, the more the “true” value of the variable is approximated, the closer to reality the results of the analysis will be. Therefore, performing more accurate studies proportionally reduces the errors committed. Yet, chaos theory shows that this logic holds for linear systems. Paradoxically, the only philosophically sound way to argue against NCE and NCL is to claim the law is a linear system. This is exactly the opposite of what is usually done.

⁴⁷ Technically, even information on the whole world would not suffice. In fact, the earth is merely part of a broader system. The problem of infinite regress of holistic theories would lead us to conclude that to understand the law we should study the universe as a whole!

⁴⁸ See, e.g., Mathias Reimann, *Beyond National Systems: A Comparative Law for the International Age*, 75 TUL. L. REV. 1103, 1116 (2001) (“Today, the only reason to limit our explorations to the legal systems of nation-states is force of habit.”).

⁴⁹ If anything, it is absolutely standard to refer to legal systems as “complex systems.” See, e.g., Katharina Pistor, *Rethinking the Law and Finance Paradigm*, 2009 BYU L. REV. 1647, 1648 (2009).

⁵⁰ There are very strong philosophical reasons to argue that perfect knowledge is unattainable. See, e.g., MARIO A. BUNGE, CAUSALITY: THE PLACE OF THE CAUSAL PRINCIPLE IN MODERN SCIENCE 129-132 (1959).

A similar logic can be applied to the debate on legal transplants.⁵¹ Prediction is a key concept in this debate as a crucial problem is ensuring that the transplanted rule has the desired effect.⁵² However, unless one assumes that legal systems are linear, predicting the effects of a transplant from one country to another implies a *perfect knowledge* of everything about the exporter, the importer and every other factor that might have an influence on the two. Absent impenetrable boundaries in nature, before assessing with accuracy the effect of a transplant one must have *perfect knowledge* on the whole universe! Indeed, perfectly mirroring the description of chaotic systems offered by natural scientists, Teubner suggests that “legal irritants” might trigger a “whole series of new and unexpected events.”⁵³ To put it differently, the same legal rule might trigger a sea gull effect and produce a totally unexpected outcome when introduced in a new country. It is not coincidental that Legrand (unwittingly) echoes Poincaré and concludes that “legal transplants are impossible.”⁵⁴

To summarize, predicting in the Laplacian sense the behavior of a non-linear system requires (i) *perfect knowledge* of (ii) *all* the factors involved. Requirements (i) and (ii) are both necessary and, hence, if either is missing, more careful and encompassing analyses do not necessarily result in predictions that better approximate the “real” behavior of the system. Because in all instances there are *infinite* factors involved in any event and perfect knowledge is *never* attainable, studying more about the law is *always* useless, given that it can *never* reduce the likelihood or the magnitude of the mistakes committed.

Conversely, the narrow definition of methodological individualism implies that macro-comparative law can only be the beginning of our enquiry, while even micro-comparative law is nothing more than a preliminary step. The ultimate unit of analysis is always the individual and any analysis with a broader scope must be regarded as only provisionally legitimate.⁵⁵ It is therefore the

⁵¹ In fact, also the literature on legal transplants emphasizes the importance of accounting for the “context.” See Richard G. Small, *Towards a Theory of Contextual Transplants*, 19 EMORY INT’L L. REV. 1431, 1431 (2005). See also Wei Shi, *Globalization and Indigenization: Legal Transplant of a Universal TRIPS Regime in a Multicultural World*, 47 AM. BUS. L. J. 455, 457-461 (2010).

⁵² See, e.g., Daniel Berkowitz, Katharina Pistor & Jean-Francois Richard, *Economic Development, Legality, and the Transplant Effect*, 47 EUR. ECON. REV. 165 (2003) (studying empirically the “transplant effect”).

⁵³ Gunther Teubner, *Legal Irritants: Good Faith in British Law or How Unifying Law Ends Up in New Divergences*, 61 MODERN L. REV. 11, 12 (1998).

⁵⁴ Pierre Legrand, *The Impossibility of Legal Transplants*, 4 MAASTRICHT J. EUR. & COMP. L. 111, 114 (1997). A legal transplant is clearly very easy to perform if it is intended as merely copying a legal provision into another statute. What could be “impossible” is ensuring (which implies prediction) that the effects of the transplant are the desired ones.

⁵⁵ Geoffrey Brennan & Gordon Tullock, *An Economic Theory of Military Tactics: Methodological Individualism at War*, 3 J. OF ECON. BEHAVIOR & ORG. 225, 225 (1982) (“The ultimate unit of analysis is always the individual; more aggregative analysis must be regarded as only provisionally legitimate. In other words, the economist is always sensitive to the possibility that the holistic treatment of groups of individuals may mislead greatly, or involve overlooking dimensions of reality that are extremely important.”).

action of individuals that shapes the law, and if we are to obtain knowledge about the law our object of enquiry has to ultimately become the individuals.

The implications of Legrand's definition of culture can now be better understood. According to him, "culture occupies a middle ground between what is common to all human beings (if, indeed, there be such commonality) and what is unique to each individual."⁵⁶ In other words, something belongs to the culture of a country if it is shared by the citizens of that country. Indeed, cultural values "have formed not on account of the fact that we live on this planet or because of our uniqueness, but as a function of the community to which we belong."⁵⁷ This view is affected by a problem of infinite regress from multiple perspectives. In particular, it leads to a slippery slope at the end of which the only sound conclusion is that the law is unknowable because it has a different meaning for each individual

First, it should be noted that the communities shaping our behavior and our values do not exist only at a national level, but also at a local level. The values and culture of a Bostonian and those of someone who lived all his life in Abbeville, Massachusetts are probably markedly different.⁵⁸ If the meaning of the law depends on the culture and values, and if culture and values can differ *within* one single country, then the law can have different meanings also within national borders. Let us now zoom in to a single city and consider three individuals, for example all Bostonians, belonging respectively to a highly elite group, to a moderate-elite group and to a non-elite group. As shown by a recently published article in the leading scientific journal *Science*, these individuals are likely to have significantly different values and preferences.⁵⁹ Therefore, because the meaning given to the law is shaped by values, legal rules will have a different meaning also for individuals belonging to the same city. Or, to put it differently, the meaning of a legal rule might not be the same for someone living in a rich, residential area and someone living in a poor suburb. Moreover, the

⁵⁶ Legrand, *supra* note 10, at 56.

⁵⁷ *Id.*

⁵⁸ See, e.g., Claude S. Fischer, Urban-to-Rural Diffusion of Opinions in Contemporary America, 84 AM. J. SOCIOLOGY 151, 151 (1978) ("Recent studies indicate continuing cultural differences between residents of larger and smaller communities.").

⁵⁹ Raymond Fisman, Pamela Jakiela, Shachar Kariv & Daniel Markovits, *The Distributional Preferences of an Elite*, 349 SCIENCE 1300, 1300 (2015) ("YLS subjects were substantially more efficiency-focused than were the ALP subjects drawn from the general population. Overall, 79.8% of YLS subjects were efficiency-focused, versus only 49.8% of the ALP sample. The YLS subjects displayed this distinctive preference for efficiency over equality in spite of overwhelmingly (by more than 10 to 1) self-identifying as Democrats rather than Republicans. In addition, YLS subjects were less likely to be classified as fair-minded and more likely to be classified as selfish than were the ALP subjects. Subjects from the intermediate elite fell between the YLS and ALP subjects with respect to efficiency-mindedness but were less likely to be fair-minded and more likely to be selfish than were the YLS subjects.").

characteristics of the family significantly shape values and behaviors.⁶⁰ It follows that even individuals living in the same residential area might see a legal rule differently. In short, not only are countries' cultures unique, so are their local cultures. At the same time, especially in an age of globalization, the cultural values (and hence the meaning of a legal rule) might be relatively less different in two rich neighborhoods of cities located in different countries than in two relatively close neighborhoods of the same country that have drastically different social and economic conditions.

The focal point is that countries' borders are only one of the determinants of one's culture, and possibly not the main one. GDP per capita, level of education, family ties, and so on also influence values. These factors greatly differ even in contiguous areas, and they are transversal to countries' borders. Thus, the meaning of the law might change from one city block to another. Once the path of the singularity of cultures is taken, there is no way to stop at the national level and to avoid the conclusion that the law has a myriad of different meanings.

In short, both methodological individualism and holism lead to the conclusion that studying the law is useless. Methodological individualism suggests that even the smallest piece of law is too broad an object of inquiry and should ultimately be explained in terms of individuals, whereas holism claims that even law as a whole is too narrow a field of research to produce any meaningful knowledge. Therefore, when it is objected that a comparison at the micro level is not meaningful because the norm analyzed has important relations with other norms and with certain characteristics of the society, we must be aware that the same objection could be raised no matter how comprehensive the scope of the inquiry. Symmetrically, it is a truism to claim that a comparison at a macro level neglects important micro differences due to its broad scope; however, this problem arises no matter how narrow the focus. Any object of inquiry is at the same time too narrow and too broad.

IV. Micro – Meso – Macro Analysis

The dispute between holism and methodological individualism is without a winner. Should it be inferred that the study of law is merely a pastime and that nothing useful can be learnt from it? The answer is bound to be no, unless one wants to consider science as a whole to be pointless, as even physics is affected by an analogous pathology.

⁶⁰ See Alberto Alesina, Yann Algan, Pierre Cahuc & Paola Giuliano, *Family Values and the Regulation of Labor*, 13 J. EUR. ECON. ASS'N. 599, 599 (2015) ("Empirically, we find that individuals who inherit stronger family ties are less mobile, have lower wages and higher unemployment, and support more stringent labor market regulations.").

Micro, *meso* and macro analyses are all fundamental to obtain a better understanding of the world, and the interaction among these levels of analysis can be greatly instructive. This is even more important for the study of law due to the limited possibility of creating controlled experiments. In this Section, an approach to bridge micro, *meso* and macro comparative law will be suggested and applied to LLSV work as an example of how to perform such analysis.

As a preliminary remark, it is important to underline that there is a heated debate on the concept of downward causation,⁶¹ or the causal links that move from the macro to the micro level. Although many words have been written in support⁶² and against this concept,⁶³ this article takes on position in this issue and remains agnostic on this point. Regardless of the fact that causation might exist at the horizontal level or at the intra-level,⁶⁴ any analysis should nevertheless be coherent. In this vein, it is suggested to bridge the different levels of inquiry as a practical means to test the coherence of the theories without necessarily implying causal connections.

The importance of linking different levels of analysis is not a new idea in social sciences, and a fundamental tool to perform this task is the Boudon-Coleman diagram.⁶⁵

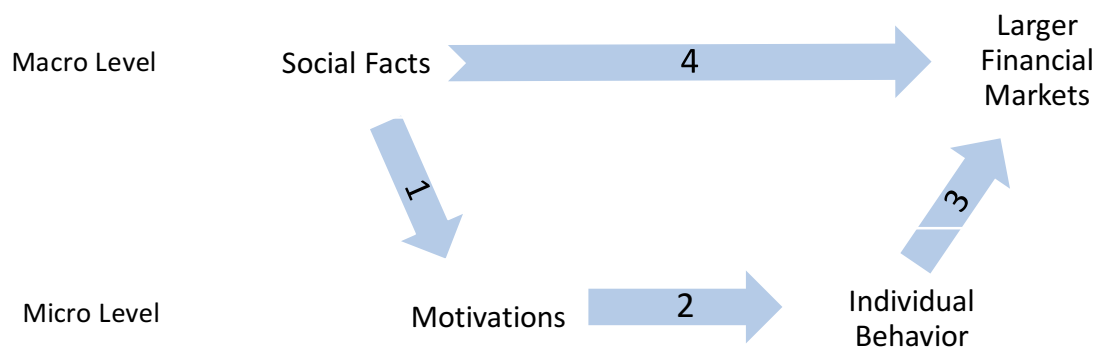
⁶¹ For a brief historical account of this debate see Menno Hulswit, *How Causal is Downward Causation?*, 36 J. GENERAL PHIL. SCI. 261, 261-263 (2005).

⁶² Cf. Peter Abell, Teppo Felin & Nicolai Foss, *Causal and Constitutive Relations, and the Squaring of Coleman's diagram: Reply to Vromen*, 73 ERKENNTNIS 385, 387-388 (2010) (arguing that inter-level relations can be casual, and not only merely constitutive).

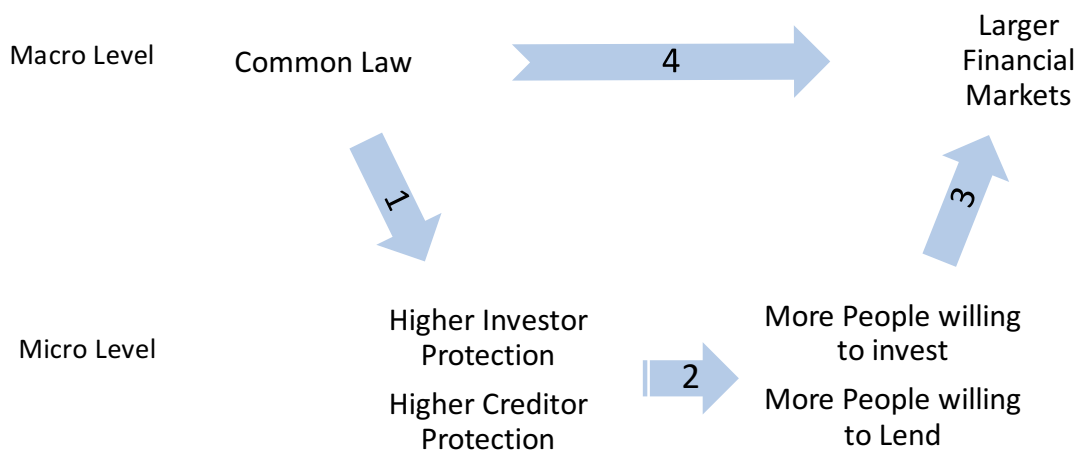
⁶³ E.g. Hulswit, *supra* note 56, at 284 ("The concept of 'downward causation' is muddled with regard to the meaning of causation and fuzzy with regard to what it is that respectively causes and is caused in downward causation.").

⁶⁴ Against this possibility, see Jack Vromen, *Micro-Foundations in Strategic Management: Squaring Coleman's Diagram*, 73 ERKENNTNIS 365, 382 (2010) ("Inter-level relation between routines at the macro-level and the individual actions and interactions as their component parts at the micro-level is constitutive and not causal."). **But see** Abell, Felin & Foss, *supra* note 62, at 387-388 (disagreeing with Vromen's idea that inter-level relationships cannot be causal).

⁶⁵ See Mario Bunge, *Systemism: The Alternative to Individualism and Holism*, 29 J. SOCIO-ECONOMICS 147, 150-152 (2000). For a seminal application of this diagram see James S. Coleman, *Social Theory, Social Research, and a Theory of Action*, 91 AM. J. SOCIOLOGY 1309, 1322-1327 (1986).



Typically, this diagram is used to disentangle Weber’s influential “Protestant ethic thesis,”⁶⁶ but, with some slight modifications, it can also offer a new perspective on the legal origin theory. The first two papers from LLSV on financial markets can be summarized using the following scheme:⁶⁷



In this case, the connection between social facts and social outcome (arrow 4) appears to be coherent. The link between motivations and individual behavior (arrow 2) has been extensively investigated in the economic literature and the theoretical justification appears to be both logical and plausible.⁶⁸ The link between individual behavior and social outcome (arrow 3) is nearly tautological.⁶⁹ Furthermore, the link between social factors and social outcomes can be tested through an independent variable (ratio financial markets capitalization / GDP) that is relatively easy to quantify and that was not created ad hoc for this study.

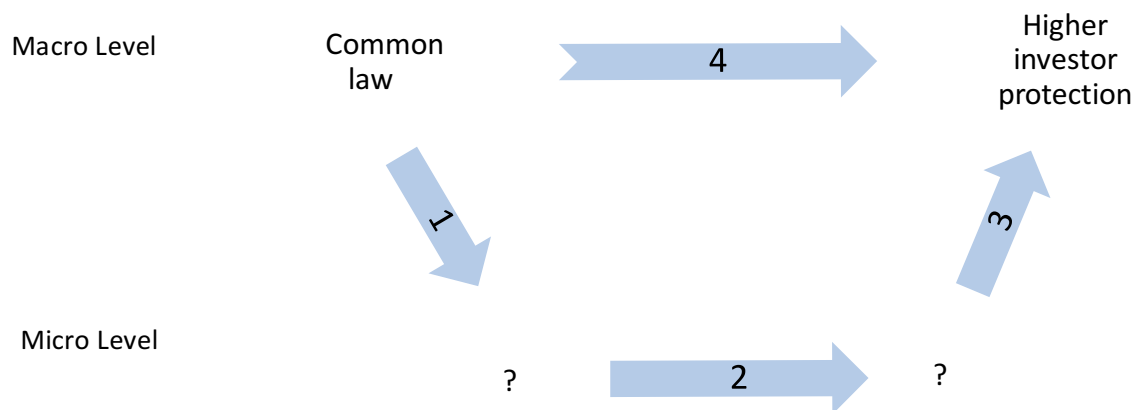
⁶⁶ MAX WEBER, THE PROTESTANT ETHIC AND THE SPIRIT OF CAPITALISM (1905).

⁶⁷ La Porta et al., *supra* note 13.

⁶⁸ *Id.*

⁶⁹ Importantly, a larger financial market does not automatically imply a more efficient financial system. See Pistor, *supra* note 49, at 1652 (“It is not a foregone conclusion that bigger stock or credit markets are necessarily better—a lesson brought home by the global financial crisis.”).

As empirical findings are coherent with theory, the story presented by LLSV offers a possible description of reality. However, despite the attempts made by LLSV, there is still no satisfying explanation for the link between social facts and motivations (arrow 1),⁷⁰ and hence the theoretical construction is extremely fragile. Until a reasonable explanation for arrow 1 is offered, the ghost of spurious correlation cannot be excluded. The weakness of connections clearly emerges when using the Boudon-Coleman diagram to perform a *meso* analysis and considering higher investor protection as the social outcome.



There is no sound reason to argue that common law leads to higher investor protection.⁷¹ The *meso* analysis helps to frame the macro analysis performed by LLSV. In any case, even with this limitation, these two articles offer a coherent and plausible picture. It could be true that for some (unknown) reasons common law leads to larger (not more efficient) financial markets.

All to the contrary, in other works LLSV rely on independent variables (social outcome) that are not easily quantifiable, while leaving arrow 1 unexplained. Their comparative study on the quality of governments is a paradigmatic example.⁷² In this work, LLSV conclude that:

French origin countries are sharply more interventionist (have higher top rates, less secure property rights, and worse regulation). They also have less efficient governments....[and] fall behind common law countries in public good provision: they have higher infant mortality, lower school attainment, higher illiteracy rates, and lower infrastructure quality.⁷³

Most of these characteristics cannot be quantified as easily as the size of financial markets. The security of property rights, the quality of regulation and the infrastructure quality are concepts that

⁷⁰ On this regard, *see* Pistor, *supra* note 49, at 1656 (“It remains unclear, however, how legal origin is linked to the specific rules that ultimately affect outcomes.”).

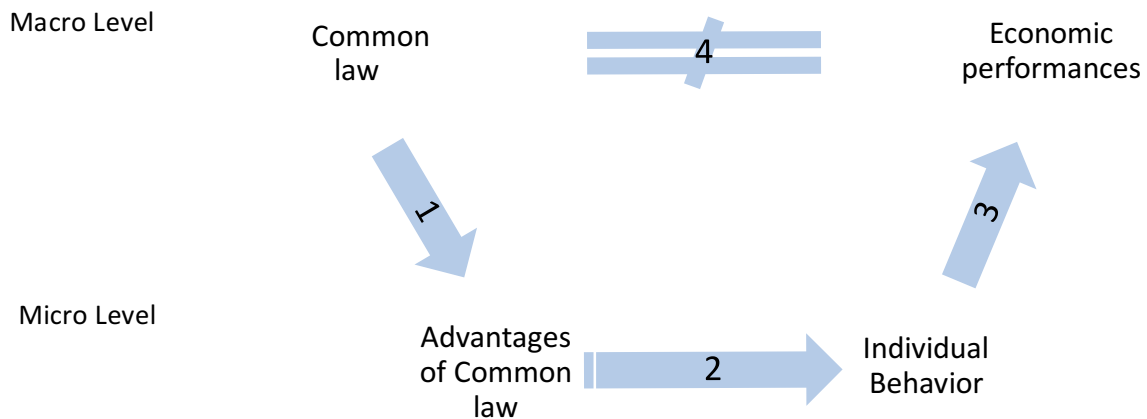
⁷¹ *Id.*

⁷² Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer & Robert W. Vishny, *The Quality of Government*, 15 J. L. ECON. & ORG. 222 (1999).

⁷³ *Id.* at 261.

are extremely hard to measure with a proxy. In other words, the chain of causation is still incomplete and the empirical test is less rigorous, thus it is less informative.

Last, let us move one step up in the micro – meso – macro chain. In this case, arrow 4 relates common law to economic performances.



As there is no significant correlation between legal system and economic performances, arrow 4 is clearly broken. While LLSV claim that:

The economic consequences of legal origins are pervasive. Compared to French civil law, common law is associated with (a) better investor protection, which in turn is associated with improved financial development, better access to finance, and higher ownership dispersion, (b) lighter government ownership and regulation, which are in turn associated with less corruption, better functioning labor markets, and smaller unofficial economies, and (c) less formalized and more independent judicial systems, which are in turn associated with more secure property rights and better contract enforcement.⁷⁴

Despite all these alleged advantages, common law countries do not grow faster than civil law countries⁷⁵ and have a more unequal distribution of income.⁷⁶ Although the findings of the legal origin literature have been discussed at length,⁷⁷ no satisfying explanation for this paradox has been offered. Two options remain open: either a piece of the puzzle that is so relevant to counterbalance

⁷⁴ Rafael La Porta, Florencio Lopez-de-Silanes & Andrei Shleifer, *The Economic Consequences of Legal Origins*, 46 J. ECON. LIT. 298, 302 (2008).

⁷⁵ See Daniel M. Klerman, Paul G. Mahoney, Holger Spamann & Mark I. Weinstein, *Legal Origin or Colonial History?*, 3 J. LEG. ANALYSIS 379 (2011). Indeed, even the creators of the Legal Origin theory had to concede that “it is less clear that legal origins predict aggregate growth.” See La Porta et al., *supra* note 74, at 302.

⁷⁶ See Giuseppe Maggio, Alessandro Romano & Angela Troisi, *The Legal Origin of Income Inequality*, 7 L. & DEV. REV. 1 (2014) (finding that income inequality in common law countries is significantly higher).

⁷⁷ See, e.g., Nuno Garoupa & Carlos Gómez Ligerre, *The Syndrome of the Efficiency of the Common Law*, 29 B.U. INT’L L. J. 287 (2011).

all the supposed advantages of common law is missing,⁷⁸ or the use of independent variables defined ad hoc distorted too much the result of the analysis. Moreover, arrow 1 still remains unexplained.

This example shows that a micro – *meso* – macro analysis can be used to integrate micro and macro studies, shedding new light on both and bypassing the problems of infinite regress. More precisely, holistic and reductionist studies still remain plagued by problems of infinite regress, but in this framework they can cling on each other to prevent drifting toward extreme positions. Additionally, bridging the different levels of analysis can serve as a surrogate for controlled experiments. Although it is certainly a poor surrogate, it might still be the best available in a field as complex as legal studies.

V. Conclusions

Let us imagine a debate between a holist and a reductionist on the methodology of comparative law. The former would argue that the tendency of isolating and measuring components of the law is too simplistic and misleading. In particular, he would argue that a reductionist approach cannot account for many important factors (e.g. culture) and is therefore useless. The latter, instead, would reply that broad and holistic analyses consider too many (and non-quantifiable) factors that obfuscate causal relationships, and hence these studies are also pointless. In this article, it is argued that both scholars are right, yet they are not immune to their own criticisms. Indeed, both theories are affected by a problem of infinite regress, because any object of inquiry is at the same time too narrow and too broad. In this vein, instead of considering the two approaches as alternatives, they should be perceived as complements. Micro and macro comparative law are not mutually exclusive, but they should be bridged through a *meso* analysis. In Section IV, it is shown how a micro – *meso* – macro analysis can be applied to the Legal Origin debate.

⁷⁸La Porta et al. advance a similar hypothesis. See La Porta et al., *supra* note 74, at 302 (“One possible explanation of the aggregate growth evidence is that civil law countries have found compensating mechanisms to overcome the baggage of their legal tradition in the long run.”).