Special Section
Network Analysis and Comparative Law Methods

Network Analysis and Legal Scholarship

By Niels Petersen & Emanuel V. Towfigh[*]

A. Introduction

In their contribution in this issue Mattias Derlén and Johan Lindholm use social network analysis to show that the European Court of Justice is a precedent-driven constitutional court that is comparable to the US Supreme Court with regard to the citation of precedents.[1] The article and its use of network analysis as a method provoked a lively debate on the editorial board of the *German Law Journal* about comparative law theory and methods generally and the place of empirical (including network) analyses in the comparative law discipline. For this reason, the editorial board commissioned this "special section" of contributions dedicated broadly to approaches to comparative law. In his essay in this section, for example, Jens Frankenreiter offers a detailed assessment of Derlén's and Lindholm's analysis.[2] In this piece, we take a broader perspective and look at the utility and the limits of network analysis for legal scholarship generally.

In the first part we will give a brief introduction to network analysis and its value for legal scholarship. The second part deals with possible objections to the employment of network analysis as a methodological tool of legal scholarship. This discussion will reflect some general concerns that legal scholars often raise when it comes to empirical legal scholarship. This assessment highlights, in particular, that methods of empirical research primarily have a descriptive purpose. They do not necessarily have normative implications.

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[1] *See* Derlén & Lindholm in this issue.

[2] *See* Frankenreiter in this issue.

B. Network Analysis and Its Use for Legal Scholarship

Social network analysis is an empirical tool that has spread from mathematics and computer science to the social sciences.[3] At first it was adopted in modern, empirical sociology and then passed on to other disciplines, such as economics and political science. Social network analysis describes the links between different nodes of a network. Depending on the network, these nodes can represent different actors or things, such as individuals, organizations, states, courts or – as in the case of Derlén and Lindholm – the judgments of apex courts such as the Court of Justice of the European Union and the U.S. Supreme Court. The links can also represent many forms of relationships, e.g. personal interaction, shared characteristics, formal contracts or citations. The network that is represented in a network analysis does not need to be static. It can also be dynamic and measure the flow of information between nodes and changes in the network structure.

In legal scholarship network analysis has, as of yet, only been used sparingly.[4] The existing studies using social network analysis have – as with the Derlén and Lindholm studies – most prominently focused on citations.[5] Such citations can either be citations of the court's own precedents or of decisions of other (mostly foreign) courts. For example, an influential study of James Fowler and colleagues analyzed the importance of individual precedents of the U.S. Supreme Court using social network analysis.[6] Yonatan Lupu and Erik Voeten use social network analysis to show that the European Court of Human Rights uses references to its own case law in order to increase the legitimacy of its judgments.[7] With regard to the citations of foreign court decisions, Martin Gelter and Mathias Siems analyze citation patterns of European supreme courts in private law matters.[8] Finally, Sergio Puig has analyzed the interconnectedness of international arbitrators and sparked a vivid debate both on substantive and methodological grounds.[9]

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[3] Nicola Lettieri *et al.*, *A Computational Approach for the Experimental Study of Eu Case Law: Analysis and Implementation*, 6:56 SOCIAL NETWORK ANALYSIS AND MINING 1 (2016).

[4] *See* Ryan Whalen, *Legal Networks: The Promises and Challenges of Legal Network Analysis*, 2016 MICHIGAN STATE LAW REVIEW 539 (2016).

[5] *See id*. at 547.

[6] James H. Fowler *et al.*, *Network Analysis and the Law: Measuring the Legal Importance of Precedents At the U.S. Supreme Court*, 15 POLITICAL ANALYSIS 324 (2007).

[7] Yonatan Lupu & Erik Voeten, *Precedent in International Courts: A Network Analysis of Case Citations By the European Court of Human Rights*, 42 BRITISH JOURNAL OF POLITICAL SCIENCE 413 (2012).

[8] Martin Gelter & Mathias M. Siems, *Language, Legal Origins, and Culture Before the Courts: Cross-Citations Between Supreme Courts in Europe*, 21 SUPREME COURT ECONOMIC REVIEW 215 (2013).

[9] Sergio Puig, *Social Capital in the Arbitration Market*, 25 EJIL 387 (2014). This text was accompanied by a small review symposium on *EJIL: Talk!* (HTTPS://WWW.EJILTALK.ORG/DISCUSSION-OF-SERGIO-PUIGS-SOCIAL-CAPITAL-IN-THE-ARBITRATION-MARKET/, last accessed 23 April 2017).

The existing studies only scratch the surface of the potential of social network analysis for legal research. Network analysis may be particularly useful to study informal networks of courts and other legal actors in areas where formal hierarchies do not exist, or where the formal hierarchies do not represent the actual relationship of these actors. For example, the relationship between the European Court of Human Rights, the European Court of Justice and domestic constitutional courts of EU member states escapes traditional descriptions of hierarchy. While there are many qualitative accounts analyzing these relationships, a network analysis can shed further light on the interaction between these courts. Network analysis may thus be used to add further *external perspectives* to the law. It might also be employed to find additional doctrinal arguments, from an *internal perspective*, in what may be considered an empirically founded, sophisticated hermeneutical analysis. On one hand, it may be used to analyze and inform us about the interconnectedness of normative concepts in terms of textual analysis.[10] On the other hand, it might help us better understand the application of the law by the administration and court system when seeing which meaning they actually attribute to the legal texts. This exercise may also provide an empirical basis for one of the "pet arguments" commonly invoked by German legal scholarship, namely the identification of the "*herrschende Meinung*" (predominant opinion). For such approaches, lawyers may turn to research in empirical linguistics.

C. Objections to the Use of Network Analysis and Empirical Methods

One common point of misunderstanding between legal scholars and social scientists is the difference in perspective. Lawyers usually have a normative focus. They want to know how the world *ought to be*, according to the norms of law.[11] In contrast, social scientists have an empirical perspective. They want to describe how the world *is* and to explain why things are as they are. A social science study may thus be the basis for an informed normative argument.[12] But a normative argument does not automatically follow from the results of an empirical study.

When studying how the CJEU deals with precedent, for example, we can take a normative and an empirical perspective. The normative question is whether precedent *should* have a

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[10] *See* Emanuel V. Towfigh, *Komplexität und Normenklarheit — oder: Gesetze sind für Juristen gemacht*, 48 DER STAAT 29 (2009).

[11] In this instance "normative" is used in the sense prevailing in continental European legal scholarship (following the somewhat descriptive Latin undertone), rather than in the sense U.S. lawyers tend to use it, referring to value judgments (in line with the ubiquitous English meaning).

[12] *See* Niels Petersen, *Avoiding the Common Wisdom Fallacy: The Role of Social Sciences in Constitutional Adjudication*, 11 INTERNATIONAL JOURNAL OF CONSTITUTIONAL LAW 294 (2013); Emanuel Towfigh, *Empirical Arguments in Public Law Doctrine*, 12 INTERNATIONAL JOURNAL OF CONSTITUTIONAL LAW 670 (2014).

binding effect on subsequent decisions of the court.[13] In contrast, an empirical perspective asks whether the Court *actually* refers to its own precedents in its jurisprudence and to what extent these – in fact – have a binding effect. These questions have to be separated. In one legal system precedent might be normatively binding but have little effect on the court's actual jurisprudence. In another jurisdiction precedent can have considerable influence on the subsequent jurisprudence even though it is not binding. When Derlén and Lindholm argue that the CJEU's case law amounts to a case law system,[14] the argument is an empirical one. It does not suggest that the Court's decisions are normatively binding. Certainly, one can argue that the concept of a case law system is not well defined, as Jens Frankenreiter has observed in his comment.[15] However, this is an empirical claim, challenging the description, not a normative one.

There are a number of "typical" objections that are raised against empirical legal research, and also against network approaches. Each of them points both to a virtue and to a limitation to this type of argument in the realm of law.

First, to be able to appraise a phenomenon empirically, one needs some sort of representation, or model, of that phenomenon. Obviously, this model cannot be a perfect representation of reality: It is for the very reason that we cannot fully gauge "reality" in the first place that we turn to empirical methods. In empirical research, data is aggregated and some information is not taken into account by design. Therefore, empirical models can only represent a certain perspective of "reality". The perspective should be chosen according to the aim that a researcher pursues. This choice is necessarily subjective, even though methodological scrutiny proscribes certain choices. Yet, while we have to consider that our empirical insights are necessarily imbued by this subjectivity, the possibility of testing them against "reality" adds an additional layer of scrutiny and thus an enriched understanding of the phenomenon. For example, a city map may be a good device to orient oneself in a town — but if you want to assess the color of the roofs of the houses in that region it is certainly a bad choice. We assume that the color of the roofs is not a relevant information for navigating through a city and therefore simplify our model of reality neglecting this bit of information. As we can never appreciate the world in its entire complexity, we use simplification to actually enhance our understanding. We can also test that choice: If a city map with correct roof colors helps us move around a city significantly better, we should reconsider the choice to mask roof colors out. Criticism vis-à-vis models therefore cannot be leveled at the model not properly representing "reality" but must claim that the specific model is unfit to assess the particular research question. Without claiming that an "objective reality" exists, empiricists act "as if" there was one that they could approximate, at least

[13] Jacob has undertaken an illuminating discussion of the question. *See* MARC JACOB, PRECEDENTS AND CASE-BASED REASONING IN THE EUROPEAN COURT OF JUSTICE 219-74 (2014).

[14] *See* Derlén & Lindholm in this issue.

[15] *See* Frankenreiter in this issue.

some sort of "best understanding". Without this assumption we should not enter airplanes, and we could not make cell phone calls or use GPS.

Related to this issue is a *second* line of criticism against empirical research. Sound empirical research, if it is not merely explorative, is based on theories about nexuses and relationships of observable, and testable, patterns and causal relationships. Again, these theories are necessarily less complex than the "real world" or than sophisticated (but untestable) narratives. These theories, and the evidence generated when empirically testing them, may therefore seem minimalist or even banal; but if we want to empirically "identify" patterns and causal relationships, there is no other path. Of course, there is no *need* to identify patterns and causal relationships, and to be very clear: not everybody *should* to it. But understanding how legal texts impact behavior (and empirical questions in the broader context of this question) seems to be an interesting and worthwhile line of research that will enhance our understanding of the law.

The problem is amplified by the fact that the human brain is extremely talented in developing sophisticated narratives to accommodate any kind of empirical results; empiricists laconically call this the "*I've known it all along*"-bias.[16] It is thus as important to value the contribution of incremental insights, as it is to remain modest in sight of such insights and not to oversell them.

A third problem may occur on the basis of terminology. For example, an empirical researcher may refer to "randomness" when they cannot establish a certain pattern in their data; or scholars in law and economics may coin a specific form of behavior as "non-rational" when all they mean is that some observed behavior does not conform to a certain model of behavior. Such labels may seem like harsh criticism and put-off scholars not conversant with the particular theoretical or empirical models and methods.

D. Conclusion

New methodological approaches always pose a challenge to established standards of scientific research. This is not different in legal scholarship. In legal scholarship, integrating new perspectives is a particularly intricate (but rewarding) exercise, as the law departs from a normative basis, and assesses, an event in "reality" in order ultimately to take a decision. It seems straightforward to assume that network analysis can provide us with important insights both in doctrinal and functionalist approaches to the law. But these insights come from a very specific angle and can only complement insights gained through other — normative and empirical — methods. Integrating a multitude of incremental theoretical and empirical insights, rich hermeneutic arguments, all of which follow strict methodological

[16] *See* Petersen, *supra* note 12. *See also* D. J. WATTS, EVERYTHING IS OBVIOUS (2012); P.F. Lazarsfeld, *The American Soldier: An Expository Review*, 13 PUBL. OPINION QUART. 377, 380 (1949).

scrutiny, and employing grand (and therefore obviously less rigorous) narratives as a framework to combine them into a broader understanding of the law, its meaning and function, may lead us to an “emergent” appreciation of the phenomenon of law.