

ESSAY

Tracing the Footprints of International Law Ideas: A Scientometric Analysis

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I. INTRODUCTION

International law is a vast and dynamic field, shaped and influenced by a multitude of actors ranging from states and international organizations to non-governmental organizations and individuals. At the core of this dynamic field lies scholarship, which serves as a key driver of the development and evolution of international law. This, at least, is what we are trained to believe.

True, the orthodoxy rejects the idea of vesting scholarship with excessive importance, and this rejection is also enshrined by its embedding into one of the pillars of what has been called the “belief system” of international law.¹ Thus, Article 38(1) of the International Court of Justice (ICJ) Statute relegates scholarship to what appears an afterthought:² not a source, not even a material one,³ but a “subsidiary means for the determination of rules of law.”⁴ Even in that category, it is abundantly clear to most concerned with the question that the other “subsidiary means,” “judicial decisions,” is far more important for its intended function—that of outlining the rules that will effectively be applied by an adjudicator.⁵ As Fitzmaurice put it, “[a] decision is a *fact*: an opinion, however cogent, remains an opinion.”⁶

The circumstance that decisions of international courts and tribunals would be replete with citations to their own “precedents,”⁷ and almost

1. See, e.g., JEAN D’ASPREMONT, *INTERNATIONAL LAW AS A BELIEF SYSTEM* (2018).

2. What appears an afterthought, because the *travaux* demonstrate it was not: see generally *Procès-verbaux of the Proceedings of the Advisory Committee of Jurists*, League of Nations (June 16–July 24, 1920) (discussing the importance of scholarship as a source of international law).

3. See, e.g., Gerald Gray Fitzmaurice, *Some Problems Regarding the Formal Sources of International Law*, in *SOURCES OF INT’L L.* 57 (Martti Koskenniemi ed., 2000) (arguing that a material source of law is one which has an actual and concrete character that impinges directly on the matters at issue).

4. U.N., Statute of the International Court of Justice art. 38(1)(d).

5. See, e.g., Harlan Grant Cohen, *Theorizing Precedent in International Law*, in *INTERPRETATION IN INTERNATIONAL LAW* 268 (Andrea Bianchi, Daniel Peat & Matthew Windsor eds., 1st ed. 2015) (discussing the importance of judicial precedents as a source of international law).

6. Fitzmaurice, *supra* note 3, at 76; see also Georg Schwarzenberger, *The Inductive Approach to International Law*, 60 HARV. L. REV. 539, 553–54 (1947).

7. See MOHAMED SHAHABUDEEN, *PRECEDENT IN THE WORLD COURT* (1996); Michal Balcerzak, *The Doctrine of Precedent in the International Court of Justice and the European Court of Human Rights*, 27 POL. Y.B. INT’L L. 131 (2004); Yonatan Lupu & Erik Voeten, *Precedent in International Courts: A Network Analysis of Case Citations by the European Court of Human Rights*, 42 BRIT. J. POL. SCI. 413 (2012); Aldo Zammit Borda, *A Formal Approach to Article 38(1)(d) of the ICJ Statute from the Perspective of the International Criminal Courts and Tribunals*, 24 EUR. J. INT’L L. 649 (2013); Aldo Zammit Borda, *Appraisal-*

entirely devoid of references to scholarly authorities, does nothing to dispel the presumption.⁸ Moreover, international lawyers—at least some—have long been fond of attaching the utmost importance to the pronouncements of international courts and tribunals, with international judges frequently being portrayed as capable of neutrally identifying an imprecise law in the struggle between competing sovereign claims.⁹ This “judge-centredness of the international legal self” continues to permeate modern approaches to international law scholarship,¹⁰ notwithstanding warnings.¹¹

Yet, whatever its formal value in the doctrine of sources, no international lawyer seriously questions that scholarship serves as a crucial tool for unpacking the complexity and nuance of international law and in shaping its trajectory in meaningful ways. Perhaps more importantly, no international lawyer, even the most practice-oriented, questions the

Based and Flexible Approaches to External Precedent in International Criminal Law, 28 LEIDEN J. INT'L L. 643 (2015); Stewart Manley, *Referencing Patterns at the International Criminal Court*, 27 EUR. J. INT'L L. 191 (2016); Stewart Manley, *Citation Practices of the International Criminal Court: The Situation in Darfur, Sudan*, 30 LEIDEN J. INT'L L. 1003 (2017); Damien Charlotin, *The Place of Investment Awards and WTO Decisions in International Law: A Citation Analysis*, 20 J. INT'L ECON. L. 279 (2017); Wolfgang Alschner & Damien Charlotin, *The Growing Complexity of the International Court of Justice's Self-Citation Network*, 29 EUR. J. INT'L L. 83 (2018); Niccolò Ridi, *Mirages of an Intellectual Dreamland? Ratio, Obiter and the Textualization of International Precedent*, 10 J. INT'L DISP. SETTLEMENT 361 (2019); Niccolò Ridi, *The Shape and Structure of the 'Usable Past': An Empirical Analysis of the Use of Precedent in International Adjudication*, 10 J. INT'L DISP. SETTLEMENT 200 (2019).

8. See, e.g., Michael Peil, *Scholarly Writings as a Source of Law: A Survey of the Use of Doctrine by the International Court of Justice*, 1 CAMBRIDGE J. INT'L COMPAR. L. 136 (2012); Sondre T. Helmersen, *The Use of Scholarship by the WTO Appellate Body*, 7 GOETTINGEN J. INT'L L. 309 (2016); Sondre Torp Helmersen, *Finding 'the Most Highly Qualified Publicists': Lessons from the International Court of Justice*, 30 EUR. J. INT'L L. 509 (2019); SONDRÉ TORP HELMERSEN, *THE APPLICATION OF TEACHINGS BY THE INTERNATIONAL COURT OF JUSTICE* (2021).

9. 1 HENRY WHEATON, *ELEMENTS OF INTERNATIONAL LAW: WITH A SKETCH OF THE HISTORY OF THE SCIENCE* 57–58 (1836) (“In the present imperfect state of positive international law, which acknowledges no permanent authorized judicial expositor of its principles and rules, resort must necessarily be had to the precedents collected from the decisions of the boards of arbitration specially constituted to determine controversies between particular states, or of the courts of prize established in every country to judge of the validity of captures made in war. Greater weight is justly attributable to the judgments of the mixed tribunals, appointed by the joint consent of the two nations between whom they are to decide, than to those of admiralty courts established by and dependent on the instructions of one nation only.”); see also 1 ROBERT PHILLIMORE, *COMMENTARIES UPON INTERNATIONAL LAW* 81 (1854) (“We have a series of judicial decisions, in England and in this country, in which the usages and the duties of nations are explained and declared with that depth of research, and that liberal and enlarged inquiry, which strengthen and embellish the conclusions of reason. They contain more intrinsic argument, more full and precise details, more accurate illustrations, and are of more authority, than the loose *dicta* of elementary writers.”); PASQUALE FIORE, *NUOVO Diritto Internazionale Pubblico: Secondo i Bisogni della Civiltà Moderna* 42 (1865) (referring to “[l]e sentenze dei tribunali internazionali”).

10. See, e.g., Fuad Zarbiyev, *On the Judge Centredness of the International Legal Self*, 32 EUR. J. INT'L LAW 1139 (2021) (arguing that the judge-centred approach to the international legal self is still prevalent in modern international law scholarship).

11. R. Y. Jennings, *Recent Developments in the International Law Commission: Its Relation to the Sources of International Law*, 13 INT'L. & COMPAR. L. Q. 385, 394 (1964) (“[I]t is possible to exaggerate the importance of the judicial function in international law.”).

intellectual importance of legal scholarship as defining the world they operate in. For international lawyers *as* scholars, one wonders if the question is even worth asking: scholarship is the vehicle through which scholars carry themselves intellectually, communicate their ideas to the public, establish links, get jobs, and so on. The blogosphere and social media provide an endless stream of reflections on the lives and opinions of the professoriate, to the extent that the question has been asked of whether research in international law may have graduated to the level of meta-inquiry on research in international law. The college is no longer invisible, if it ever was, and it certainly is self-aware.¹²

Moreover, international law scholarship remains relevant even when taken as a *negative* point of reference. Three quick examples will suffice here. In an episode of March 2023 of the ASIL podcast *International Law Behind the Headlines*, former International Criminal Court prosecutor Luís Moreno-Ocampo cited with approval an observation made by José Alvarez to the effect that international legal teaching has not kept up with international legal practice.¹³ In the different setting of a Lalive Lecture, frequent arbitrator Karl-Heinz Böckstiegel insisted that he did not secure too many friends by reflecting openly on the differences between decision-making in an arbitral setting and the writing of scholarly commentary.¹⁴ Finally, in a recent article on the continued relevance of Third World Approaches to International Law (TWAAIL) in the face of its “unfulfilled promise,” a senior diplomat from North Africa was quoted as finding it “useless” as far as the practice of international law was concerned.¹⁵

The question is not whether international legal scholarship suffers from intellectual marginalization.¹⁶ It does not. But how and when it is relevant, and what kind of scholarship by what kind of author is relevant—that is a

12. See, e.g., Oscar Schachter, *The Invisible College of International Lawyers*, 72 NW. U. L. REV. 217 (1977) (explaining how the dispersed and diverse professional community constitutes an invisible college dedicated to a common intellectual enterprise); Diana Crane, *Social Structure in a Group of Scientists: A Test of the “Invisible College” Hypothesis*, 34 AM. SOCIO. REV. 335 (1969) (discussing the modern life of the notion originating in sociology and, later, scientometrics). For more recent takes on the “invisible college of international lawyers,” see Santiago Villalpando, *The “Invisible College of International Lawyers” Forty Years Later*, 3 EUR. SOC’Y OF INT’L L. CONF. PAPER SERIES 1 (2013) and Luíza Leão Soares Pereira & Niccolò Ridi, *Mapping the “Invisible College of International Lawyers” Through Obituaries*, 34 LEIDEN J. INT’L L. 67 (2018).

13. *International Law Behind the Headlines: Episode 41: The ICC and Russia with Luís Moreno Ocampo*, AM. SOC’Y INT’L L. (Mar. 22, 2023), <https://www.asil.org/resources/podcast/ep41>.

14. See Karl-Heinz Böckstiegel, *Commercial and Investment Arbitration: How Different Are They Today? The Lalive Lecture 2012*, 28 ARB. INT’L 577, 588 (2012).

15. Naz K. Modirzadeh, “[L]et Us All Agree to Die a Little”: TWAAIL’s Unfulfilled Promise, 65 HARV. INT’L L.J. (forthcoming 2024).

16. Compare with Mark Tushnet, *Legal Scholarship: Its Causes and Cure*, 90 YALE L.J. 1205, 1205 (1981) (“I cannot imagine, for example, an intellectual history of contemporary America in which legal thought would play an important part . . . [t]he intellectual marginality of legal scholarship is all the more striking in light of the immense role that law plays in American society.”).

set of open questions. We are far from clearly understanding the relationship between international legal scholarship and the field, discipline, or reality it describes, criticises, or advocates change for. We have but an impressionistic understanding of how ideas set out in international legal scholarship travel, what interactions they have with other law-making, law-determining, and law-applying processes, and indeed with *other* scholarship, other universes of ideas. In a nutshell, the notion that international law scholarship matters is roughly the frontier of our knowledge; what lies beyond—which of it does matter, to whom, and how—is mostly uncharted territory.

To chart this territory, this study employs scientometrics and other forms of data mining to reveal the pathways of ideas in international law. By using scholarship as a proxy for ideas and citations as a measure of proximity and influence, we aim to understand how open or closed the field, or sub-fields within it, is to their environment. Furthermore, we seek to uncover what kinds of communities cluster around what kinds of ideas, and how responsive legal decision-makers are to developments in scholarship.

Our analysis moves into two main parts. In the first, we use scientometrics—the “quantitative study of science, communication in science, and science policy”¹⁷—to reveal the footprints of scholarship *within* scholarship. We use scholar-to-scholar citations to create a map of international law scholarship and its communities. We also aim to identify “turning points” in the development of international legal scholarship by relying on a time-aware measure of influence.

In the second part of this Essay, we consider the citation of scholarly authorities in two forms of international adjudication. First, we look at citations by arbitral tribunals in investment arbitration to assess any similarity between what scholars and adjudicators cite.¹⁸ Second, we consider the citations made to scholarship by states and other actors in written submissions to the International Tribunal for the Law of the Sea (ITLOS) in current proceedings relating to the Request for an Advisory Opinion submitted by the Commission of Small Island States on Climate Change and International Law.¹⁹ The point there is to understand what type of scholarship may be used by states, international organizations, and other stakeholders.

17. Loet Leydesdorff & Staša Milojević, *Scientometrics*, in 21 INTERNATIONAL ENCYCLOPEDIA OF THE SOCIAL & BEHAVIORAL SCIENCES 322 (2d ed. 2015).

18. For a similar approach in domestic adjudication, see Deborah J. Merritt & Melanie Putnam, *Judges and Scholars: Do Courts and Scholarly Journals Cite the Same Law Review Articles?*, 71 CHI-KENT L. REV. 871 (1996).

19. Request for an Advisory Opinion by the Commission of Small Island States on Climate Change and International Law (Dec. 12, 2022), https://www.itlos.org/fileadmin/itlos/documents/cases/31/Request_for_Advisory_Opinion_COSIS_12.12.22.pdf. On the proceedings, see Donald Rothwell, *Climate Change, Small Island States, and the Law of the Sea: The ITLOS Advisory Opinion Request*, 27 ASIL INSIGHTS 1 (2023).

II. SCHOLARS CITING SCHOLARS

As the methodology used for this Essay is new to international law, it requires a detailed explanation. This section first explains what scientometrics is and how it works and describes how the data were gathered for the current study. This allows us, in the second part of the section, to offer two figures showing the most cited journals and the most cited authors in the field, as of the date of writing of this Essay. In the last part of this section, we turn to a temporal analysis, in which we show what the salient topics have been in international law scholarship over the last 30 years, based on an analysis of what is called “citation bursts.”

A. *Relevance Through Citations: Scientometrics*

The field of scientometrics has been defined as the “quantitative study of science, communication in science, and science policy,”²⁰ or as “the quantitative methods of the research on the development of science as an informational process.”²¹ However, it is specifically concerned with “the exploration and evaluation of scientific research.”²² Among the many uses and goals of scientometrics, we are particularly concerned with its potential for finding and understanding the “research front” in a particular theme or discipline—that is to say, “an emergent and transient grouping of concepts and underlying research issues.”²³

In the scientometrics market, the citation is the main currency.²⁴ It serves as a flexible unit of measurements, one that makes good sense in the real world. One of the most striking examples is the fact that high citation counts have been, for a long time, positively associated with the subsequent impact. For example, high citation counts have been correlated with the awarding of Nobel prizes²⁵—a trend that more recent research has confirmed as accurate, if increasingly difficult to predict.²⁶

20. Leydesdorff & Milojević, *supra* note 17, at 2.

21. John Mingers & Loet Leydesdorff, *A Review of Theory and Practice in Scientometrics*, 246 EUR. J. OPERATIONAL RSCH. 1, 1 (2015).

22. *Id.*

23. Chaomei Chen, *CiteSpace II: Detecting and Visualizing Emerging Trends and Transient Patterns in Scientific Literature*, 57 J. AM. SOC'Y INFO. SCI. & TECH. 359, 359 (2006).

24. Mingers & Leydesdorff, *supra* note 21, at 1 (“Whilst scientometrics can, and to some extent does, study many other aspects of the dynamics of science and technology, in practice it has developed around one core notion—that of the citation.”).

25. Gregory J. Feist, *Quantity, Quality, and Depth of Research as Influences on Scientific Eminence: Is Quantity Most Important?*, 10 CREATIVITY RSCH. J. 325, 326 (1997).

26. See, e.g., Yves Gingras & Matthew L. Wallace, *Why It Has Become More Difficult to Predict Nobel Prize Winners: A Bibliometric Analysis of Nominees and Winners of the Chemistry and Physics Prizes (1901–2007)*, 82 SCIENTOMETRICS 401 (2010) (arguing the size and organization of chemistry and physics fields in particular has hindered the predictive power of bibliometric data regarding the Nobel Prize).

After parsing citations from scholarly works, it is possible to employ a variety of techniques to make sense of the data. First of all, it is possible to simply count the number of citations that are received (or made) by any scholarly work. With high citation counts being accurate predictors of impact, this is important in its own right. However, it is possible to go beyond this approach and apply essential notions of network analysis to a scientific field, shifting the core research question to authorship, or, most importantly, to *who cites whom* or *what*.²⁷

This can be done through co-authorship analysis, where individual nodes in the network (authors) are given greater connectedness on the basis of the number of works that they have authored together. Or it is possible to consider basic citation analysis, which shifts nodes closer together depending on the number of times two authors tend to cite each other. Still, it is possible to go further, making relatedness a function of how many times two works *are cited* together (co-citation analysis) or even of the number of times they cite the same works together. Although the possibilities are truly endless, the nature of a field's structure affects the data collection process. The nature of the process is particularly well-suited to the discovery of "invisible colleges,"²⁸ and we thus seek to confirm our hypotheses, anticipating encounters with islets, archipelagos, and whole continents.

To do so, we gather citation data on international law scholarship. This brings us to a common problem in scientometrics: citation analyses of this kind are only as good as what is fed to the machine. Generally speaking, Clarivate's Web of Science (WoS)²⁹ and Scopus³⁰ are the preferred sources for extracting citation data, which is thus rendered relatively uniform and may be downloaded in computer-readable format. However, the data so obtained is by no means perfect. Not only are these services not freely accessible, but they can also be fairly underinclusive (though rarely culpably), especially when scholarly works such as books and book chapters are concerned. This may be problematic in the context of investment arbitration

27. For an overview, see Farideh Osareh, *Bibliometrics, Citation Analysis and Co-Citation Analysis: A Review of Literature I*, 46 LIBRI 149 (1996); Farideh Osareh, *Bibliometrics, Citation Analysis and Co-Citation Analysis: A Review of Literature II*, 46 LIBRI 217 (1996); Howard D. White & Katherine W. McCain, *Visualizing a Discipline: An Author Co-Citation Analysis of Information Science, 1972-1995*, 49 J. AM. SOC'Y INFO. SCI. 327 (1998).

28. See, e.g., Crane, *supra* note 12, at 161 (arguing the existence of an invisible college can be inferred if scientists who published together had social ties and could be differentiated based on social participation); Schachter, *supra* note 12, at 217 (arguing the invisible college of international law is exemplified in the communication and collaboration of the journals in international law); Markus Gmür, *Co-Citation Analysis and the Search for Invisible Colleges: A Methodological Evaluation*, 57 SCIENTOMETRICS 27, 27 (2003) (arguing a citation is an indicator of communication in a scientific field and serves as a basis for identifying invisible colleges).

29. Clarivate's Web of Science can be accessed via the following link: <http://webofknowledge.com>.

30. Scopus can be accessed via the following link: <https://www.scopus.com/>.

scholarship, where different sources, some far less formal than others, all have their place. The obvious alternative, Google Scholar, mitigates these problems, being freely accessible, speedy, and more thorough for the counting of sources such as books and SSRN.³¹ It does, however, suffer from the opposite problem: being prone to over-inclusiveness, duplicate entries, and—most problematically—poor data quality on output.

We chose quality over quantity, and thus obtained citation data from Scopus. The results were then processed with the VOSViewer software by Nees Jan van Eck and Ludo Waltman.³²

It should be pointed out that this dataset suffers from an almost inevitable limitation, which has to do with language diversity. In the simplest of terms, it is almost impossible to gather data relating to sources published in languages other than English. This has to do with the way scholarship is published and indexed online, and with the circumstance that the largest and most used indexing services are inevitably biased towards the largest market—the English language one.

If the assumption that scholarship published in different languages must be irrelevant seems too much of a stretch,³³ there seems to be enough anecdotal evidence to suggest that the status of English as the *lingua franca* of scientific communication may make the limitation more tolerable.³⁴

1. *The Data*

i. *Garbage in, Garbage out: A Caveat*

The concept of “garbage in, garbage out” (GIGO) is a well-known principle in computer science and information technology. It refers to the idea that the quality of the output of a system is determined by the quality of the input. In other words, if the input data is flawed or inaccurate, the output will be too. The principle applies equally to scientometric research. In scientometrics, the analysis of scientific publications is aimed at

31. See, e.g., Anne-Wil K. Harzing & Ron van der Wal, *Google Scholar as a New Source for Citation Analysis*, 8 ETHICS SCI. & ENV'T POL. 61 (2008) (arguing Google Scholar outperforms alternative sources of data due to its comparatively broader range of data sources); Nabil Amara & Réjean Landry, *Counting Citations in the Field of Business and Management: Why Use Google Scholar Rather than the Web of Science*, 93 SCIENTOMETRICS 553 (2012) (finding that the average performance of research outputs of scholars in business school, regarding the number of citations, is much higher when performances are assessed using the Google Scholar database).

32. See generally Nees Jan van Eck & Ludo Waltman, *Visualizing Bibliometric Networks*, in MEASURING SCHOLARLY IMPACT 285, 301–02 (Ying Ding et al. eds., 2014) (discussing the choice of software and use of data for bibliometric networks). The software (free, but not Open Source) can be downloaded from <http://www.vosviewer.com>.

33. THOMAS SCHULTZ, TRANSNATIONAL LEGALITY: STATELESS LAW AND INTERNATIONAL ARBITRATION 153–59 (2014) (discussing the School of Dijon and the central importance of scholarship in the French language for the way we understand great debates in arbitration law today).

34. See generally C. Tardy, *The Role of English in Scientific Communication: Lingua Franca or Tyrannosaurus Rex?*, 3 J. ENG. FOR ACAD. PURPOSES 247 (2004) (discussing the central character of the English language for scientific communication).

understanding patterns and trends in research activity. The accuracy and completeness of data sources are critical to the validity of any analysis. However, collecting citations manually is a difficult, vexing, and resource-expensive process. In passing, it may also be mentioned that it also requires access to the full-text archives of the publications concerned, which academic publishers tend to perceive as a big ask and would limit the ability of a large number of researchers whose institutions do not have access to the relevant repositories. Hence the need for third-party databases, such as Web of Science, Scopus, and Dimensions. None of these services are perfect. Yet, in spite of their shortcomings, they remain better than the alternatives.

The Web of Science, which we choose for our analysis, is produced by Clarivate Analytics, and it focuses on citation analysis and covers more than twenty thousand peer-reviewed journals across all academic fields.³⁵ It has been the traditional choice for scientometric research, mostly on account of having acquired market dominance by being the first around the block—a circumstance which competitors have rightly singled out as deeply problematic.³⁶ While Web of Science is by no means the most inclusive among all indexing services, this is not necessarily a drawback. Though other services have rightly accepted that certain scholarly fields do not unfold neatly within a monolithic set of core journals, their additional indexing of preprints, chapters in edited collections, and specialised as well as generalist journals tends to generate unwieldy amounts of data. This can make it difficult to separate the wheat from the chaff. Another inevitable drawback—this time, one shared with all other indexing services—is linguistic coverage, as non-English works or journals are essentially left out. The question of lack of linguistic diversity and full-on language bias in international legal scholarship has been tackled elsewhere, and the main causes of this phenomenon have been correctly attributed to the lack of availability and access to scholarly sources other than those in English.³⁷ Poor indexation is another symptom of the same problem. It may be added to this point that the bibliometric data leveraged for the purposes of this study *does* account for non-English language sources cited by other, largely

35. Dag W. Aksnes & Gunnar Sivertsen, *A Criteria-Based Assessment of the Coverage of Scopus and Web of Science*, 4 J. DATA INFO. & SCI. 1, 13 (2019).

36. See, e.g., Christian Herzog et al., *Reproducibility or Producibility? Metrics and Their Masters*, 23RD INT'L CONF. ON SCI. & TECH. INDICATORS 685, 685 (2018) (“The relationship between power and producibility begs a number of questions: Who should be making the metrics? Is the academy comfortable with the current gatekeepers? Should there be a ‘separation of powers’ where data providers may not be the [sic] both the controllers of access to the data and, at the same time, the producers and controllers of indicators?”).

37. See, e.g., ANTHEA ROBERTS, IS INTERNATIONAL LAW INTERNATIONAL? 4 (2017) (“One’s access to the ‘international’ often depends on whether one can understand, speak, and read [English]”); Odile Ammann, *Language Bias in International Legal Scholarship: Symptoms, Explanations, Implications and Remedies*, 33 EUR. J. INT’L L. 821 (2022).

English-language sources. When the latter engage with the former, the interaction is documented. Thus, and as anticipated, the dearth of sources which are not in English should not so much be seen as a data problem, but rather as an epistemic trait of the scientific field as a whole.

ii. Designing the Query

For the same reasons outlined above, designing a good query for scientometric research on Web of Science or similar services is a crucial step towards obtaining meaningful results. Generally, a well-defined research question will go a long way towards the generation of accurate and useful data and minimize the noise. The standard approach in scientometric research has been to use comprehensive lists of keywords relevant to the topic, as well as the selection of specific journals whose focus on a particular scientific area is already established. However, neither of these approaches works particularly well with legal scholarship: on the one hand, landmark, paradigm-changing articles are routinely published on generalist law journals or law reviews,³⁸ with the implication that it is difficult to make a cull that only takes into account the publication outlet. Where the selection of the source material is instead made based on key words, the likelihood of the data being very noisy increases significantly. In other words, a query for “international law” will likely include a significant number of research outputs bearing little relation to the discipline. By the same token, it is possible for abstracts, titles, or categories fields not to contain expressions such as “international law.” Trial and error ultimately militated in favor of the adoption of the following query, which was run on all of the repositories discussed above:

“international law” OR “international investment law” OR
“international economic law” OR “international criminal law” OR
“international human rights law” OR “international humanitarian
law” OR “international environmental law” OR “international
courts” OR “world trade law” OR “international trade law” OR
“international adjudication” OR “international dispute settlement”
OR “international investment arbitration”

While this query is by no means perfect, it may be considered sufficient for our purposes because the bibliographic data includes, beyond the record exported, the references included therein. Moreover, while the data is overinclusive, computational scientometric analysis always requires

38. For two memorable examples, see Curtis A. Bradley & Jack L. Goldsmith, *Customary International Law as Federal Common Law: A Critique of the Modern Position*, 110 HARV. L. REV. 815 (1997); Eric A. Posner & John C. Yoo, *Reply to Helfer and Slaughter*, 93 CALIF. L. REV. 957 (2005).

“pruning” of the records to those that received a set number of relevant citations, thereby culling the records to a more manageable number.³⁹

This query returned 85,001 results on Dimensions, against the 23,371 results in Web of Science and 41,386 results in Scopus. For the purposes of this paper we relied on Scopus, which allowed for a more efficient parsing of the data, though future iterations may likely rely on Dimensions for coverage and replicability reasons.

B. *Analysis*

1. *Journals*

The first figure below shows the full citation network of the various publications examined in our research. By virtue of our query design, our dataset is both overinclusive and underinclusive: it comprises law journals as well as non-law journals and generalist law reviews as well as specialised periodicals. Contrary to the networks that will be presented in the remainder of this analysis, this is a straightforward citation analysis. It accounts for citations made by publications contained in a journal to other publications contained in another journal but not for citations to publications contained in the same journal.

It thus shows the interconnections between the periodicals: which are cited by which and how often. Because it excludes journal self-citations, in the sense of a journal citing itself or, more precisely, articles in a journal citing other articles in the same journal, the chart cannot be said to really reflect the relative importance of the different periodicals—an intense and important debate can, at least theoretically, take place mostly within the confines of a single journal. The chart rather shows the respective influence of the periodicals on discussions happening elsewhere.

This chart quite clearly shows that the network of journals has a rather well-defined core. These outlets are very well known, and they are important because they are cited comparatively often in articles published in other journals. Ideas would appear to propagate from the core outlets to the periphery. It would thus seem that the most frequent footprints of international law ideas trace back to these journals at the core: the *European Journal of International Law*, the *American Journal of International Law*, the *Harvard International Law Journal*, the *Leiden Journal of International Law*, the *International and Comparative Law Quarterly*, the *Cornell International Law Journal*, the *Journal of International Dispute Settlement*, and the *Journal of International Criminal Justice*.

Almost all the journals at the core, unsurprisingly, are generalist journals of international law: influential ideas appear to come from the general and go to the specialisms, not the other way around. This might in turn suggest,

39. For a review of the notion of pruning, see Russell Reed, *Pruning Algorithms—a Survey*, 4 IEEE TRANSACTIONS ON NEURAL NETWORKS 740 (1993).

although this is conjectural, that, for authors, the more one specializes, the less influential one becomes overall, on average.

Interestingly, the vast majority of periodicals at or near the core are journals of international law, as opposed to generalist law reviews or journals of other legal disciplines. This suggests that international law is a relatively self-contained, self-referential field. This may be so because the issues discussed most in international law are truly specific to international law and external inspiration is hard to find. Yet this may also be caused by selective attention (itself caused by perceptions of identity, habits, or other forces shaping the discourse), with international lawyers ignoring, with higher or lower levels of intentionality, ideas originating in other areas of law. This hypothesis should alert us to the potential risk of wheels being reinvented in international law: thoughts which have been formulated outside of international law, published in even more generalist journals than generalist journals of international law, might be rethought *de novo* within the field. This would in turn determine what is original or not in the field, thereby deciding what tends to get published and who tends to have a career. Our data does not allow us to make clear determination, but it alerts us to a hypothetical which in turn might influence our attention.

In the same vein, it is interesting to note that only one non-law journal gets a dot on the chart large enough to discern: *International Organization*, the leading journal of international relations.

In sum, international law as a field seems quite open within but quite closed to the outside: inside the field there is a core radiating rather largely; but the field itself is relatively disconnected from the rest of the law and from other disciplines.

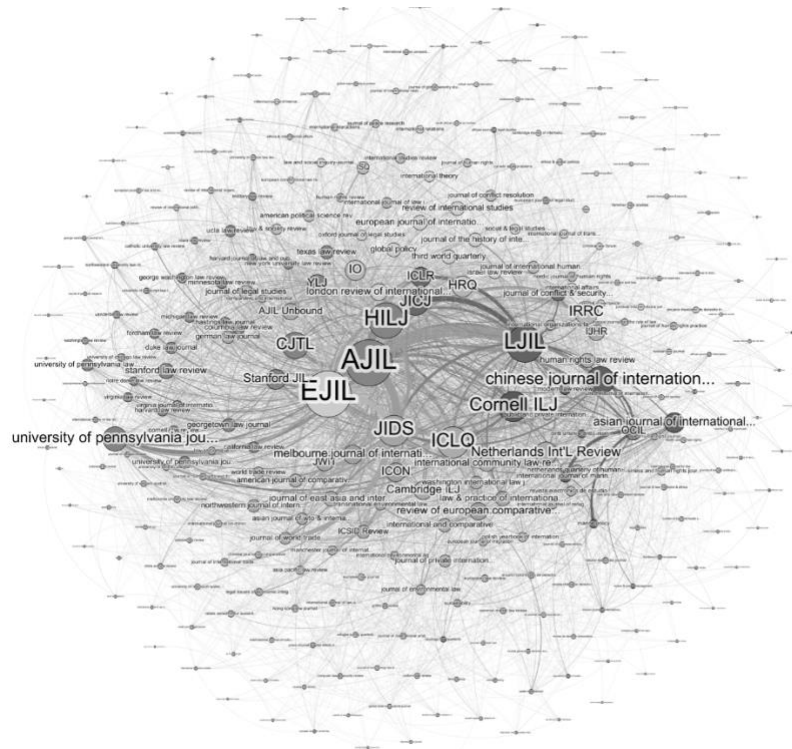


Figure 1: Citation network of periodicals.⁴⁰

2. *Authors*

For the second investigation, we target *authors*. To do so, we employ a traditional scientometric technique known as co-citation analysis. Co-citation analysis, an integral concept within scientometrics, pertains to the assessment of the frequency with which two documents are cited together by other works.

Originally conceived by Henry Small in the 1970s,⁴¹ this approach seeks to map and explore the intellectual structure of scientific fields by examining the relationships between documents that tend to be cited simultaneously. Unlike bibliographic coupling, where the relationship is determined by the

40. The chart shows interconnections between periodicals: which are cited by which and how often. It shows, at the center, EJIL and AJIL, cited the most often and by a large variety of other journals; then come HILJ and JIDS, cited somewhat less often yet still by a great variety of other journals; then LJIL, ICLQ, JICJ, Cornell ILJ, and CJTL, cited as much if not more than the previous group but, being less centered on the chart, by a smaller cluster of other journals.

41. Henry Small, *Co-Citation in the Scientific Literature: A New Measure of the Relationship Between Two Documents*, 24 J. AM. SOC'Y FOR INFO. SCI. 265, 265–66 (1973) (“If it can be assumed that frequently cited papers represent the key concepts, methods, or experiments in a field, then co-citation patterns can be used to map out in great detail the relationships between these key ideas. This may lead to a more objective way of modelling the intellectual structure of scientific specialties.”).

shared references of two papers, co-citation focuses on the pattern in which two publications are referenced together in subsequent literature. As such, a co-citation frequency can be seen as an indicator of the conceptual or semantic similarity or relatedness of the paired documents. The underlying premise is that if two papers are frequently co-cited, they may share thematic or methodological similarities and may address closely related research questions or concepts.

As time progresses and the academic field matures, patterns of co-citation may evolve, reflecting shifting paradigms, emergent trends, or the consolidation of certain theoretical or methodological approaches.

Thus, co-citation analysis serves not only as a tool to visualize and chart the intellectual landscape of a domain but also as a barometer to gauge its dynamism and transformation over time. Moreover, advanced computational tools and algorithms have been developed to represent these co-citation networks graphically, allowing for the identification of clusters or communities of related works, pivotal or seminal publications, and interconnections that might otherwise remain obscured.

Most of the interconnections among authors are unsurprising. The chart shows a group involving scholars like Marco Sassòli, Carsten Stahn, Marko Milanovic, William Schabas, Dabo Akande, and Frédéric Mégret; another group with individuals like Hilary Charlesworth, B.S. Chimni, and Tony Anghie; yet another with Anthea Roberts, Christoph Schreuer, Stephan Schill, Muthucumaraswamy Sornarajah, Jan Paulsson, Susan Franck, Gus Van Harten, and many others; a fourth with scholars such as Joost Pauwelyn, Ernst-Ulrich Petersman, Steve Charnovitz, Benedict Kingsbury, Joseph Weiler, John Jackson, and many others; a fifth with Anne-Marie Slaughter, Karen Alter, Larry Helfer, Beth Simmons, Kenneth Abbot, Oona Hathaway, and Robert Keohane; and a final group with Harold Koh, Louis Henkin, Curtis Bradley, and many more. Some of these clusters are, broadly speaking, thematic—for example, trade law scholars tend, unsurprisingly, to be cited together, and so do writers in the field of international investment law. Yet, some patterns appear to be linked either to the outlets in which some authors tend to publish, and, at the same time, to themes addressed in those same journals. This is also connected to geographical or national concerns: thus, it is hardly surprising that scholarship (and scholars) in international trade law should not appear so far removed from scholarship (and scholars) writing in U.S. law journals (international law-focused or mainline), and that the relevant cluster should be more connected to one comprising of scholars known for their work on foreign relations law than the international investment law cluster.⁴² And in the middle, connected to

42. Notice that men tend to be cited together, as do women.

3. *Topics and Turning Points*

A burst is commonly defined as “a large number of events occurring within a certain time window.”⁴⁴ The expression “citation burst” refers to a phenomenon in which a paper or an author experiences a sudden surge in the number of citations received within a short period. It is a commonly observed pattern in scientific literature, and its study has gained increasing attention in the field of scientometrics.

One approach to detecting citation bursts is the Kleinberg burst detection algorithm. This algorithm operates on the assumption that “the appearance of a topic in a document stream is signalled by a ‘burst of activity,’ with certain features rising sharply in frequency as the topic emerges.”⁴⁵ Although it is sobering to remember that Kleinberg conceived the algorithm chiefly to fix his own unwieldy email inbox,⁴⁶ his breakthrough has been applied to various fields of research to identify influential papers and authors.⁴⁷ Kleinberg’s algorithm operates by identifying a sequence of citations to a paper or author that occur in a short period and then calculating a burstiness score based on the frequency and proximity of the citations.⁴⁸

In scientometric research, bursts help to identify influential papers or authors and to understand the dynamics by which they eventually come to have a significant impact on a research field and, as a by-product, to identify emerging areas of research. Citation burst analysis can also be used to detect “citation cartels,” as papers that have a sudden surge in citations may be the result of manipulation or other unethical practices that editors of a journal may employ to surreptitiously increase the journal’s impact factor.⁴⁹

An analysis of the citation bursts in the context of international law scholarship reveals a narrative of the field’s evolution as various themes,

44. E.g., Xin Zhang & Dennis Shasha, *Better Burst Detection*, 22ND INT’L CONF. ON DATA ENG’G PROC. 146, 146 (2006).

45. Jon Kleinberg, *Bursty and Hierarchical Structure in Streams*, 7 DATA MINING & KNOWLEDGE DISCOVERY 373, 374 (2002).

46. *Id.* (“My initial aim in studying this issue was a very concrete one: I wanted a better organizing principle for the enormous archives of personal e-mail that I was accumulating.”).

47. See, e.g., Andrej Kastrin & Dimitar Hristovski, *Scientometric Analysis and Knowledge Mapping of Literature-Based Discovery (1986–2020)*, 126 SCIENTOMETRICS 1415, 1418 (2021).

48. See *id.*; see also, e.g., Petter Holme & Jari Saramäki, *Temporal Networks*, 519 PHYSICS REPS. 97 (2012); David Liben-Nowell & Jon Kleinberg, *Tracing Information Flow on a Global Scale Using Internet Chain-Letter Data*, 105 PROC. NAT’L ACAD. SCIS. 4633 (2008); Emma Tattershall, Goran Nenadic & Robert. D. Stevens, *Detecting Bursty Terms in Computer Science Research*, 122 SCIENTOMETRICS 681 (2020).

49. For example, this has occurred through the publication of “reviews” of the articles published in their own journal focusing on articles published in the previous two years (the relevant time-window for the generation of impact factor), or coercing authors to cite those articles. See Georg Franck, *Scientific Communication—A Vanity Fair?*, 286 SCI. 53 (1999); Iztok Fister, Jr., Iztok Fister & Matjaž Perc, *Toward the Discovery of Citation Cartels in Citation Networks*, 4 FRONTIERS PHYSICS (2016); Oren Perez et al., *The Network of Law Reviews: Citation Cartels, Scientific Communities, and Journal Rankings*, 82 MOD. L. REV. 240 (2019).

approaches, and theoretical foundations gain prominence during different time periods. The citation bursts demonstrate the intellectual shifts and progressions within the field, as well as the impact of these works in shaping the discourse and direction of international law scholarship. The analysis does not reveal what caused the bursts, though one can imagine that wider events or trends shaping discourses have a significant influence.

The following observations are noteworthy (see Appendix, Section C. Top 40 References with the Strongest Citation Bursts (Web of Science)):

In the mid to late 1990s, the focus shifted towards state sovereignty and the need for a more cooperative and multilateral approach to addressing global challenges. This period was marked by works such as Chayes and Chayes' *The New Sovereignty* (1995)⁵⁰ and Keck and Sikkink's *Activists Beyond Borders* (1998),⁵¹ reflecting an increased interest in the changing nature of states' roles and responsibilities in the global arena.

As we entered the early 2000s, international law scholarship began exploring the interplay between global governance and the growing influence of non-state actors, as well as the role of international institutions in shaping norms and practices. Works such as Slaughter's *A New World Order* (2004),⁵² Abbott and Snidal's *Hard and Soft Law in International Governance* (2000),⁵³ and Braithwaite and Drahos' *Global Business Regulation* (2000)⁵⁴ offered fresh perspectives on the dynamics of international governance and the interplay between various actors.

Similarly, during the same period, Rawls' *The Law of Peoples* (1999)⁵⁵ also experienced citation bursts, demonstrating the increasing relevance of the liberal tradition in international relations and the increasing interdisciplinarity of international law. During this period, international environmental law also gained traction, as evident from the citation bursts of Sands' *Principles of International Environmental Law* (2003)⁵⁶ and Bodansky's *The Legitimacy of International Governance* (1999).⁵⁷

In the mid-2000s, works like Dunoff and Trachtman's edited volume *Ruling the World* (2009) served as a focal point for a discussion of global governance and global constitutionalism in the context of international law,

50. ABRAM CHAYES & ANTONIA HANDLER CHAYES, *THE NEW SOVEREIGNTY: COMPLIANCE WITH INTERNATIONAL REGULATORY AGREEMENTS* (1995).

51. MARGARET E. KECK & KATHRYN SIKKINK, *ACTIVISTS BEYOND BORDERS: ADVOCACY NETWORKS IN INTERNATIONAL POLITICS* (1998).

52. ANNE-MARIE SLAUGHTER, *A NEW WORLD ORDER* (2004).

53. Kenneth W. Abbott & Duncan Snidal, *Hard and Soft Law in International Governance*, 54 INT'L. ORG. 421 (2000).

54. JOHN BRAITHWAITE & PETER DRAHOS, *GLOBAL BUSINESS REGULATION* (2000).

55. JOHN RAWLS, *THE LAW OF PEOPLES WITH "THE IDEA OF PUBLIC REASON REVISITED"* (1999).

56. PHILIPPE SANDS, *PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW* (2d ed. 2003).

57. Daniel Bodansky, *The Legitimacy of International Governance: A Coming Challenge for International Environmental Law?*, 93 AM. J. INT'L L. 596 (1999).

examining the growth of international organizations and networks as well as the influence of international legal norms on domestic legal systems.⁵⁸

In the mid-2010s, challenges to statehood and questions of self-determination also came back to the fore. This trend was marked by influential citation bursts of works such as Crawford's *The Creation of States in International Law* (2006).⁵⁹ The mid-to-late 2010s also show citation bursts of work such as Waibel's *The Backlash Against Investment Arbitration* (2010),⁶⁰ which shortly followed the rise of socially disruptive investment arbitrations,⁶¹ and Roberts' *Is International Law International?* (2017),⁶² which likely corresponds to a rising concern about the return of nationalism and the overall movement of deglobalization.⁶³

III. SCHOLARSHIP BEYOND SCHOLARSHIP

Citations are not only made by scholars—adjudicators cite scholarship too. The second part of our discussion is specifically concerned with such citations to scholarship as a proxy for relevance and importance of scholarship for international adjudicators.

This is a less straightforward matter than scholars citing scholars. On the one hand, if legal scholarship—more precisely, *la doctrine*⁶⁴—has a recognised and legitimized status in the practice of international law, it is in the domain of international adjudication. Article 38(1)(d) of the ICJ Statute includes a reference to the use of “teachings” as “subsidiary means” for the determination of rules of law, thereby effectively *regulating* the role of scholarship in the context of the exercise of jurisdiction (to be even more precise, *contentious* jurisdiction) by the ICJ.⁶⁵ The claim that Article 38(1) should have come to be understood, epiphenomenally and almost accidentally, as an authoritative list for the sources of international law *in general*, and not just in the context of adjudication, is a different question

58. RULING THE WORLD?: CONSTITUTIONALISM, INTERNATIONAL LAW, AND GLOBAL GOVERNANCE (Jeffrey L. Dunoff & Joel P. Trachtman eds., 2009).

59. JAMES R. CRAWFORD, *THE CREATION OF STATES IN INTERNATIONAL LAW* (2d ed. 2006).

60. MICHAEL WAIBEL ET AL., *THE BACKLASH AGAINST INVESTMENT ARBITRATION: PERCEPTIONS AND REALITY* (2010).

61. See, e.g., Thomas Schultz & Cédric Dupont, *Investment Arbitration: Promoting the Rule of Law or Over-Empowering Investors? A Quantitative Empirical Study*, 25 EUR. J. INT'L L. 1147 (2014) (analysing investor-state arbitration claims between 1972 and 2010 and determining changes in their function since the 1990s).

62. ROBERTS, *supra* note 37.

63. See generally Harold James, *Deglobalization: The Rise of Disembedded Unilateralism*, 10 ANN. REV. FIN. ECON. 219 (2018) (tracing elements of the political and economic history of deglobalization).

64. Alain Pellet, *Article 38*, in *THE STATUTE OF THE INTERNATIONAL COURT OF JUSTICE: A COMMENTARY* 731 (Andreas Zimmermann et al. eds., 2d ed. 2012).

65. See Niccolò Ridi, *Rule of Precedent and Rules on Precedent*, in *INTERNATIONAL PROCEDURE IN INTERSTATE LITIGATION AND ARBITRATION: A COMPARATIVE APPROACH* 354 (Eric De Brabandere ed., 2021).

altogether.⁶⁶ On the other hand, while the regulation of the use of scholarship in international adjudication stops short of a Justinian-style ban on commentaries⁶⁷ or of a generalized ban on citation such as the one adopted in the Italian Code of Civil Procedure,⁶⁸ there is no arguing that there is a dearth of citation to scholarship in international adjudication, at least as far as judgments and majorities go.

Most of the literature addressing the topic acknowledges that overt reliance on scholarly sources is, at best, scant. Thus, the ICJ and ITLOS very simply do not cite scholarship in their judgments;⁶⁹ the WTO Appellate Body cites—*rectius*: cited—little;⁷⁰ the European Court of Human Rights cites more, but unsystematically.⁷¹ Individual opinions can sometimes shed light on the relevance of a scholarly source in the deliberations,⁷² but it is also true that some judges are far more likely to reference literature than others, essentially making it impossible to discern meaningful patterns.⁷³

In this regard, international investment arbitration is somewhat different, which is why we focus on it. Advocates before international investment tribunals routinely submit scholarship to buttress their arguments. In turn, arbitrators tend to be comparatively generous in their overt references to scholarship.⁷⁴ Not only that, but investment law and arbitration also features a significant amount of role-splitting, with several

66. See, e.g., Thomas Skouteris, *The Force of a Doctrine: Art. 38 of the PCIJ Statute and the Sources of International Law*, in *EVENTS: THE FORCE OF INTERNATIONAL LAW* 69 (Fleur Johns, Richard Joyce & Sundhya Pahuja eds., 2010) (discussing the extension of Article 38 beyond the context of adjudication); Malgosia Fitzmaurice, *The History of Article 38 of the Statute of the International Court of Justice: The Journey from the Past to the Present*, in *THE OXFORD HANDBOOK OF THE SOURCES OF INTERNATIONAL LAW* 179 (Samantha Besson & Jean d'Aspremont eds., 2017) (analysing the historical evolution of Article 38 to its current status, along with other, 'classical' sources of international law).

67. See, e.g., Giuseppe Falcone, *The Prohibition of Commentaries to the Digest and the Antecessorial Literature*, 9 *SUBSECIVA GRONINGANA* 1, 2 (2014) (Neth.) (“With these rulings, taken together, Justinian categorically prohibits an activity designated as *commentarios applicare*, *commentarios adnectere*, ὑπομνήματα γράφειν; and justifies this prohibition with the concern that the occurrence of divergent interpretations would end up affecting the *compendium* carried out with the compiling collection.”); Tammo Wallinga, *The Reception of Justinian’s Prohibition of Commentaries*, 59 *REVUE INTERNATIONALE DES DROITS DE L’ANTIQUITÉ* [REV. INT’L. DROITS DR. L’ANTIQUITÉ] 375 (2012) (Belg.) (describing Justinian’s approach to prohibiting commentaries and differentiating it from those of modern law-makers).

68. See Fioravante Rinaldi, *Sono costituzionali le normative che vietano la citazione della dottrina nelle sentenze? Brevi riflessioni tra storia del diritto e diritto comparato con particolare riferimento al “processo” costituzionale*, 9 *FORUM DI QUADERNI COSTITUZIONALI—RASSEGNA* [F. QUADERNI CONST. RASSEGNA] 1 (2015) (It.), <https://www.forumcostituzionale.it/wordpress/wp-content/uploads/2015/10/rinaldi.pdf>.

69. Helmersen (2016), *supra* note 8, at 317; see also Sondre Torp Helmersen, *The Application of Teachings by the International Tribunal for the Law of the Sea*, 11 *J. INT’L DISP. SETTLEMENT* 20 (2020).

70. Helmersen (2016), *supra* note 8, at 323–26.

71. Kanstantsin Dzehtsiarou & Niccolò Ridi, *The Use of Scholarship by the European Court of Human Rights* (forthcoming).

72. Helmersen (2019), *supra* note 8, at 510, 526–27; HELMERSEN, *supra* note 8, at 159.

73. Helmersen (2019), *supra* note 8, at 541.

74. See, e.g., Ole Kristian Fauchald, *The Legal Reasoning of ICSID Tribunals—An Empirical Analysis*, 19 *EUR. J. INT’L L.* 301 (2008).

arbitrators and counsels on and before international investment tribunals also maintaining a scholarly production and being recognised as authorities in the field.

If references to scholarship in international adjudication are a comparatively rare occurrence, they may be worth investigating precisely because of their exceptional nature: when they do occur, it likely says something. Put differently, if scholarly work is capable of withstanding such a generally hostile environment, chances are that its survival—flourishing even, in investment arbitration—may tell us something about both the scholarly work and the legal processes in which it is employed.

To carry out our analysis, we again take advantage of citations as a metric capable of dependably measuring relevance outside of the Republic of Letters. And, again, we make no claim of completeness and exhaustiveness as to the capacity of citations to fully explain the use of scholarship. For starters, there is no telling what lies beneath the iceberg, that is to say, what proved influential but was not cited, for whatever reasons. Second, by only focusing on the presence of a citation, we employ a rather crude binary logic that cannot account for nuance in the use of a scholarly work. That said, we assume that the presence of a citation will, at the very least, provide evidence of the relevance and significance of a particular authority, irrespective of whether it needs to be leveraged or challenged.

We include here two case studies. First, leveraging a dataset including citations to scholarship in publicly available investment awards and decisions up to 2019, we consider the question of what scholarly authorities are cited in the context of investment arbitration. Second, we consider what scholarship is cited in proceedings before the International Tribunal for the Law of the Sea. However, rather than focusing on the entire jurisprudence of this judicial body, we elect to consider one ongoing case—the recent Request for an Advisory Opinion submitted by the Commission of Small Island States on Climate Change and International Law. For the purposes of this analysis, we focus on the citations to scholarship made by the various actors which made written submissions or statements of a different kind to the Tribunal.

A. Case Study 1: The Use of Scholarship in Investment Arbitration

As already mentioned, it is not uncommon for investment decisions to reference scholarly authorities. Our objective in this study is to use citations as a quantitative proxy for relevance and influence. Within this theme, we choose to focus on the age of the scholarship being cited. Crudely put, how much behind the research front is the practice of investment arbitration? Does it base its decisions on the latest developments, or does it take a few beats to respond to it? If there are footprints of international law ideas

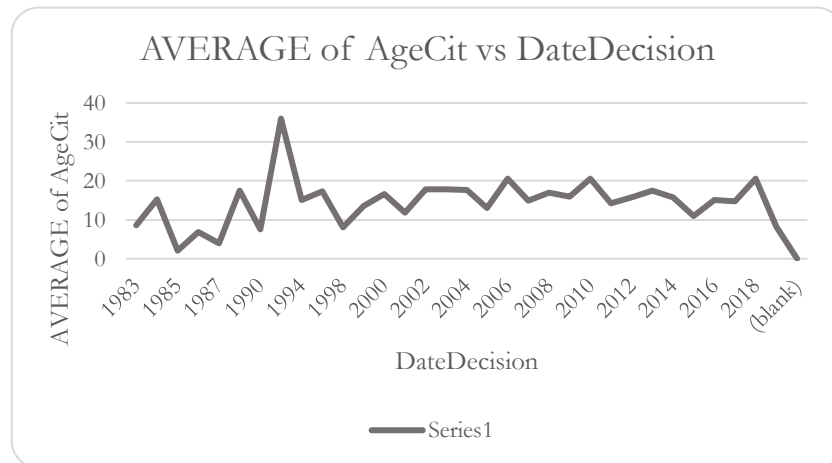
coming from scholarship in investment arbitral awards—and there are—how long is the path from the journals to the awards?

1. *Methodology*

Our analysis has concentrated on the complete text of publicly available investment decisions up to late 2019. To obtain the citations, we converted PDF documents into a machine-readable format and used regular expressions to search for results that matched most types of bibliographic referencing formats. We compared our findings with those provided by the Investor-State Law Guide Publication Citator, a commercial database, and found similar levels of precision. For the purposes of our analysis, we have only included publications on periodicals.

This limitation is not so much due to the difficulty of collecting citations, but rather on a few fundamental presumptions. First, we posit that articles provide the most reliable means for practitioners to keep up with the most recent developments, given their reliable publication cycle, peer review process, and editorial control. Second, monographs and edited volumes generally have a longer citation lifespan, making comparisons challenging.

2. *Findings*



The chart reveals an interesting fact: the average scholarship cited by investment arbitrators is around 15 years old. Ideas expressed in scholarship are taken up in investment arbitration practice roughly 15 years later—slightly more than half a generation. And the overall trend is towards a slight increase in that length.

Averages of course are averages: a few very old articles increase the average age of the cited scholarship.⁷⁵ However, as scholarship on investment arbitration keeps being produced at a high volume, this seems to have no effect on that average.

On the whole, it seems fair to argue that the ideational basis of investment arbitral awards is not exactly cutting-edge; and if traditionalist conservatism is marked by comparatively older ideas than progressivism, then it is tempting to affix that label to investment arbitration. Scientometrics, here, reveals this: the ideas of which generation tend to dominate in this global governance mechanism?⁷⁶ Those of half a generation ago.

B. *Author Clustering and Most Cited Authors*

In the exploration of intellectual influences within international arbitration, our second study borrows from the principles of co-citation analysis and applies the same methodology to arbitral awards as source material. The aim is to identify patterns in the citations of authors who appear together in the same award. By converting a bipartite network of awards and cited authors into a monopartite network that focuses solely on the authors, the strength of the relationships between these authors is captured based on how frequently they are cited together in the same award.

In mapping these co-citations, it becomes evident that a central hub emerges within the network, heavily dominated by key figures in the International Centre for Settlement of Investment Disputes (ICSID) system. These figures function as intellectual anchors, their work often cited in unison, which is indicative of the influence they hold in shaping the standards, interpretations, and practices that are commonly cited in arbitral decisions.

Just as enlightening are the thematic clusters that focus on various aspects of public international law, suggesting a specialized group of authors or scholars who are cited together due to their shared expertise in similar issues. These clusters hint at intricate tapestries of influence, as they reflect a collective agreement on which experts serve as authorities on certain aspects of international law. Moreover, the mapping exercise illuminates an interesting trend: several of the authors who are often cited together in these awards have had collaborations in other professional capacities. The strength and frequency of these co-citations may be indicative not merely of intellectual synergy but also of professional partnerships. This raises the

75. See, e.g., F.A. Mann, *British Treaties for the Promotion and Protection of Investments*, 52 BRIT. Y.B. INT'L L. 241 (1982).

76. See, e.g., Gus Van Harten & Martin Loughlin, *Investment Treaty Arbitration as a Species of Global Administrative Law*, 17 EUR. J. INT'L L. 121 (2006).

question of how intellectual alliances may also signal actual or potential professional collaboration.

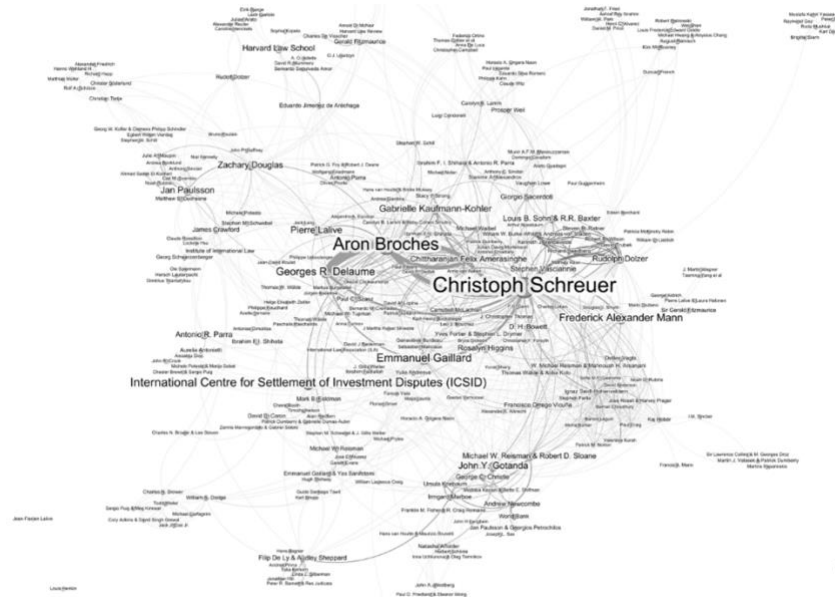


Figure 3: Co-citation network based on arbitral decisions.

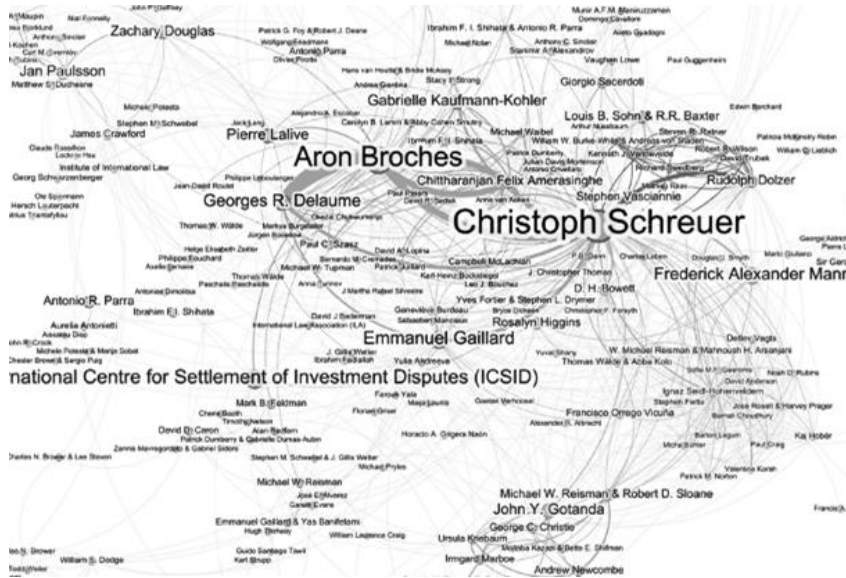


Figure 4: A zoom-in on Figure 3—the core of the co-citation network based on arbitral decisions.

Turning to the specific works and authors that garner frequent citations (see Appendix, Section A, Subsection 1. Most cited authors in investment arbitral awards (all time and 2012–2019) and Subsection 2. Most cited works in investment arbitral awards), the data indicates a reliance on seminal but older works. Classic publications such as Lalive's *The First World Bank Arbitration*,⁷⁷ Mann's *British Treaties for the Promotion and Protection of Foreign Investments*,⁷⁸ and Broches' Hague Lectures⁷⁹ are consistently cited.

This pattern suggests, as was already pointed out above, a form of intellectual conservatism in which foundational works continue to dominate the discourse. In contrast, recent scholarship is noticeably less prominent in the awards, raising questions about the responsiveness of the field to evolving perspectives and challenges.

Further, the prevalence of highly cited authors who also serve as practitioners or arbitrators offers additional dimensions for contemplation. It introduces the notion that the same individuals who dominate the intellectual landscape also wield significant influence in the practical application of international law through their roles as arbitrators or practitioners.

C. Case Study 2: *Written Submissions Before ITLOS*

Our second case study on the use of scholarship in international adjudication shifts its focus from the judges' chambers to the work of the parties to the proceedings and other relevant stakeholders that may enjoy a form of access before the judicial body concerned. Thus, rather than focusing on the use of scholarship by the judicial body itself—which is, at any rate, episodic and generally confined to the individual opinions of its judges—we look at the submissions made by the parties in the proceedings before the Tribunal, as well as the statements submitted by a variety of other intergovernmental and non-governmental organizations. With this operation, we aim to identify the type of scholarship that is generally cited before international adjudicators.

77. Pierre Lalive, *The First World Bank Arbitration (Holiday Inns v. Morocco)—Some Legal Problems*, 51 BRIT. Y.B. INT'L L. 123 (1980). Referred to in the authors' data as "Lalive, 'The First World Bank' Arbitration (Holiday Inns v. Morocco) - Some Legal Problems' 51 British Yearbook of International Law 123 (1980)."

78. Mann, *supra* note 75. Referred to in the authors' data as "Mann, 'British Treaties for the Promotion and Protection of Foreign Investment' 52 British Yearbook of International Law 241 (1982)."

79. Aron Broches, *The Convention on the Settlement of Investment Disputes between States and Nationals of Other States*, 136 RECUEIL DES COURS 331 (1972). Referred to in the authors' data as "Broches, 'The Convention on the Settlement of Investment Disputes between States and Nationals of Other States' 136:2 Recueil des cours 331 (1972)."

1. *The Case*

In order to carry out our analysis, we have elected to focus on a specific case, the proceedings for which are currently underway before ITLOS: the Request for an Advisory Opinion submitted by the Commission of Small Island States on Climate Change and International Law. The interest in these proceedings lies in the large number of submissions that were made to ITLOS by a very large variety of actors of different status, as well in the breadth of the question posed to the Tribunal, which inherently lends itself to the consideration of specific interdisciplinary perspectives.

The Commission of Small Island States on Climate Change and International Law—of recent vintage, having been established on October 31, 2021—sought the Tribunal’s guidance on two key legal questions related to the UN Convention on the Law of the Sea (UNCLOS).⁸⁰ The two questions concerned the specific obligations of State Parties under UNCLOS, particularly under Part XII, “to prevent, reduce and control pollution of the marine environment . . . result[ing] from climate change, including through ocean warming and sea-level rise, and ocean acidification,” as well as the obligations “to protect and preserve the marine environment in relation to climate change impacts, including ocean warming and sea-level rise, and ocean acidification[.]”⁸¹

These proceedings provide a particularly interesting case study for our inquiry. On the one hand, while the question was presented as pertaining narrowly to the interpretation and application of UNCLOS, the questions before the Tribunals have called for a rather interdisciplinary approach to traditional themes. On the other hand, the sheer multiplicity of actors involved in the proceedings invites the submission of a variety of perspectives on these issues, and, in turn, of a more variegated selection of scholarly works.

2. *Methodology*

To efficiently and accurately identify and extract the citations to scholarship in legal submissions, we converted them to the docx format and parsed them with a custom Python script leveraging OpenAI’s GPT-3 for natural language processing. The process extracts footnotes from each Word document, where citations are usually found. These footnotes are then stored in a DataFrame. To improve efficiency, the algorithm is programmed to exclude footnotes that are too short to contain meaningful citations. GPT-3.5 is then deployed to examine each footnote and identify citations to academic works. It is trained to recognize various citation

80. *See* Request for an Advisory Opinion, *supra* note 19, at 2.

81. *Id.*

formats, such as OSCOLA and Bluebook, and it extracts only citations relevant to academic articles, books, or journals, and formats them in a manner consistent with our analysis. The filtered and categorized citations are then exported to a second DataFrame for further analysis.

3. Findings

The data (see Appendix, Section C. ITLOS submissions) reveals several patterns that shed light on how scholarship is used in international adjudication. One of the most noticeable trends was the prevalence of citations made by International Organizations (IOs).⁸² Their submissions often relied heavily on scholarly works to back their arguments. This may be attributed to the fact that IOs, and NGOs in particular, may strive to enhance their credibility and the weight of their submissions by referencing widely-accepted scholarly material. Interestingly, developing countries were also found to cite scholarly works at a significant rate.⁸³ This could be interpreted as an attempt to fortify their legal positions in international forums where they might otherwise be outmatched or overshadowed by more powerful actors. By leaning on scholarship, these countries perhaps seek to offset asymmetries in power and resources.

In contrast, developed countries were generally more restrained in citing academic works.⁸⁴ One possible explanation for this could be that these countries often have the capacity to commission their own research, or have greater access to specialized legal expertise, or simply that they may not wish to cite academic works. Therefore, they may rely less on external academic resources when making their submissions. Despite this general trend, we found that jurisdictions rooted in common law seemed to cite scholarship somewhat more frequently than their civil law counterparts.⁸⁵

The type of scholarship cited also provided some interesting insights.⁸⁶ In general, citations were frequently made to commentaries or technical works that offer precise explanations or interpretations of legal texts or phenomena.⁸⁷ This suggests a preference for works that provide “safe” and “established” views, which can be readily used to reinforce legal arguments.

82. The authors' data reveals that “Our Children’s Trust & Oxfam” cited 116 unique titles, “COSIS” cited 87 unique titles, and “IUCN” cited 74 unique titles.

83. The authors found that Sierra Leone cited 43 unique titles and Rwanda and Mozambique each cited 40 unique titles.

84. The authors found that the U.K. cited 23 unique titles and Canada cited 21 unique titles.

85. For example, the authors found that the U.K., with a common law heritage, cited 23 unique titles as compared to France, a civil law country, which cited 7 unique titles.

86. The authors' data reveals that the most cited authors are Boyle, A. with 49 citations, Proelss with 23 citations, and Harrison with 21 citations.

87. *See* JAMES HARRISON, *SAVING THE OCEANS THROUGH LAW: THE INTERNATIONAL LEGAL FRAMEWORK FOR THE PROTECTION OF THE MARINE ENVIRONMENT* (2017) (cited 13 times); UNITED NATIONS CONVENTION ON THE LAW OF THE SEA: A COMMENTARY (Alexander Proelss ed., 1st ed. 2017) (cited 11 times).

It is therefore unsurprising, if particularly noticeable, that there should be a dearth of citations to critical or more theoretical works. This could suggest that all parties concerned suffer from a form of conservative inertia in international adjudication processes—a hesitancy to engage with scholarship that questions the status quo or offers transformative interpretations of international law. The absence of such works may imply that both the parties and the Tribunal prefer to work within established paradigms, rather than challenging them or exploring alternative frameworks.

Overall, the patterns we observed speak volumes about how different actors view and utilize scholarship in the context of international adjudication.⁸⁸ While IOs and developing countries may use these resources as a tool to strengthen their positions, developed countries and the Tribunal appear more cautious in embracing the full range of scholarly discourse available. This paints a complex picture of the role of scholarship in international legal proceedings and raises important questions about the potential impact of certain types of scholarship on the development of international law through adjudicative and political processes.

IV. CONCLUSION

Where do international law ideas come from? What kind of scholarship influences international lawyers? If we trace back the footprints, which take the form of citations, where do they lead us? What matters to whom?

To international lawyers as authors of scholarship, what seems to matter most is what gets published in a relatively select core of generalist international law journals, with limited influence of specialized international law journals (except for two), non-international reviews, and non-law outlets. The authors who seem to matter most to them are a small group of generalist international law authors, one half of them doctrinal in their approach, the other half theoretically-minded. Beyond them, a classical formalist (Hans Kelsen) and a postmodern post-structuralist (Michel Foucault). Fertile tensions, to be sure.

⁸⁸ In the authors' data, developed countries and IOs cited 314 and 495 unique titles, respectively, while developing countries cited 204. This data was obtained through a Python-based script that automates the extraction and analysis of footnotes from International Tribunal for the Law of the Sea (ITLOS) pleadings, leveraging OpenAI's GPT-3.5 for AI-assisted analysis. The script accesses ITLOS pleadings stored as .docx files on Google Drive, employing a function to navigate and list these documents. A key feature is its ability to delve into the XML structure of these files to extract footnotes, subsequently stored in a DataFrame for efficient data manipulation. The tool filters footnotes, discarding those under 25 characters to prioritize substantial content. Crucially, it utilizes GPT-3.5 to identify and format academic citations within these footnotes. This automation streamlines the laborious process of citation recognition, allows the export of the resulting data as Excel files, and provides a record of both the extracted citations and all processed footnotes.

To international lawyers as practitioners of the law, with a focus on investment law, what seems to matter most is 15-year-old scholarship, with an overall predilection for key figures of the ICSID system and a smack of intellectual conservatism. Among international lawyers as practitioners of the law, with a focus on ITLOS, counsel and tribunal members alike, a form of conservative inertia seems to reign. Citations skew towards safe views within established paradigms, rather than those which question the status quo or offer transformative interpretations of international law. To international lawyers as the voices of IOs and NGOs, scholarly works seem to be particularly important, perhaps to enhance their credibility. To international lawyers as government lawyers, it appears that developing countries are more prompt to buttress their arguments with scholarship than developed countries, perhaps in an attempt to offset power asymmetries.

These findings are based on citations. Citations are only a proxy for influence. If the act of citing is a decision, then, like any decision human beings make on anything, it is influenced by a variety of factors, many of which unconscious. Identifying a citation tells us that a given person at a given time made the decision that it was appropriate to make that citation. What really influenced the person to do just that, we may never know. It may be fashionable to cite someone or something; it may be the result of a mimetic desire; of close-at-hand practicalities; of the promotion of one's group or even oneself; of anger directed at someone or something (or diffuse anger happening to fall on the someone or something); of editorial expectations or requirements, etc. Yet, imperfect knowledge based on citations is currently one of the best ways to empirically chart the territory of what scholarship matters, to whom, and how.

APPENDIX

The tables below contain the authors' own generated data, compiled according to the methodology described throughout this Essay.

A. *Investment Arbitration*

1. *Most Cited Authors in Investment Arbitral Awards (All Time and 2012–2019)*

Author	COUNTU NIQUE of Source	COU NTA of Source	Author	COUNTU NIQUE of Source	COU NTA of Source
Christoph Schreuer	54	58	Christoph Schreuer	17	18
Aron Broches	42	48	Aron Broches	15	16
Emmanuel Gaillard	22	22	Zachary Douglas	7	7
Georges R. Delaume	20	25	John Y. Gotanda	7	7
Frederick Alexander Mann	20	20	Rudolf Dolzer	6	6
Rudolf Dolzer	16	16	Filip De Ly and Audley Sheppard	5	8
Pierre Lalive	16	16	James Crawford	4	4
John Y. Gotanda	16	16	Francisco Orrego Vicuña	4	4
Gabrielle Kaufmann-Kohler	16	17	Emmanuel Gaillard	4	4
Jan Paulsson	15	16	Stephen M. Schwebel	3	3
Zachary Douglas	14	14	Natasha Affolder	3	3

2. *Most Cited Works in Investment Arbitral Awards*

Work	COUNTUNIQUE of Source
<i>Broches, "The Convention on the Settlement of Investment Disputes between States and Nationals of Other States" 136:2 Recueil des cours 331 (1972).</i>	27
<i>Schreuer, "Fair and Equitable Treatment in Arbitral Practice" 6:3 Journal of World Investment and Trade 357 (2005).</i>	25
<i>International Centre for Settlement of Investment Disputes (ICSID), "Background Paper on Annulment for the</i>	21

<i>Administrative Council of ICSID</i> ” 27:2 <i>ICSID Review</i> 443 (2012).	
Mann, “ <i>British Treaties for the Promotion and Protection of Foreign Investment</i> ” 52 <i>British Yearbook of International Law</i> 241 (1982).	16
Kaufmann-Kobler, “ <i>Arbitral Precedent: Dream, Necessity or Excuse?: The 2006 Freshfields Lecture</i> ” 23:3 <i>Arbitration International</i> 357 (2007).	14
Lalive, “ <i>The First “World Bank” Arbitration (Holiday Inns v. Morocco) - Some Legal Problems</i> ” 51 <i>British Yearbook of International Law</i> 123 (1980).	12
“ <i>Draft Convention on the Responsibility of States for Damage done in their Territory to the Person or Property of Foreigners</i> ” 23 <i>American Journal of International Law</i> , 131 (1929).	12
Sohn and Baxter, “ <i>Responsibility of States for Injuries to the Economic Interest of Aliens</i> ” 55 <i>American Journal of International Law</i> 545 (1961).	11
Schreuer, “ <i>Commentary on the ICSID Convention</i> ” 11 <i>ICSID Review - Foreign Investment Law Journal</i> 318 (1996).	11
Vasciannie, “ <i>The Fair and Equitable Treatment Standard in International Investment Law and Practice</i> ” 70 <i>British Yearbook of International Law</i> 1999 99 (2000).	10

B. ITLOS Submissions

1. Citations by Actor

Actor	COUNT	UNIQUE of Title	Entity Type
WS-4-8-Our_Children_s_Trust___Oxfam	116		International Org / NGO
WS-2-4-COSIS	87		International Org / NGO
WS-2-2-IUCN	74		International Org / NGO
WS-4-10-OOH	66		International Org / NGO
WS-2-7-African_Union	65		International Org
WS-1-29-Sierra_Leone	43		State
WS-3-1- da	40		State
WS-1-10-Mozambique_01	40		State
WS-4-3-ClientEarth	36		International Org / NGO
WS-4-5-CIEL___GPI	33		International Org / NGO

<i>WS-4-4-Opportunity_Green</i>	27	International Org / NGO
<i>WS-4-6-ACOPS</i>	25	International Org / NGO
<i>WS-4-7-WWF</i>	23	International Org / NGO
<i>WS-1-27-UK</i>	23	State
<i>WS-1-25-Canada-rev_01</i>	21	State
<i>WS-1-1-RD_Congo_translation_ITLOS</i>	19	State
<i>WS-4-1_Amicus_Brief_UN_Special_Rapporteurs</i>	16	International Org / NGO
<i>WS-1-3-New_Zealand</i>	16	State
<i>WS-1-30-FS_Micronesia_01</i>	15	State
<i>WS-1-9-EU</i>	14	International Org
<i>WS-1-21-Bangladesh</i>	13	State
<i>WS-1-11-Australia</i>	13	State
<i>WS-3-2-FAO</i>	12	International Org
<i>WS-1-22-Nauru</i>	12	State
<i>WS-2-6-UNEP</i>	10	International Org
<i>WS-1-6-Germany</i>	10	State
<i>WS-2-8-ISA</i>	9	International Org
<i>WS-1-20-Chile_01</i>	8	State
<i>WS-2-5-SPC</i>	7	International Org
<i>WS-1-19-France_translation_ITLOS</i>	7	State
<i>WS-1-28-NL</i>	6	State
<i>WS-1-24-Portugal_01</i>	6	State
<i>WS-1-15-Singapore</i>	6	State
<i>WS-4-2-High_Seas_Alliance</i>	5	International Org / NGO
<i>WS-1-31-Djibouti_translation_ITLOS</i>	3	State
<i>WS-4-9-Observatory_for_Marine_and_Coastal_Governance</i>	2	International Org / NGO
<i>WS-1-23-Belize</i>	2	State
<i>WS-1-17-Egypt</i>	2	State
<i>WS-1-13-Indonesia</i>	2	State
<i>WS-1-5-Norway_01</i>	1	State
<i>WS-1-26-Guatemala_01</i>	1	State
<i>WS-1-16-ROK</i>	1	State
<i>WS-1-12-Mauritius</i>	1	State

2. Most Cited Scholars

<i>Author</i>	<i>Unique submissions</i>	<i>Citations</i>
<i>Boyle, A.</i>	20	49
<i>A. Proelss</i>	10	23
<i>Harrison, J.</i>	9	21
<i>Oral, N.</i>	8	10

<i>Tanaka, Y.</i>	6	11
<i>Nguyen, L. N.</i>	6	9
<i>Masson-Delmotte, V. et al.</i>	6	8
<i>Nordquist, Nandan, & Rosenne</i>	5	9
<i>Stephens, T.</i>	4	4
<i>Cheng, L. et al.</i>	4	4
<i>Sands, P.</i>	3	4
<i>Rajamani, L.</i>	3	3
<i>Portner, H.-O. et al.</i>	3	4
<i>Klerk, B.E.</i>	3	4
<i>Schali, J.</i>	2	3
<i>Sands, P. & Cook, K.</i>	2	2
<i>Papanicolopulu, I.</i>	2	2
<i>P. Sands and J. Peel</i>	2	2
<i>Munday, P. L. et al.</i>	2	3
<i>Molenaar, E.J.</i>	2	2
<i>McCreath, M.</i>	2	2
<i>Laffoley, D. and Baxter, J.M.</i>	2	3
<i>Knox (2017)</i>	2	2
<i>Barrett, J. & Barnes, R.</i>	2	2

3. Most Cited Works




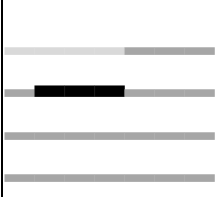



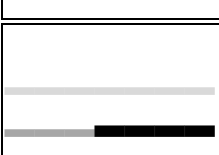
<i>Title</i>	<i>Submissions</i>	<i>Citations</i>
<i>Saving the Oceans through Law: The International Legal Framework for the Protection of the Marine Environment</i>	13	13
<i>United Nations Convention on the Law of the Sea: A Commentary</i>	11	11
<i>VIRGINIA COMMENTARY</i>	10	10
<i>Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change</i>	10	10
<i>Protecting the Marine Environment from Climate Change: The LOSC Part XII Regime</i>	9	9
<i>Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change</i>	8	8
<i>Litigating Climate Change under Part XII of the LOSC</i>	7	7

<i>Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty</i>	7	7
<i>Africa, Impacts, Adaptation and Vulnerability</i>	7	7
<i>A governing framework for international ocean acidification policy</i>	7	7
<i>Special Report on the Ocean and Cryosphere in a Changing Climate</i>	6	6
<i>Oceans and Coastal Ecosystems and Their Services</i>	5	5
<i>Law of the Sea: UNCLOS as a Living Treaty</i>	5	5
<i>Expanding the Environmental Regulatory Scope of UNCLOS Through the Rule of Reference: Potentials and Limits</i>	5	5
<i>The International Law of the Sea</i>	4	4
<i>Protecting the Marine Environment from the Impacts of Climate Change: A Regime Interaction Study</i>	4	4
<i>Principles of International Environmental Law</i>	4	4
<i>International Law and the Environment</i>	4	4
<i>Due Diligence in the International Legal Order: Dissecting the Leitmotif of Current Accountability Debates</i>	4	4
<i>Climate Change 2021: The Physical Science Basis</i>	4	4
<i>An Updated Synthesis of the Impacts of Ocean Acidification on Marine Biodiversity</i>	4	4
<i>The Ocean, Impacts, Adaptation, and Vulnerability</i>	3	3
<i>The Ocean and Cryosphere in a Changing Climate: Special Report of the Intergovernmental Panel on Climate Change</i>	3	3
<i>Special Report on Climate Change and Land</i>	3	3
<i>Sea Level Rise and Implications for Low-Lying Islands, Coasts and Communities</i>	3	3
<i>Saving the Oceans Through Law</i>	3	3
<i>Protecting the Marine Environment from Climate Change</i>	3	3
<i>Procedure and Substance in International Environmental Law</i>	3	3
<i>Part XII of the United Nations Convention on the Law of the Sea and the Duty to Mitigate Against Climate Change: Making Out a Claim, Causation, and Related Issues</i>	3	3

C. Top 40 References with the Strongest Citation Bursts (Web of Science)

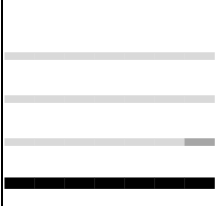
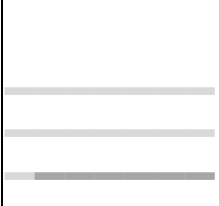
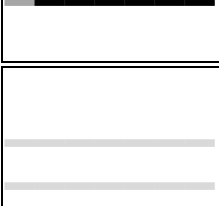
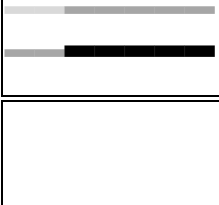
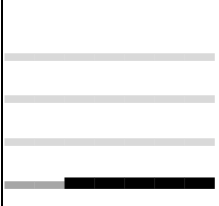
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Bradley CA, 1997, HARVARD LAW REV, V110, P815, DOI 10.2307/134223 0, DOI	1997	37.41	1998	2011	
Koh HH, 1998, HARVARD LAW REV, V111, P1824, DOI 10.2307/134248 4, DOI	1998	29.58	1998	2011	
Chayes Antonia Handler, 1995, NEW SOVEREIGN TY COMP, V0, P0	1995	14.12	1998	2013	
HENKIN L, 1984, MICH LAW REV, V82, P1555, DOI 10.2307/128849 5, DOI	1984	13.63	1998	2006	
KOH HH, 1997, YALE LAW J, V106, P2599, DOI 10.2307/797228 , DOI	1997	18.95	1999	2009	
Neuman GL, 1997, FORDHAM	1997	15.87	1999	2011	

LAW REV, V66, P371					
Franck Thomas M., 1990, POWER LEGITIMACY NAT, V0, P0	1990	15.22	1999	2015	
SLAUGHTER AM, 1995, EUR J INT LAW, V6, P503	1995	15.01	1999	2009	
Koh H., 1998, HOUSTON L REV, V35, P623	1998	14.98	1999	2012	
Goldsmith JL, 1999, U CHICAGO LAW REV, V66, P1113, DOI 10.2307/160036 4, DOI	1999	13.71	2002	2009	
Guzman AT, 2002, CALIF LAW REV, V90, P1823, DOI 10.2307/348143 6, DOI	2002	14.64	2004	2012	
Koh HH, 2003, STANFORD LAW REV, V55, P1479	2003	14.37	2004	2010	
Martinez JS, 2003, STANFORD	2003	12.5	2004	2012	

LAW REV, V56, P429					
Koh HH, 2004, AM J INT LAW, V98, P43, DOI 10.2307/313925 5, DOI	2004	17.62	2005	2010	
[Anonymous], 2004, NEW WORLD ORDER, V0, P0	2004	17.81	2006	2013	
Hathaway OA, 2002, YALE LAW J, V111, P1935, DOI 10.2307/797642 , DOI	2002	12.14	2006	2008	
Goodman R, 2004, DUKE LAW J, V54, P621	2004	18.55	2007	2016	
Bradley CA, 2007, HARVARD LAW REV, V120, P869	2007	14.59	2007	2012	
Simmons BA, 2000, AM POLIT SCI REV, V94, P819, DOI 10.2307/258621 0, DOI	2000	14.11	2007	2013	
Goldsmith J. L., 2005, LIMITS INT LAW, V0, P0	2005	19.77	2008	2011	

Fischer-Lescano A., 2004, MICH J INT LAW, V25, P999	2004	13.11	2009	2014	
Dunoff JL, 2009, RULING THE WORLD: CONSTITUTIONALISM, V0, P0	2009	13.09	2010	2016	
Kingsbury B., 2005, NEW YORK U J LAW CON, V68, P15, DOI 10.1093/EJIL/CHM054, DOI	2005	12.74	2010	2018	
Koskenniemi 2002, LEIDEN J INT LAW, V0, P0, DOI 10.1017/S0922156502000262, DOI	2002	12.75	2012	2017	
Schmitt Michael N., 2013, TALLINN MANUAL INT L, V0, P0	2013	13.7	2016	2019	
Sikkink Kathryn, 2011, JUSTICE CASCADE HUMA, V0, P0	2011	13.26	2016	2020	
Koskenniemi Martti, 2001, RISE FALL	2001	12.2	2016	2021	

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Pahuja Sundhya, 2011, DECOLONISI NG INT LAW, V0, P0	2011	14.14	2017	2023	
ANTHEA ROBERTS, 2017, COMP INT LAW, V0, P0	2017	18.06	2018	2021	
Alter KJ, 2016, EUR J INT LAW, V27, P293, DOI 10.1093/ejil/ch w019, DOI	2016	14.15	2018	2023	
Madsen MR, 2018, INT J LAW CONTEXT, V14, P197, DOI 10.1017/S17445 52318000034, DOI	2018	14.21	2019	2023	
Chimni BS, 2018, AM J INT LAW, V112, P1, DOI 10.1017/ajil.201 8.12, DOI	2018	12.82	2019	2023	
Pitts Jennifer, 2018, BOUNDARIE	2018	12.82	2019	2023	

S INT LAW E, V0, P0					
Puig S, 2018, AM J INT LAW, V112, P361, DOI 10.1017/ajil.201 8.70, DOI	2018	12.14	2019	2023	
Crawford J, 2013, CMB STUD INT COMP, V100, P1, DOI 10.1017/CBO9 781139033060, DOI	2013	14.03	2020	2023	
Grover L, 2014, INTERPRETI NG C TIONAL CRIMINAL COURT, V0, PP1, DOI	2014	18.13	2021	2023	
Getachew A, 2019, WORLDMAKI NG AFTER EMPIRE: THE RISE AND FALL OF SELF- DETERMINA TION, V0, P1	2019	13.99	2021	2023	
Ginsburg T, 2020, AM J INT LAW, V114, P221, DOI	2020	12.95	2021	2023	

10.1017/ajil.202 0.3, DOI					
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