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A Shared Global Conversation?: Further Notes on the Domain of Interdisciplinary Studies

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Abstract

The field of interdisciplinary studies is notoriously diverse: scholars from many countries publish in a multitude of journals and attend many different conferences. Interdisciplinary studies, precisely because of its inter- and transdisciplinarity, presents an interesting set of problems for domain analysis. Szostak and Smiraglia (2025) used domain analysis to study the contents of two anthologies, revealing social affiliations within the domain, but yet there were also connections across these conversations, indicative of a shared global conversation. An interesting question is whether the same global conversation with affiliated divergence is visible from a different perspective. Using the merged lists of most-cited authors from the earlier study, we conducted author co-citation analysis in both Web of Science and Scopus. In general, our results are comparable ontically; we see that the same ontical poles are closely associated with social interactions—AIS, TD-Net, Team Science, Creativity, etc. Results also provide support for the tentative conclusions that, first, there are recognizable "invisible colleges" associated both with different organizations (AIS, td-net, Team Science) and topics (creativity, team science, transdisciplinarity), and, second and most importantly, that there is sufficient evidence of connection among these to speak of a global conversation.

1.0 Background

The literature in interdisciplinary studies is notoriously diverse. There are only one or two journals in the world that take interdisciplinarity as their main focus. The scholarship of interdisciplinarity is thus dispersed across a wide array of journals and edited collections. Though there is now a Global Alliance for Interdisciplinarity and Transdisciplinarity (founded in 2021, with conferences every three years and a series of working groups), the field still is characterized by a handful of different organizations: The Association for Interdisciplinary Studies, founded in 1979, which has held all but two of its annual conferences in North America (but has many European members); TD-Net, founded in 2000, a network of transdisciplinary scholars [transdisciplinarity involves interdisciplinarity plus the

involvement of non-academic partners in research teams] sponsored by the Swiss Academies, that holds conferences in Europe (but has many attendees from other continents); the Science of Team Science, sponsored by the United States National Institutes of Health over the years and holding annual conferences in North America (the first use of the term was 2006, first conference in 2010); and Integration and Implementation Sciences, based in Australia and hosting a very busy website with (among other things) frequent blog posts [blog posts since 2015, but the organization had existed for some years prior].

In knowledge organization (KO), domain analysis is a suite of methodological tools used for the purpose of extracting the ontology of a given domain. Often the ontology, once extracted, can be used to generate knowledge organization systems (KOSs) such as taxonomies, ontologies, classifications, etc. In scholarly domains, informetric tools such as citation analysis, author co-citation analysis and co-word analysis are used not only to discover the domain's ontology, but also to track its evolution across time. These techniques for domain analysis are well-known and have been described in Smiraglia (2015).

Interdisciplinary studies, precisely because of its inter- and trans-disciplinarity, presents an interesting set of problems for domain analysis. We were interested to discover whether we could observe distinct theoretical poles within the domain. Citation analysis would help us identify critical publication venues as ontological sources as well as the research front of most influential scholars.

Szostak and Smiraglia (2025) used domain analysis to study the contents of two recent volumes: The Elgar Encyclopedia of Interdisciplinarity and Transdisciplinarity (Darbellay 2024), and the Handbook of Interdisciplinary Teaching and Administration (Szostak 2024). The analysis revealed clear co-citation patterns that appeared to be connected to the different organizations, and yet there were also connections across these conversations, indicative of a shared global conversation (that is, topics are shared by discourse communities around the world). One limitation of Szostak and Smiraglia (2025) was that the results might reflect the editorial decisions of the editors of these two volumes, which raised the question of whether the observed shared global conversation might also be visible from a different domain perspective. In this paper, we thus used the research front generated in that analysis to replicate the author co-citation analysis in the global databases of both Clarivate Web of Science (WoS) and Elsevier Scopus.

2.0 Methodology

Author co-citation analysis is an informetric domain analytical tool used to permit visualization of a domain from the perspective of its practitioners. By tracking co-citation of authors, it is possible to create a view of perceived relationships among ontical poles (shared knowledge constructs, theoretical paradigms, etc.) in a domain by mapping clusters of authors whose work represents perceived similarity. The resulting clusters demonstrate the strength of persistent ideas within a domain.

Szostak and Smiraglia (2025) relied on the recent publication of two edited volumes to demonstrate parameters of the field of interdisciplinary studies through documentation of the field's citation identity—the overall image of the domain reflected by the set of most-cited authors and informetric contexts—as well as its citation image—the network analysis of co-citation within the domain, in this case the two edited volumes. We discovered a "guardedly positive" (17) global conversation across the domain, but we also observed significant divergence by affiliation with distinct poles visible around the largely North American Association for Interdisciplinary Studies (AIS) and the Swiss-based transdisciplinary TDNet. Also, we observed some signs of potential concretization within the domain (Collins 1998), which, if confirmed, would suggest a tight rein on the number of theoretical poles in ascendance at any one time.

An interesting question for further research, then, is whether the same global conversation with affiliated divergence is visible from a different perspective. sing the merged lists of most-cited authors from the earlier study, we conducted by locating instances of co-citation in both WoS and Scopus. Network matrices of co-citation were created and then loaded into VOSviewer 1.6.18 for Mac to create the visual representations demonstrated below.

3.0 Results

There was much less co-citation in both databases than we observed earlier in the two anthologies Handbook and Encyclopedia. Author co-citation represents the community's perception of ontical relationships in a domain as it is represented in the source literature. In both sources we observed interlinked but distinct networks around creativity, transdisciplinarity, team science and the two affiliated clusters for AIS and TDNet, representing potential "invisible colleges" (Crane 1972; Zuccala 2006; Garcia et al. 2025).

3.1 Web of Science



Figure 1. Author co-citation in Web of Science

There are three distinct networks in the foreground. Szostak-Repko-Newell is prominent and is distinct from the rest of the domain. Pohl anchors a network including Klein-Vienni-Baptista-Hoffmann-O'Rourke, which is connected to but at some distance from Stokols-Daniel. Plucker-Runco are connected but are apart and farther in the background from the rest.

We can put these relationships in context thus. Repko, Szostak, Newell, and Carmichael were long associated with AIS, though Newell attended multiple Science of Team Science conferences and Szostak multiple TDNet conferences. Julie Thompson Klein was active in all three organizations over the years and served as an important bridge among them. Pohl, Hoffmann, and Vienni-Baptista are all based in Switzerland and are associated with TDNet, but most have some connection to AIS. Stokols and Hall are most closely associated with the Science of Team Science. O'Rourke has strong connections to both Science of Team Science and AIS. Runco and Plucker are primarily scholars of creativity.

Most of the co-citation in WoS occurred in publications from approximately a decade ago, with the highest frequency occurring in 2012 (Figure 2).

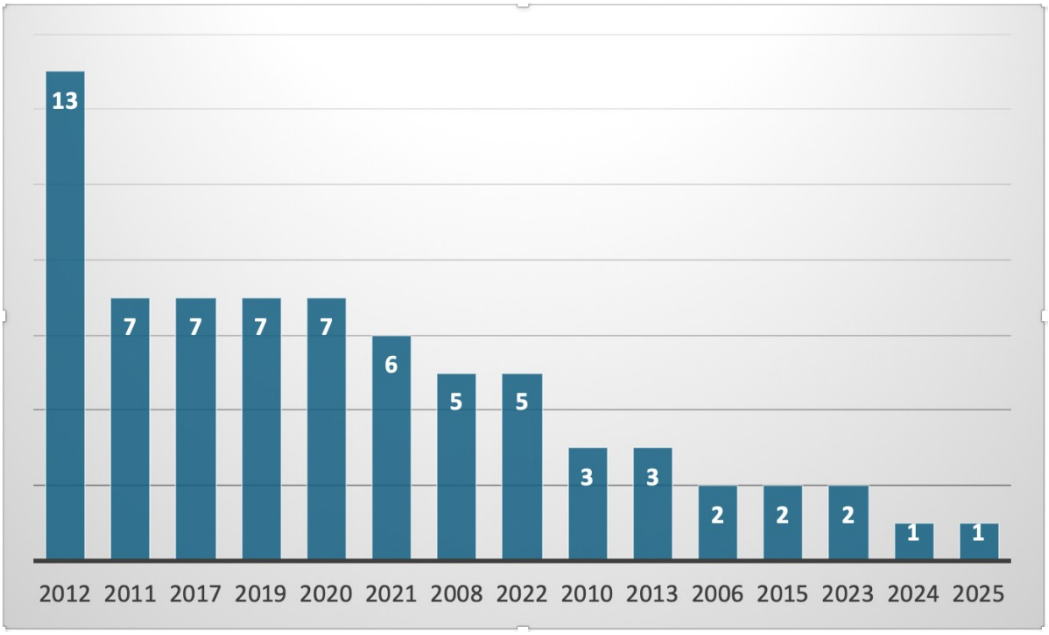

Figure 2. Date of co-citation in Web of Science.

Co-citation occurred in twenty-eight source publications; the majority from Case Studies in Interdisciplinary Research (the top tier of the distribution appears in Table 1).

Table 1 Co-citation sources in Web of Science.

Repko et al. (2012). Case Studies in Interdisciplinary Research	13
American Journal of Preventive Medicine	9
Environmental Science and Policy	6
Repko and Szostak (2020). Interdisciplinary Research: Process and Theory	6
Humanities and Social Sciences Communications (formerly Palgrave Communications)	6
Repko et al. (2017; 2020). Introduction to Interdisciplinary Studies	3
Issues in Interdisciplinary Studies	3
Research Evaluation	3

The sources are roughly evenly split between journals and monographs. The Repko et al. (2012) Case Studies (an edited anthology) would seem to account for the high frequency of co-citation in 2012. The mix of sources is again indicative of an epistemologically social-scientific discipline.

3.2 SCOPUS

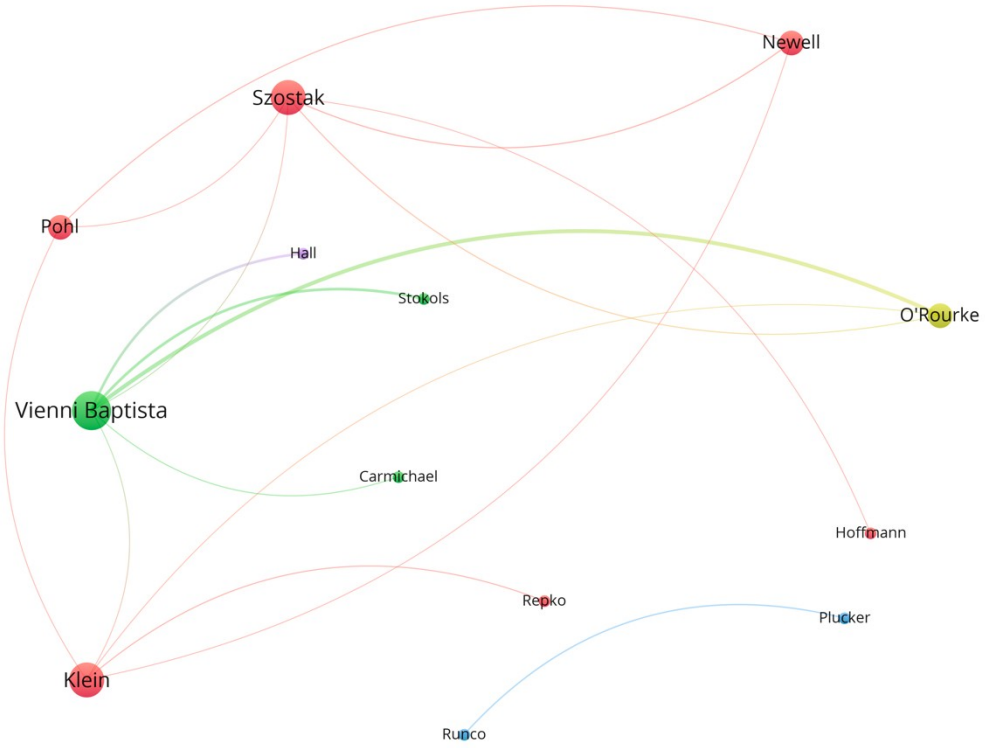

Figure 3. Author co-citation in Scopus.

The image in Scopus is quite different from that in Web of Science. Almost the entire domain is connected in one network. The most prominent network is anchored by Vienni Baptista-O'Rourke, which links through Klein to a denser network anchored by Szostak-Newell-Pohl. Runco-Plucker are again distinct and distant from the rest. Though some of the connections are puzzling (Pohl and Hoffmann have often co-authored, and would seem to have more in common with each other than Szostak, for example), the diagram as a whole provides strong evidence of a coherent global conversation.

Carmichael, who is associated with integrative learning and who appeared at some distance in the earlier study, appears but is distant and barely connected in both WoS and Scopus.

The Scopus co-citation analysis is more recent than that from WoS, with a date range predominantly in the current five years (Figure 4).

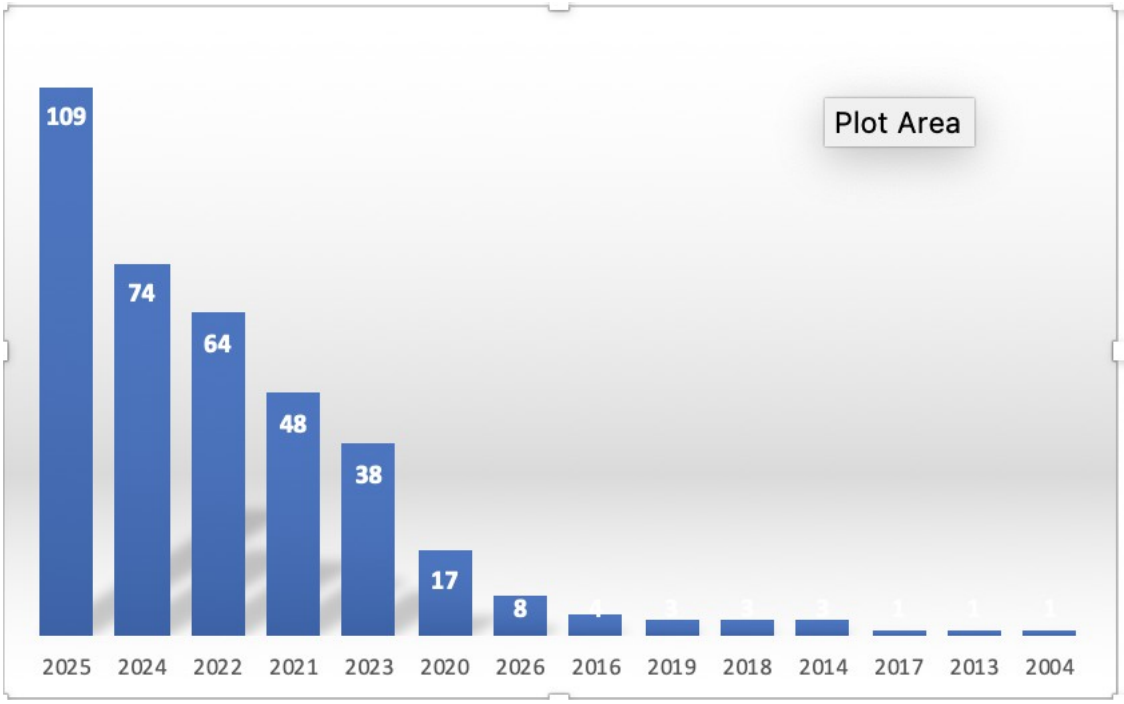

Figure 4. Co-citation date range in Scopus.

There are 140 source publications in Scopus (the top tier of the distribution appears in Table 2). Both the Handbook and Encyclopedia from the 2025 study are here (but not in WoS), along with three anthologies, which are rich sources of co-citation among scholars who identify each other as part of the research front. But the major journal Issues in Interdisciplinary Studies does not appear, probably because it is not indexed in Scopus.

Table 2 Co-citation sources in Scopus.

Humanities and Social Sciences Communications	45
Environmental Science and Policy	19
Sustainability Science	14
Minerva	9
Futures	8
Szostak (2024). The Handbook of Interdisciplinary Teaching and Administration	8
Lawrence (2023). Handbook of Transdisciplinarity: Global Perspectives	7

Darbellay (2024). The Elgar Encyclopedia of Interdisciplinarity and Transdisciplinarity	6
Frontiers in Education	6
Vienni-Baptista et al. (2024). Interdisciplinary Practices in Higher Education: Teaching, Learning and Collaborating Across Borders	6
Sustainability (Switzerland)	6
Frontiers in Psychology	5
Global Environmental Change	5
Science and Public Policy	5

4.0 Discussion

We wanted to see how ontical poles as visualized using author co-citation in the general scholarly universe represented by the two indexing giants WoS and Scopus would compare to what we had seen in the two 2025 hallmark volumes. In general, our results are comparable ontically; we see the same clusters, and also we see that the ontical poles are closely associated with social interactions—AIS, TDNet, Team Science, Creativity, etc.

The co-citation date range in WoS seems to be closely associated with a 2012 anthology. In Scopus it seems more oriented to the present, but that also likely reflects the influence of the two volumes from 2025, on the one hand, and the absence of a major journal of interdisciplinarity, on the other. In other words, the domain in general is very loosely correlated with four basic ontical poles; author co-citation increases on the occasions when special volumes are produced by the domain to celebrate the domain. One might contend that this is a sign of concretization, but actually we see very little in the way of encroachment from new theoretical poles. Analysis of international conferences might provide that sort of evidence, but for now we see a field that is quite open to new ideas so long as they approach along one of the four social lines. Interestingly, classical works by Klein, Repko, and others that are generally highly cited are not co-cited, suggesting they are not perceived in ways that relate to the four social associative poles.

Though the Scopus and Web of Science co-citation results are different, they together provide support for the tentative conclusions of Smiraglia and Szostak (2025): First, that there are recognizable “invisible colleges” associated both with different organizations (AIS, TDNet, Team Science) and topics (creativity, team science, transdisciplinarity), and second, and most importantly, that there is sufficient evidence of connection among these to speak of a global conversation.

It will be interesting to see whether these patterns shift over time. Will the existence of the Global Alliance for Interdisciplinarity and Transdisciplinarity lead to a more unified global discourse?

In terms of publication outlets, our analysis justifies the widespread perception that the literature is diffuse. A couple of journals, Issues in Interdisciplinary Studies and Humanities and Social Sciences Communications publish numerous articles about interdisciplinarity (Interdisciplinary Science Reviews has re-oriented its editorial mission to also be a journal about interdisciplinarity, but this initiative is too recent to appear in our analysis). Most articles, though, appear in field journals— in futures studies, environmental studies, education, health, and elsewhere—that see interdisciplinarity as one topic within their purview. Our data suggest that collected volumes are roughly as important as journal articles. This is a common pattern in social science fields and is observed in KO itself. For the field of interdisciplinary studies, these collected volumes may play an important role in encouraging coherence in the field.

5.0 Conclusion

The field of interdisciplinary studies is maturing. It is now characterized by handbooks, an encyclopedia, and some textbooks. Yet it can still be daunting for both newcomers and established scholars to gain an appreciation of the contours of the field. Our domain analysis in search of ontical poles in the field of interdisciplinary studies can be helpful here.

One important question for all academic fields is the degree to which they are coherent versus fragmented into subfields. Collins (1998) suggests that a functional domain can have no more than six ontical poles before splintering. What we see in interdisciplinary studies, now from two different points of view, is that the domain exists along relatively social lines related to the invisible colleges at work. This is a sign of a healthy, and still young, scholarly domain.

The general result of our study—that there is evidence of both coherence and specialization—likely characterizes many fields. Yet the balance between coherence and specialization may differ. This can only be established if many fields are examined domain-analytically.

Our study thus also serves as evidence of the value of these particular domain-analytic techniques employed in different venues over time to provide diverse snapshots of the domain visualization. Indeed, such techniques may be particularly valuable for fields that are diffuse or relatively novel. One challenge that needs to be addressed in such cases is "Where to start?" Our strategy of starting with an encyclopedia and handbook, and then broadening our enquiry to more exhaustive databases, is promising because it allowed us easily to identify the domain's research front from an insider's perspective. An obvious next step would be the analysis of international conferences within the domain.

AI Usage Statement: AI was not employed in the drafting of this paper.

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