

# Interdisciplinarity in the social sciences and humanities: observations from recent ECOOM-Antwerp research

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## ABSTRACT

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In 2019 the Flemish Government invited the researchers at the Flemish Centre for Research and Development Monitoring (ECOOM) to start a temporary research program on interdisciplinary research (IDR). The program aims at a better conceptual understanding of IDR as well as the development of indicators to measure and monitor IDR. Given the specialization of the ECOOM group at the University of Antwerp (ECOOM-Antwerp), the focus of our work in this research program is on social sciences and humanities. A first observation is that few study address interdisciplinarity in or involving social sciences and humanities, in particular the measurement and monitoring of IDR emerged as scantily explored. Hence the new research program ventures into unknown territory.

A common definition of IDR is the one introduced by the National Academies of Science in 2005: *"Interdisciplinary research is a mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or area of research practice."* This definition assumes the existence of disciplines, which are in themselves subject to continuing change. Differentiation leads to the emergence of specialisms, also on the boundaries of disciplines. At the same time the study of social novelties leads to the emergence of

domains that have no direct or just several disciplinary predecessor(s) and are interdisciplinary by definition. Examples include the study of new media and games. A major conclusion from this conceptual analysis is that disciplinary specialization and interdisciplinarity emerge together and co-exist (Eykens, 2022). Disciplines and interdisciplinarity are often perceived or positioned as opposed or being different in nature, yet interdisciplinarity in the social sciences and humanities is not a binary (yes-no) concept, nor is it exceptional. Hence, in order to foster interdisciplinary research, research assessment should take into account the diversity of goals and a diversity of criteria and indicators of the units of assessment (cf. Klein, 2008).

Based on this framework, Joshua Eykens, Hongyu Zhou, Raf Guns and myself, all affiliated to ECOOM-Antwerp, so far conducted four empirical studies.

For the first study, we asked ourselves whether social sciences are becoming more interdisciplinary (Zhou et al., 2022). To this end, we applied and complemented the methodological framework used by Rafols and Meyer (2009) to study the evolution of interdisciplinarity in STEM. Based on a large dataset of over 4 million social science publication published between 1960 and 2014 we observe an overall increase in interdisciplinarity. However, the heterogeneity of the knowledge base increases only in fields that mainly import knowledge. Moreover, when controlling for other changes in the literature (e.g. the steady increase in number of co-authors and references), we observe hardly any increase in interdisciplinarity. In the future we aim at applying this framework to other fields too, as our findings bring nuance to the often assumed overall increase in interdisciplinarity.

In second study we analyzed the extent to which authors in the social sciences and humanities switch between fields and when they do to what extent they switch to cognitively similar or dissimilar fields (Eykens, Guns & Engels, under review). For this study we used data from the VABB, the Flemish Academic Bibliographic Database for the Social Sciences and Humanities. A major observation from this study is that the vast majority of scholars in the social sciences and humanities publishes across multiple disciplines. The continuing growth and increasing specialization of research leads to ever-greater diversity of scholarly communities situated at the intersections of traditional disciplines, including STEM. Over time researchers switch between disciplines more often, and to areas that are cognitively further away. Again, this may indicate that the study of new subject and specialties go hand in glove with the exploration of boundaries of multiple fields.

A third study, by Eykens, Guns & Vanderstraeten ([Eykens et al., 2022](#)), explores the disciplinary diversity of subject specialties in the social sciences and humanities. Subject specialties are textually coherent clusters of publications included in VABB. The authors found that all subject specialties serve as interdisciplinary trading grounds, with outliers in both directions of the disciplinary-interdisciplinary continuum. For a large share of specialties, the dominant cognitive and organizational disciplinary classification were found to be well aligned. For other specialties a more complex pattern emerges, ranging from cognitively homogeneous but organizationally divers (e.g. developmental psychology), over cognitively divers yet organizationally homogeneous (e.g. operation studies) to cross-disciplinary.

A fourth and most recent study, by Zhou, Sun, Guns & Zhang (under review), analyses how social sciences knowledge affects natural sciences. To this end, the study investigates the prevalence, origin, and location of academic references to social sciences from a set of natural sciences publications that appeared in PLoS (Public Library of Science) journals. The authors report a limited (~3%) yet growing presence of references to the social sciences in natural sciences publications. Hence social science knowledge is exported, and increasingly so, across fields, including the natural sciences.

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