Using Doctoral Dissertations for A New Understanding of Disciplinarity and Interdisciplinarity

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ABSTRACT

This paper displays a preliminary result of studying disciplinarity and interdisciplinarity based on a new source of data: doctoral dissertations. Using doctoral dissertations across more than a century, this paper aims to report the overall development of disciplines and the interaction among disciplines. Preliminary results demonstrate significant increases in the number of disciplines across the 20th century and the level of interaction among disciplines. This poster focuses on the 30 highest producing disciplines and examines the dependency of these disciplines on other disciplines (where dependency is measured by the proportion of dissertations within that discipline that are also labeled with another discipline).

INTRODUCTION & MOTIVATION

Journal articles have provided the primary data source for describing the scientific landscape, but produced biased knowledge map. When working with Web of Knowledge data, disciplines which produce high rates of journal articles become grossly overrepresented and disciplines with different types of output are omitted or marginalized.

Doctoral dissertations can enhance our current understanding of the landscape of science for several reasons. Firstly, all research disciplines produce dissertations. Therefore, this genre does not favor certain disciplines or authors who might be inordinately prolific. Secondly, dissertations are heralded as a student’s original and independent contribution to the research landscape. We should, therefore, expect dissertations to provide indicators of innovation and novelty for a discipline.

DATA

- Over 2.3 million dissertations provided by ProQuest;
- From 1,490 institutions across 66 countries;
- 1848-2009 Year (1900-2009 used here) 94 Degrees;
- 166 Disciplines;
- 432 Specialties;
- 1,850,846 Research Doctorate Dissertations (80%)

RESULTS

- Number of Dissertations Over Subject Categories
- Percentage of Single&Multi Disp. Diss. by Decade
- Number of Single & Multi-Disp. Diss. in each Discipline (Top 30 Disciplines)

RESULTS CONT’D

- Very Independent Disciplines (%Single Disp≥60%)
- Completely Dependent Disciplines (%Multi Disp=100%)

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Discussion & CONCLUSIONS

- Significant increases in the number of disciplines across the 20th century and the level of interaction among disciplines;
- Science disciplines (e.g., mathematics, chemistry, and physics) bare fewer interdisciplinary features than social science and humanities disciplines
- Many contemporary social science and humanities disciplines (e.g., black studies and women’s studies) are highly dependent.