What Do Humanities Researchers Do?

Research Production and Communication Across Disciplines in Denmark in the Late-Twentieth and Early-Twenty-First Century

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BY
LASSE GØHLER JOHANSSON

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AALBORG UNIVERSITY
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PREFACE

Phew! I had no idea writing a PhD dissertation would be that much work. I knew research would be a lot of work. But I had no idea that I would spend months on end writing and rewriting paper drafts. The three papers that make up the dissertation have been completely rewritten around ten times each, which means that I have written I do not know how many pages. I even wrote a few papers that I did not include in the dissertation, either because they did not fit with the overall aim or because they were horrible papers. So they ended up in the drawer. I am sure science will do just fine without them, though. Anyway, I would not have been able to get through all that research and writing without support from friends, family and my partner, Sabine, who has been there for me even though I have passed countless nights, weekends and holidays working on the dissertation. Nor would I have been able to get through the research and writing without help and support from colleagues around the world. I have been fortunate to have super competent, helpful and supportive people around me the whole time.

The dissertation is the product of research carried out in the context of the research project Mapping the Dynamics of Humanities (2012-2015), funded by Velux Fonden (grant number 437810). From Mapping the Dynamics of Humanities, I want to thank my co-authors David Budtz Pedersen, Jonas Følsgaard Grønvad, Simo Køppe, Andreas Jan Liljenstrøm and Jutta Maria Vikman. I could not have done the papers without them. I also want to thank the other members of the research group for contributions during the research process: Magnus Biilmann, Claus Emmeche, Vincent F. Hendricks, Cecilie Juul Jørgensen, Esther Oluffa Pedersen, Andreas Roepstorff, Frederik Stjernfelt and Uffe Østergård. I owe a special thanks to Simo Køppe and Uffe Østergård who have always shown interest and confidence in my work. That confidence means a lot. The dissertation is dedicated to the memory of Tina Friis and Svend Østergaard, who passed away in 2016 and 2017, respectively. Tina and Svend were also members of the research group. They were role-model colleagues and made our monthly meetings more interesting and more fun.

The dissertation has been supervised by David Budtz Pedersen and Frederik Stjernfelt from Humanomics Research Centre, Department of Communication and Psychology, Aalborg University Copenhagen. I am thankful to David and Frederik for commenting on numerous paper drafts and for giving me the opportunity to do a dissertation in the first place. The dissertation has been co-supervised by Anders Blok from the Department of Sociology,

University of Copenhagen. I am thankful to Anders for excellent comments on paper drafts. From Humanomics Research Centre, I want to thank Jonas Følsgaard Grønvad and Andreas Brøgger Jensen for contributions during the research and writing process. From the Department of Communication and Psychology, Aalborg University, I want to thank the head of department, Mikael Vetner, for supporting the submission of the dissertation. From the Doctoral School of the Humanities, Aalborg University, I want to thank the administration for making the submission process as smooth as possible. And from Aalborg University Library, I want to thank Charlotte Kreipke for finding every single book that I have requested.

I did two research stays abroad in connection with the dissertation work. In the fall 2015, I was a visiting researcher at the Department of Sociology, University of Michigan, Ann Arbor, where I was working on a paper on the relationship between the disciplines of history and sociology. I decided not to include the paper in the dissertation, not because it was a horrible paper, but because it did not fit with the overall aim of the dissertation. Hopefully, it will be published some other time. I want to thank George Steinmetz for inviting me and for taking so much interest in my work. I presented the paper at the Social Theory Workshop at the University of Michigan on September 30, 2015. I want to thank Simeon Newman and the other participants for their comments and suggestions. In the fall 2017, I was a visiting researcher at the Department of Sociology, Harvard University, where I was working on paper 3. I want to thank Michèle Lamont for inviting me and giving me the opportunity to take part in the Culture and Social Analysis Workshop. I presented an early version of paper 3 at a small workshop at Harvard University on April 11, 2017. I want to thank the participants for their comments and suggestions.

I have presented drafts of the individual dissertation papers at various conferences and seminars in Denmark and abroad. The conferences include sociological, historical and more interdisciplinary ones, and I have learned a lot from discussions with people from different disciplines. Paper 1 was presented at a seminar at the School of Social Science, Institute for Advanced Study in Princeton, April 19, 2018, and a seminar at the Department of Sociology, University of Copenhagen, March 25, 2015. From Princeton, I want to thank Kristoffer Kropp and the other participants for stimulating discussions. And from Copenhagen, I want to thank Asta Breinholt Lund, Peter Gundelach and the other participants for useful comments on the paper. Paper 2 was presented at the conference The Making of Humanities V in Baltimore, October 6, 2016, and the conference Mapeando as Dinâmicas das Humanidades no Brasil in

Rio de Janeiro, September 21, 2017. From the conference in Baltimore, I want to thank the session participants for their comments and suggestions. And from Rio de Janeiro, I want to thank Karl Erik Schøllhammer and the conference participants for stimulating discussions. Paper 3 was presented at the Danish Conference of Sociology in Esbjerg, January 26, 2018, and The Making of the Humanities VI conference in Oxford, September 30, 2017. I want to thank all participants for comments and suggestions.

Copenhagen, September 15, 2020

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ENGLISH SUMMARY

The dissertation explores various practices involved in the production and communication of humanities research in Denmark in the late-twentieth and early-twenty-first century, a period characterized by increasing demand for applied research, on the one hand, and increasing levels of transnational research collaboration, communication and mobility, on the other. It contains an introduction and three individual research papers. The first paper provides a cross-sectional analysis of research production and communication across disciplines in 2013. Based on responses from an e-mail questionnaire survey, it identifies four styles of humanities research, including a new, applied style. The second paper provides a longitudinal analysis of research production across disciplines between 1992 and 2012. Based on data from a coding of PhD dissertations, the paper describes several methodological changes in the humanities, including an increase in the use of anthropological methods. Finally, the third paper provides a longitudinal analysis of research communication across disicplines also between 1992 and 2012. Based on data from the coding of PhD dissertations, it shows that responses to the increasing levels of transnational collaboration, communication and mobility in the context of Europeanization differed significantly across disciplines. The individual papers offer different answers to the same question: what do humanities researchers do?

DANISH SUMMARY

Afhandlingen undersøger produktionen og kommunikationen af humanistisk forskning i Danmark i slutningen af det tyvende og starten af det enogtyvende århundrede, en periode karakteriseret dels ved stigende efterspørgsel på anvendt forskning og dels ved øget samarbejde, kommunikation og mobilitet på tværs af nationale grænser. Afhandlingen indeholder en indledning og tre forskningsartikler. Den første artikel giver en tværsektionel analyse af forskningsproduktion og -kommunikation på tværs af fag i 2013. Med udgangspunkt i data fra en spørgeskemaundersøgelse blandt forskere ved danske universiteter, museer, biblioteker og arkiver identificerer artiklen fire humanistiske forskningsstile, herunder en ny, anvendt forskningsstil. Den anden artikel giver en longitudinel analyse af forskningsproduktion på tværs af fag mellem 1992 og 2012. Med udgangspunkt i data fra en kodning af ph.d.-afhandlinger forsvaret ved danske universiteter beskriver artiklen ændringer i humanistiske forskeres valg af metode, herunder en stigning i brugen af antropologiske metoder. Den tredje artikel giver en longitudinel analyse af forskningskommunikation på tværs af fag også mellem 1992 og 2012. Med udgangspunkt i data fra kodningen af ph.d.-afhandlinger viser artiklen, at forskere fra forskellige fag reagerede forskelligt på det øgede samarbejde, kommunikation og mobilitet på tværs af nationale grænser i konteksten af europæisk integration. De tre artikler giver forskellige svar på spørgsmålet: Hvad laver humanistiske forskere?

INTRODUCTION: STUDYING RESEARCH PRODUCTION AND COMMUNICATION ACROSS DISCIPLINES

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Abstract

This dissertation explores various practices involved in the production and communication of humanities research in Denmark in the late-twentieth and early-twenty-first century, a period characterized by increasing demand for applied research, on the one hand, and increasing levels of transnational research collaboration, communication and mobility, on the other. It contains an introduction, three individual research papers and a conclusion. The introduction describes 1) the conditions of production of the dissertation, including the research project in which the dissertation was produced, 2) the overall aim of the dissertation, 3) the delimitation of the research object, 4) the sociological and historical literatures addressed by the individual papers, 5) the central concepts, most importantly the concept of scientific disciplines, and the central processes that shape research production and communication in disciplinary contexts, 6) the empirical material, including an e-mail questionnaire survey among humanities researchers and data from a coding of humanities PhD dissertations, 7) the terminology of the dissertation and 8) some reading guidelines, including use of citations, references and footnotes.

Keywords

Sociology of science; history of science; humanities; research production; research communication; scientific boundaries

The conditions of production of the dissertation

The political situation of the humanities

The dissertation was produced under specific conditions defined by the political situation of the humanities in Denmark and Europe. "Once the pinnacle of education and intellectual development, today they suffer from a serious image problem. Disciplines like philology, art history, linguistics, literary studies, and musicology are seen as a luxury pastime which is of little use to society and even less to the economy" (Bod 2013: xii). This is a very general description, but also a very accurate description of the political situation of the humanities in the European context in the early-twenty-first century. The image problem of the humanities is reflected in the allocation of research funding. With the aim of strengthening the European economy on the global market, the European Commission made significant investments in research activities between the late-twentieth and early-twenty-first century. The annual budget of the Framework Programmes, for example, grew exponentially between the 1980s and the 2010s. Humanities and social science research was funded by the Framework Programmes from the 1990s. However, relatively large shares of the funding continued to be allocated to the medical sciences, natural sciences and engineering (Schögler and König 2017).

In line with the policies of the European Commission, the Danish government made significant investments in research activities in the early-twenty-first century. In 2006, for example, it was decided to double the number of PhD students in Denmark. However, investments were made primarily in the medical sciences, natural sciences and engineering, because the government expected a higher demand for PhD graduates from those fields. Between 2006 and 2010, the number of PhD students enrolling at Danish universities increased from 1,491 to 2,624 (figure 0.1). During the late 1990s, the number had been stable in all major fields of science. In the early 2000s, there had been a slow increase in all major fields of science, except for the agricultural sciences and the humanities. And from 2006, the number increased considerably in all major fields of science, except for the humanities. The fact that the number of students enrolling in humanities PhD programs between 2006 and 2010 did not decrease either could possibly be explained by an increase in revenue coming from an increase in the number of students enrolling in BA and MA programs, which is what happened in the social sciences during the same period (Andersen 2011).[1]

[1] Source: The Danish Government. 2006. *Fremgang, fornyelse og tryghed: Strategi for Danmark i den globale økonomi.* Albertslund: The Danish Government.

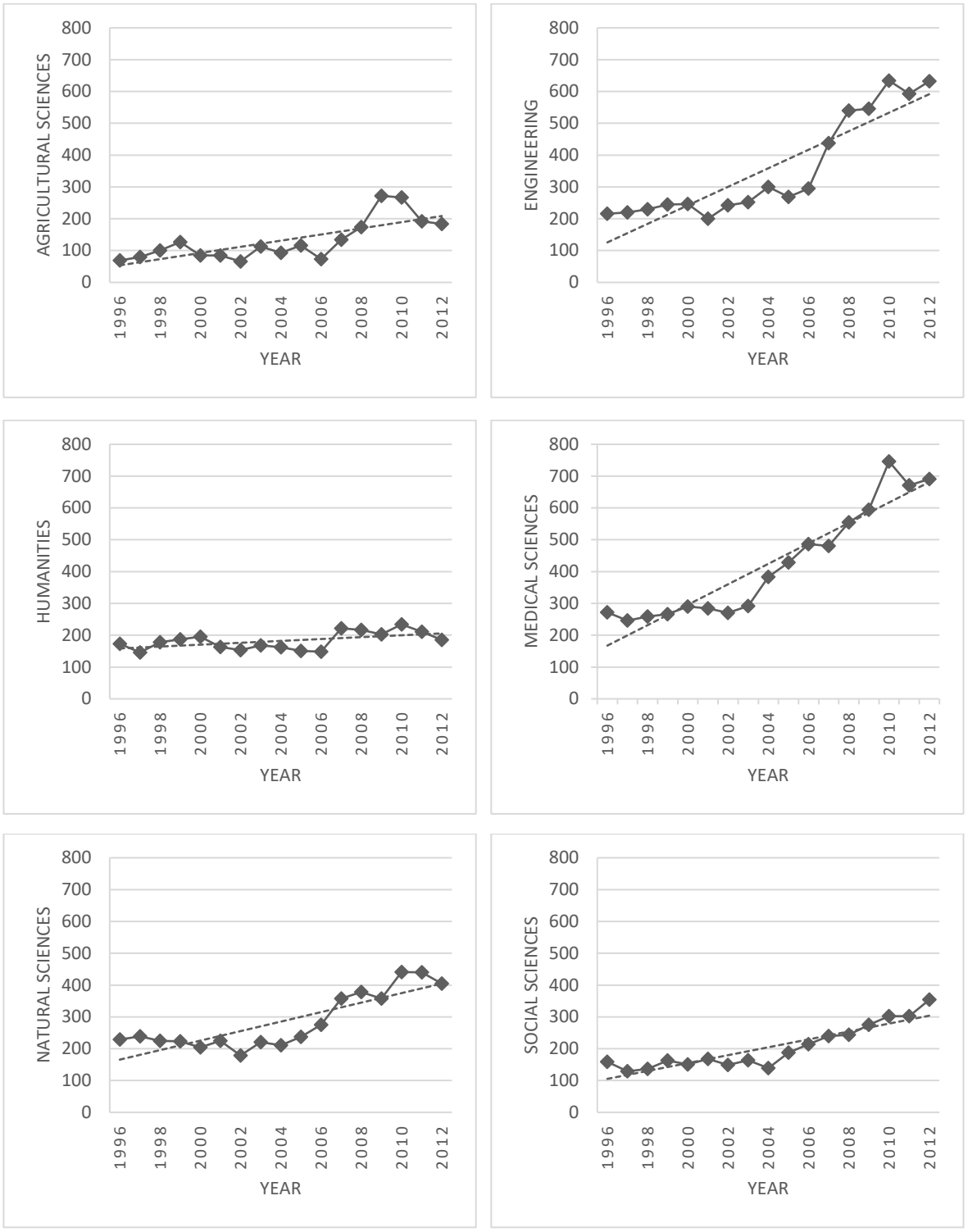

Figure 0.1: PhD students enrolled at Danish universities on major field of science, 1996-2012
Source: Statistics Denmark, PHD1.
Notes: 1) Figures based on table A.1 in appendix. 2) Trend lines are ordinary least squares regression lines.

It was in the context of that specific political situation of the humanities that the philanthropic foundation Velux Fonden decided to establish a number of research projects designed to carry out "a thorough mapping and analysis of the current state of the humanities and the developments at the interfaces with other sciences and areas of society." The research projects would serve three different purposes: 1) "further our understanding of the humanities and its academic, theoretical and methodological development and multi-disciplinary opportunities," 2) "make the role and importance of the humanities in society more visible to a wider public" and 3) "provide a knowledge base for the foundation's strategic work..."[2] In other words, the projects would serve a scientific purpose by producing research on theoretical and methodological developments across humanities disciplines, a political purpose by making the importance of the humanities visible to a wider public, and an applied purpose by providing the foundation with useful information about actual and possible funding recipients. These purposes defined the conditions of production of the dissertation in different ways, for example by imposing limitations on the temporal and geographical scope of the analyses.

Velux Fonden established two collaborative projects responsible for carrying out the mapping and analysis of the humanities. The Human Turn emphasized the political purpose and aimed to make the importance of the humanities visible to a wider public. Mapping the Dynamics of Humanities, which I participated in from 2013 to 2015, emphasized the scientific purpose and aimed to "map all humanities disciplines in Denmark and provide an overview of the methods and norms used in the production of knowledge, considered reliable and useful."[3] While Mapping the Dynamics of Humanities emphasized the scientific purpose, the political and applied purposes did impose limitations on the research. The mapping of humanities disciplines was based on two comprehensive empirical investigations, including an e-mail questionnaire survey among humanities researchers at Danish universities, museums, libraries and archives, and a coding of humanities PhD dissertations defended at Danish universities between 1992 and 2012. These investigations were carried out between 2013 and 2014. The papers of the dissertation are based on data from these investigations. Paper 1 is based on the survey data, and paper 2 and 3 on the dissertation data.

[2] Source: Velux Foundations. https://veluxfoundations.dk/en/forskning/humanvidenskabelig-forskning [accessed October 25, 2018].
[3] Source: Velux Foundations. https://veluxfoundations.dk/sites/default/files/kernegruppebevillinger_2008_-_2017_opd._2018-06-15_09_09_41_1.pdf [accessed October 25, 2018, my translation].

Mapping the Dynamics of Humanities

Findings from Mapping the Dynamics of Humanities were published between 2015 and 2017 in three edited volumes, two in Danish (Budtz Pedersen et al. 2015; Budtz Pedersen and Stjernfelt 2016) and one in English (Emmeche et al. 2017). The edited volumes contain chapters based on the survey, the coding of PhD dissertations and other smaller investigations, for example an interview study of research styles across humanities disciplines (Østergaard 2015; Østergaard and Torst Nielsen 2017). I have co-authored chapters in all three volumes (Johansson et al. 2015; Budtz Pedersen et al. 2016; Johansson et al. 2016a; Johansson et al. 2016b; Johansson et al. 2016c; Johansson et al. 2016d; Grønvad and Johansson 2017). The papers of the dissertation partly overlap with these publications, which are based on the same empirical material. However, chapters and dissertation papers all constitute original research contributions, both theoretically and empirically. Paper 1 partly overlaps with chapters from all three volumes (Johansson et al. 2015; Johansson et al. 2016c; Grønvad and Johansson 2017), paper 2 with a chapter from one of the volumes (Liljenstrøm et al. 2016a) and paper 3 with a chapter from one of the volumes (Liljenstrøm et al. 2016b).

Mapping the Dynamics of Humanities did not address a specific theoretical problem. The aim of the project was empirical rather than theoretical: to map certain practices in certain disciplines. The fact that the project did not address a specific theoretical problem can be seen as the consequence of, among other things, the multidisciplinary composition of the research group. Among the participants, four were trained in psychology, three in sociology (one of them me), three in philosophy, one in anthropology, one in biology, one in history, one in mathematics and one in Nordic languages and literature. The participants shared an interest in the humanities, not in specific theoretical problems. Like the aim of the research project as a whole, the aim of the dissertation is empirical rather than theoretical. That does not mean that the dissertation does not contribute theoretically to the literature. But the individual papers of the dissertation make different theoretical contributions. Regardless of these differences, the papers all deal with the humanities in Denmark in the late-twentieth and early-twenty-first century, they are all based on the same understanding of disciplines as relatively autonomous social fields, and they all introduce new empirical material in order to study the everyday practices of humanities researchers.

When I joined Mapping the Dynamics of Humanities in 2013, the overall aim of the research project had already been formulated. The individual papers of the dissertation can be

seen as the product of my research interests confronted with the possibilities and limitations of the overall aim. The ideas for the papers developed during the research process, for example from observations made in exploratory analyses of the empirical material. The idea for the paper 3, for example, developed from the observation that English was replacing Danish as the primary publication language in humanities PhD dissertations in Denmark between 1992 and 2012. This observation made me consult different literatures, including the sociological literature on Europeanization and the historical literature on the national relevance of the humanities. Based on these literatures, I was able to formulate hypotheses about publication language in the humanities, which could be tested in the empirical material. Like the idea for paper 3, the ideas for paper 1 and 2 also developed from observations made in exploratory analyses of survey data or dissertation data, respectively. The papers took shape through a process of moving back and forth between empirical analysis and theorizing.

Mapping the Dynamics of Humanities was carried out in the context of Humanomics Research Centre, which is now placed at the Department of Communication and Psychology, Aalborg University Copenhagen. A series of other collaborative research projects have been carried out in the context of Humanomics since 2015. During the spring 2016 I participated in the multinational research project ACCOMPLISSH, which was funded by Horizon2020. And from 2016 to 2018, I participated in Mapping the Public Value of Humanities, a new research project funded by Velux Fonden. The project followed up on some of the questions that we only touched upon in Mapping the Dynamics of Humanities, specifically questions related to communication of research to non-scientific audiences and interactions between humanities researchers and actors from different non-scientific fields. In 2018, I coordinated an e-mail questionnaire survey among humanities researchers at Danish universities (Johansson et al. 2018). The questionnaire contained a series of questions about research communication to non-scientific audiences and a series of questions about interactions with actors from non-scientific fields, including the fields of 1) education, health and social work, 2) public authorities, 3) private organizations, 4) cultural and religious institutions and 5) businesses. The dissertation, however, is based exclusively on the 2013 survey.

Aim and scope of the dissertation

Research production and communication

The aim of this dissertation is to study the practices through which research is produced and communicated across humanities disciplines in Denmark in the late-twentieth and early-twenty-first century. Basically, the dissertation aims to provide an answer to the question: what do humanities researchers do? This is in line with the overall aim of Mapping the Dynamics of Humanities, which was to "map all humanities disciplines in Denmark and provide an overview of the methods and norms used in the production of knowledge that is considered reliable and useful."[4] However, the dissertation focuses more on the question of methods than the question of norms, understood as the "cultural values and mores governing the activities termed scientific" (Merton 1973: 268). Paper 1 provides a cross-sectional exploratory analysis of a wide range of practices involved in research production and communication, including choices of research topics, theories, empirical material, analytical methods, epistemic and practical research aims, publication strategies and collaborative activities. Paper 2 provides a longitudinal analysis of practices involved in research production, specifically choices of empirical material and analytical methods. And paper 3 provides a longitudinal analysis of research communication practices, specifically choices of publication language.

Since the 1970s, there has been an increasing interest among sociologists of science in the everyday practices of researchers (Lynch 1997). As an example, sociologists of science have studied the practices through which research is produced and communicated in the medical sciences and natural sciences. These studies have contributed to the literature by shifting the focus from the products of research to the production of research (Knorr Cetina 1995). Recently, there has been increasing interest among sociologists of science in the practices through which research is produced, evaluated, communicated and applied in the humanities and social sciences. However, sociologists of science have "yet to investigate the practices involved in the making of social knowledge to anything approaching the extent that it has examined the practices in use in the physical and biological sciences […] or to make social knowledge practices a core topic of empirical research" (Camic et al. 2011: 11). The aim of the dissertation is exactly to make social knowledge practices, specifically humanities knowledge practices, the core topic of empirical research. The focus is on production and

[4] Velux Foundations. https://veluxfoundations.dk/sites/default/files/kernegruppebevillinger_2008_-_2017_opd._2018-06-15_09_09_41_1.pdf [accessed October 25, 2018, my translation].

communication of research, and evaluation and application of research are discussed only to the extent that they are relevant for the analysis of research production and communication.

Across Humanities disciplines

The dissertation studies research production and communication across humanities disciplines. Most sociological studies of science, including laboratory studies, are case studies of individual researchers, laboratories, disciplines or other smaller groups of researchers (Whitley 1984: 1-9). Recently, there has been increasing interest among sociologists of science in the study of major fields of science, especially the humanities and social sciences. Examples include studies of research evaluation across humanities and social science disciplines (Guetzkow et al. 2004; Lamont 2009; Lamont and Huutoniemi 2011; Mallard et al. 2011; Tsay et al. 2003). Most historical studies of science are also case studies of individual researchers, laboratories, disciplines or other small groups of researchers. However, there are several general histories of the natural sciences. It is a different story with the humanities. "[F]rom a historiographical point of view, a general history of the humanities is conspicuous by its absence" (Bod 2013: 4). Recently, there has been increasing interest among historians in the study of the humanities as a major field of science (Bod 2013; Turner 2014). In line with these developments in the sociology and history of science, the dissertation studies the humanities as a major field science on a par with the social sciences, medical sciences, natural sciences and engineering.

The dissertation draws systematic comparisons between disciplines. It is an important assumption of the dissertation that disciplines differ according to the practices involved in research production and communication. The questions are how and how much they differ? According to Whitley, a "… comparative understanding is an essential part of any adequate sociology of scientific knowledge which seeks to analyse how different knowledges are produced and changed" (1984: 5-6). Comparative analysis has certain advantages over non-comparative forms of analysis. Most importantly, it allows for more precise identification of the particularities of individual disciplines, and for a more precise identification of generalities of multiple disciplines. Comparative analysis also has certain limitations. "[T]he simplifying assumptions that make this approach possible often violate commonsense notions of causation and sometimes pose serious obstacles to making interpretive statements about specific cases…" (Ragin 2014[1987]: xiii). These limitations also apply to the papers of the dissertation, which analyze distributions of various practices across disciplines without providing more detailed

interpretive statements about individual disciplines. That simply falls beyond the scope of the dissertation.

In Denmark in the late-twentieth and early-twenty-first century

The temporal and geographical scope of the dissertation are largely defined by the aim and purposes of Mapping the Dynamics of Humanities. The research project was established as a response to the political situation of the humanities in Denmark in the beginning of the twenty-first century. And while it emphasized the scientific purpose of providing empirical evidence of theoretical and methodological developments in the humanities, it also served the political purpose of making the importance of the humanities visible to a wider public, and the applied purpose of providing Velux Fonden with useful information about actual and possible funding recipients. This is why the geographical scope of the research was restricted to Denmark. As luck would have it, the Danish case turned out to be instructive. Analyzing survey responses, PhD dissertations and various documentary sources, I noticed how the practices of humanities researchers in Denmark were often imported from other national contexts, most importantly the scientific centers Britain, France, Germany and the United States. The continuous import of theories, analytical methods, etc. from the scientific centers means that Denmark constitutes something like a sociological laboratory for the study of practices that are actually global in scope. I discuss the generality of findings in the concluding sections of the individual papers.

The temporal scope of Mapping the Dynamic of Humanities was restricted to the late-twentieth and early-twenty-first century, specifically the period around the 1990s and 2000s. This is also a consequence of the political and applied purposes of the research project. The project would not be able to make visible the importance of the humanities to a wider public or provide Velux Fonden with useful information about actual and possible funding recipients if it studied the humanities in the nineteenth century, for example. The specific years of observation of the individual papers depend on the empirical material. Paper 1 is restricted to 2013, which is the year we carried out the e-mail questionnaire survey. Papers 2 and 3 are restricted to the period 1992-2012. These papers are based on the coding of PhD dissertations. The last year of observation is 2012 because we started the research in 2013, and the first year of observation is 1992 because the PhD dissertation replaced the old licentiate degree (*licentiatgraden*) in Denmark around that time. While the statistical analyses of papers 1-3 are restricted to specific years of observation, all three papers take into account the wider historical context.

Delimitation of the research object

The varying boundaries of the humanities

The most significant obstacle to the study of the humanities is the delimitation of the research object. The question is: which disciplines should be included in the humanities? Let me begin by saying that there is no straightforward answer to that question. Delimitation is a significant obstacle to studies of any major field of science, including the social sciences, medical sciences, natural sciences and engineering. The obstacle arises because the boundaries of major fields of science vary significantly across geographical and temporal coordinates. In the United States, for example, the humanities usually include the study of arts, classical and modern languages, comparative literature, linguistics and philosophy (Abbott 2001: 123). In Denmark, the humanities (sometimes) also include anthropology, history and psychology. There is also the question of the new interdisciplinary fields of study, including area studies, cultural studies, educational studies, gender studies, organizational studies and science studies. Variations across national borders introduce obstacles to regional or global studies of major fields of science. The dissertation deals with the humanities in a specific national context, which makes things easier. However, the boundaries of major fields of science also vary within national borders.

Universities, funding institutions, etc. within the same national context often disagree on where to draw the boundaries between major fields of science. As an example, a study of the institutional development of the *Geisteswissenschaften* in West Germany between 1954 and 1987 shows that there is "no consensus" between German universities on where to draw the boundaries of the humanities (Weingart et al. 1990: 14). The same could be said of Danish universities. Anthropology, for example, is placed within the Faculty of Arts at Aarhus University, and within the Faculty of Social Sciences at the University of Copenhagen. And psychology is placed within the Faculty of Humanities at Aalborg University, the Faculty of Business and Social Sciences at Aarhus University, the Faculty of Social Sciences and the University of Copenhagen and the Faculty of Health Sciences at the University of Southern Denmark. National research statistics by Statistics Denmark are based on OECD standards. They include the following disciplinary categories: 1) History, 2) Archeology, 3) Languages

and philology, 4) Literature, 5) Philosophy and history of ideas, 6) Theology, 7) Music and theatre, 8) Art and architecture, 9) Film and media studies and 10) Humanities (other).[5]

Boundary work and the humanities

The sociological literature on boundaries and boundary work provides useful conceptual tools for understanding variations in the boundaries of major fields of science. A recent review of the literature distinguishes between symbolic and social boundaries. Symbolic boundaries are the "conceptual distinctions made by social actors to categorize objects, people, practices, and even time and space," and social boundaries are the "objectified forms of social differences manifested in unequal access to and unequal distribution of resources…" (Lamont and Molnár 2002: 168). The basic idea is that social boundaries depend on symbolic boundaries. As an example, the social boundaries between university faculties depend on the symbolic boundaries between major fields of science. They depend on conceptual distinctions between research objects, researchers, research practices, etc. Because the access to and distribution of resources depend on symbolic boundaries, social actors compete over where to draw the boundaries. The concept of boundary work refers to the discursive practices that social actors mobilize in such competition. Competition over boundaries always takes place in specific historical contexts, defined by specific interests, distributions of resources and other contingencies. This is why the boundaries of major fields of science vary geographically and temporally.

A recent study applies the concepts of boundaries and boundary work in an analysis of the humanities (*Geisteswissenschaften*) in Germany (Hamann 2018). The study shows that natural scientists were central in the making of the boundaries of the humanities. They were actually working on the boundaries of the natural sciences, which at the time were still not separated from the other disciplines of the philosophy faculties of German universities, neither symbolically nor socially. The boundaries of the humanities came about through the process of making the boundaries of the natural sciences. All this took place in a specific historical context, defined by specific interests, distributions of resources and other contingencies. Most importantly, it is during the nineteenth century that "…philosophy transforms from a self-proclaimed epistemological leading discipline to a mere worldly discipline that reflects on other disciplines. Simultaneously, the natural sciences ascend to a self-confident group of disciplines that is unified by shared methods and a common epistemology" (Hamann 2018:

[5] Sources: OECD. 2015. "Frascati Manual 2015." Månsson, Helle, and Christian Raunkjær Ott. 2011. "Forskning og udvikling i den offentlige sektor: Kvalitetshåndbog." Statistics Denmark.

30). During the 1860s, the symbolic boundaries of the natural sciences institutionalized in natural science faculties across German states. The first natural science faculty in Denmark was established at the University of Copenhagen already in 1850.

Delimitation of the humanities

These discussions show that there is not a correct way to delimit the humanities or any other major field of science. There is no correct answer to the question: which disciplines should be included in the humanities? Of course, some disciplines are almost always included in the humanities, for example languages, literature and philosophy. But others are sometimes included in the humanities and sometimes in other major fields of science. Studies of the humanities can use different delimitations. Based on an interest in studying research practices in disciplines on the border between the humanities and other major fields of science, Mapping the Dynamics of Humanities adopted a broad delimitation. It was decided to include all disciplines that at the time of the study were placed within a humanities faculty at one or more Danish universities (see list of universities in table 0.1). Psychology, for example, was included in the humanities because it was placed within the humanities faculty at Aalborg University at the time of the study. Empirically, this means that psychology researchers from all universities are included in the survey, regardless of faculty, and psychology dissertations from all universities are included in the coding of PhD dissertations, regardless of faculty.

Table 0.1: Danish universities in 2012

Aalborg University (established 1974)
Aarhus University (established 1928)
Copenhagen Business School (established 1917)
IT University of Copenhagen (established 1999)
Roskilde University (established 1972)
Technical University of Denmark (established 1829)
University of Copenhagen (established 1479)
University of Southern Denmark (established 1966)

Note: Aalborg University, Aarhus University, Roskilde University, University of Copenhagen and University of Southern Denmark were all established as universities in the legal sense. Copenhagen Business School, IT University of Copenhagen and Technical University of Denmark were established as so-called high schools (*højskoler*) and were converted to universities in the legal sense later.

Humanities research takes place in different institutional contexts. In Denmark, most research takes place at universities, but there are also considerable research activities at academies, museums, libraries and archives. Art and architecture research, for example, also takes place at academies of fine art, schools of architecture and various art museums, music research at music academies, archeological research at historical museums, historical research at museums, libraries and archives, and organizational research at business schools. The survey includes researchers from all these institutions. A complete list of institutions in the survey can be found in the appendix of paper 1. We have excluded Technical University of Denmark and IT University of Copenhagen because humanities research activities are negligible there. Not all institutions in the survey are authorized to award the PhD degree. This means that paper 2 and 3, which are based on the coding of PhD dissertations, include fewer institutions. The papers include Aalborg University, Aarhus School of Architecture, Aarhus School of Business (merged with Aarhus University in 2007), Aarhus University, Copenhagen Business School, Danish School of Education (merged with Aarhus University in 2007), Roskilde University, Royal Danish Academy of Fine Arts, University of Copenhagen and University of Southern Denmark.

Disciplinary categories

Different names are used to refer to the same disciplines, and it is not always obvious which disciplinary categories to use. To give an example, the study of literature goes by literary history (*litteraturhistorie*) at Aarhus University, and literary science (*litteraturvidenskab*) at University of Copenhagen and University of Southern Denmark. It is not obvious which category to use. The dissertation and Mapping the Dynamics of Humanities are based on the disciplinary categories from national research statistics. The list of humanities disciplines was constructed in four steps. In the first step, we included the ten categories that were also included in the humanities in the national research statistics: 1) History, 2) Archeology, 3) Languages and philology, 4) Literature, 5) Philosophy and history of ideas, 6) Theology, 7) Music and theatre, 8) Art and architecture, 9) Film and media studies and 10) Humanities (other). In the second step, we included three categories that were included in the social sciences: 11) Sociology, anthropology and ethnography, 12) Educational studies and 13) Psychology. In the third step, we added three new categories: 14) Humanities (interdisciplinary), 15) Linguistics and 16) Religious studies. And in the fourth step, we 17) replaced Sociology with Ethnology. That resulted in a list of 16 disciplinary categories (table 0.2).

Table 0.2: Disciplinary categories in the dissertation
Anthropology, ethnography and ethnology
Archeology
Art and architecture
Educational studies
Film and media studies
History
Humanities (interdisciplinary)
Humanities (other)
Languages and philology
Linguistics
Literature
Music and theatre
Philosophy and history of ideas
Psychology
Religious studies
Theology

My co-authors and I made different adaptations to the list in the individual papers of the dissertation. In paper 1, we only made one adaptation, dividing the category Philosophy and history of ideas into two separate categories. In paper 2 and 3, we made several adaptations. First, we added the category Organizational studies to the list. The category covers PhD dissertations defended at Aarhus School of Business and Copenhagen Business School. These dissertations are characterized by combining theories and methods from business economics, on the one hand, and different humanities disciplines, on the other. The category was added to the list early in the research process, during the collection of the empirical material. In paper 3, we made two additional adaptations in order to test hypotheses about publication language in the humanities. We divided the category Archeology into two separate categories; Archeology (Nordic) and Archeology (other), and we divided the category Languages and literature, which corresponds to Languages and philology in table 0.2, into two separate categories; Languages and literature (Nordic) and Languages and literature (other). These adaptations were made later in the research process, during the analysis of the empirical material. Limitations related to the use of the disciplinary categories from national research statistics are discussed in the concluding remarks of paper 2.

Literature review

Overview

Like the Mapping the Dynamics of Humanities research project, the dissertation does not address a specific literature. The individual papers of the dissertation address and contribute to different sociological and historical literatures on the humanities. Paper 1, for example, addresses and contributes to the sociological literature on the everyday practices of humanities and social science researchers. Paper 2 addresses and contributes to historical and sociological literatures on the humanities as a major field of science. And paper 3 addresses the historical sociology of Europeanization and the humanities and social sciences. The three literatures are more or less disconnected, indicated by the infrequency of cross-literature references. Because of the disconnectedness of the literatures, I review them one by one. Reviewing the literatures, I summarize the state of the art and describe the contribution of the dissertation. I review the following literatures: 1) the sociological literature on the everyday practices of humanities and social science researchers, 2) the historical and sociological literatures on the humanities as a major field of science and 3) the historical sociology of Europeanization and the humanities and social sciences.

Everyday practices of humanities and social science researchers

Paper 1 addresses and contributes to the growing sociological literature on the everyday practices of humanities and social science researchers. Sociological studies of research practices, including laboratory studies, have focused primarily on the practices of researchers in the medical science, natural sciences and engineering (Camic et al. 2011). Recently, sociologists of science have taken increasing interest in the practices of researchers in the humanities and social sciences. They have studied the diverse practices through which research is produced, evaluated, communicated and applied. The most significant contributions to the literature have been made on the question of research evaluation (Guetzkow et al. 2004; Hamann 2016; Hamann and Zimmer 2017; Lamont 2009; Lamont and Huutoniemi 2011; Mallard et al. 2009; Ochsner et al. 2016: Tsay et al. 2003). An interview study of evaluation in multidisciplinary funding panels in the humanities and social sciences, for example, shows how panel members handle differences in epistemological style between disciplines (Lamont 2009: 53-106). However, several questions have yet to be answered: "[o]f what does the repertoire of social knowledge practices consist? In what ways does this repertoire resemble or differ from

the repertoires of practices involved in the making of natural scientific knowledge? What are the salient dimensions along which social knowledge practices vary?" (Camic et al. 2011: 29). Paper 1 contributes to the literature by addressing these questions.

The humanities as a major field of science

Paper 2 addresses and contributes to the historical and sociological literature on the humanities as a major field of science. The historical literature on the humanities has focused on individual researchers, laboratories, disciplines or other relatively small groups of researchers in the humanities (Bod et al. 2016). Recently, historians of science have taken increasing interest in the humanities as a major field of science on a par with the natural sciences (Bod et al. 2010; Bod et al. 2012; Bod et al 2014). Recent studies identify methodological similarities between humanities disciplines across historical contexts (Bod 2013; Turner 2014). The sociology of science literature has also focused on individual researchers, laboratories, disciplines or other relatively small groups of researchers (Whitley 1984: 1-9). Recently, sociologists of science have taken increasing interest in major fields of science, including the humanities and social sciences (Camic et al. 2011). Recent studies identify both differences and similarities in research *evaluation* across humanities and social science disciplines within specific historical contexts (Guetzkow et al. 2004; Lamont 2009; Lamont and Huutoniemi 2011; Mallard et al. 2011; Tsay et al. 2003). Paper 2 contributes to the literature with a longitudinal analysis of research *production* across disciplines in a specific historical context. The comparative perspective on disciplines allows for the identification of general as well as discipline-specific tendencies. Among other things, the paper identifies a general increase in the use of observations and qualitative interviews in the humanities between the late-twentieth and early-twenty-first century.

Europeanization and the humanities and social sciences

Paper 3 addresses and contributes to the historical sociology of the Europeanization of the humanities and the social sciences. The literature can be divided into studies of the institutionalization of European fields of humanities and social science research, on the one hand, and studies of the participation of humanities and social science researchers in European fields of research, on the other. A recent edited volume, for example, contains studies of both the institutionalization of global and regional fields and the participation of researchers in these fields (Heilbron et al. 2018). And a journal special issue contains studies of Europeanization

specifically (Heilbron et al. 2017). Significant contributions have been made on the question of transnational research collaboration in Europe (Gingras and Heilbron 2009; Heilbron and Gingras 2018; Mosbah-Natanson and Gingras 2014). These studies, which are based on international bibliographic databases, show that transnational research collaboration in the humanities and social sciences has increased in Europe since the 1980s, and that collaboration with researchers outside Europe has increased at the same pace as collaboration with other European researchers. Because of biases toward specific disciplines and languages in the international bibliographic databases, there are no studies of changes in publication language in the humanities in the context of Europeanization. Paper 3 contributes to the literature with a study of publication language in the context of Europeanization.

Other literatures

Two other literatures on the humanities need mention even though they are not addressed directly by the individual papers of the dissertation. First, there is a growing sociological and historical literature on the institutionalization of humanities and social science disciplines (Fleck et al. 2019). Recent studies have made more systematic recordings of various indicators of institutionalization, allowing for comparisons across disciplinary boundaries and national borders (Fleck et al. 2016). The historical outlines of the humanities in Denmark in paper 1 and 3 are based on a similar recording of indicators. Second, there is a growing sociological and historical literature on the epistemic assumptions underlying humanities and social science research. A recent edited volume, for example, describes the prevalence of positivism in the human sciences in the United States in twentieth century, and presents epistemic alternatives from the European tradition (Steinmetz 2005). Paper 1 touches upon the question of positivism through the analysis of epistemic research aims. Besides that, however, the dissertation does not address the literature on epistemic assumptions. The e-mail questionnaire survey and the coding of PhD dissertations are not particularly suited for such analysis. A more detailed and interpretive approach would be better.

Central concepts

Scientific disciplines

The most central concept of the dissertation is that of scientific disciplines. I use the concept in the delimitation of the research object and as an analytical tool in the analyses of the individual

papers. The concept of scientific disciplines is not just central to the dissertation. It is central to most sociological and historical studies of science. That is not surprising since "…disciplines are in the academic world what nation-states are in the political realm, or firms and corporations in the field of business" (Heilbron 2004: 25). Disciplines, such as physics, sociology and history, are visible everywhere in the scientific world: university departments, professional associations, conferences, journals, etc. Despite this, there has been very limited theorizing on the concept of scientific disciplines in the sociology and history of science (Heilbron 2004: 25). Sociologists and historians of science have studied single or multiple disciplines without necessarily providing a definition of the concept. In the following, I provide a definition of scientific disciplines, and discuss various processes that shape research practices in disciplinary contexts.

Scientific disciplines, such as physics, sociology and history, can be defined as relatively autonomous social fields where individual or groups of researchers compete over recognition from each other (Bourdieu 2004: 62-70). Disciplines can be seen as relatively autonomous in a social as well as in a cultural sense. Relative social autonomy refers to the fact that it is the members of a discipline who decide who can participate in the activities of that field. Such decisions are continuously made in hiring committees, journal review boards, funding panels and other places. As an example, physicists (not sociologists or historians) decide who is appointed at physics departments. Disciplines differ according their degree of social autonomy. Some are closed, others cracked or wide open. Relative cultural autonomy refers to the fact that it is the members of a discipline who decide what counts as a scientific contribution in that field. Every discipline, that is, is "...able to command its own tools, techniques, methodologies, intellectual orientations, and problematics" (Thackray and Merton 1972: 473). As an example, sociologists (not physicists or historians) decide which papers are published in sociology journals. Disciplines also differ according to their degree of cultural autonomy. In more applied fields, for example, demand and pressure from non-scientific fields are likely to shape choices of research topics, theories, methods, etc.

Competition over recognition

Competition over recognition or reputation is probably the most important driver of scientific change (Bourdieu 1975: 19). The relative autonomy of disciplines means that competition usually plays out between individual or groups of researchers within disciplinary boundaries. Physicists compete with other physicists, sociologists with other sociologists, historians with

other historians, and so on. Younger generations of researchers, for example, challenge older generations (Abbott 2001: 21). Such generational competition can give rise to new styles of research when younger generations introduce new theories and methods or combine existing ones in new ways. Outright scientific revolutions are uncommon because the contribution of research products depends on their usefulness to other researchers, including older generations (Whitley 1984: 25-29). Competitive processes are central to the theory of the reward system of science (Merton 1968; Merton 1988) and the theory of scientific revolutions (Kuhn 1962). In contrast to these theories, which focus on strategies oriented toward the accumulation of recognition or reputation in fields with a shared definition of what counts as a scientific contribution, the theory of relatively autonomous social fields focuses on strategies oriented toward a redefinition of what counts as a scientific contribution in the first place (Bourdieu 1975: 30).

That researchers compete with one another does not imply that they are motivated by a conscious interest in the accumulation of recognition or reputation. In fact, researchers can be motivated by purely scientific interests and non-consciously follow strategies oriented toward the accumulation of recognition or reputation (Bourdieu 1975: 21). The concept of habitus refers to such a system of largely non-conscious dispositions for certain strategies (Bourdieu 1990). The scientific habitus, the system of largely non-conscious dispositions for strategies oriented toward the accumulation of scientific recognition or reputation, is acquired throughout the educational and professional trajectory of the individual researcher (Bourdieu 2004: 42). Disputes over priority in scientific discovery illustrate how scientific interests are correlated with such dispositions (Merton 1957). If researchers were driven by purely scientific interests, priority in scientific discovery would not be the object of dispute. The individual papers of the dissertation do not address the question of competition directly. However, they are all based on the assumption that research practices are shaped in important ways by competition. Paper 2, for example, is based on the assumption that methodological change is driven by competition between individual or groups of researchers.

Borrowings of concepts and methods

While disciplines are relatively closed to outside researchers, they are by no means closed to outside research practices. Researchers constantly borrow concepts and methods from other disicplines. Borrowings can be motivated by different things, including 1) research questions that cannot be answered using the available concepts and methods in the borrowing discipline,

2) competition within the borrowing discipline, and 3) demand or pressure from non-scientific fields, for example from the institutions that fund research (Steinmetz 2017: 481). The recent diffusion of concepts and methods from discourse analysis is one example of theoretical and methodological borrowings in the humanities and social sciences. Concepts and methods can also be applied in new disciplinary contexts when researchers move from one discipline to another. The concept of role-hybridization refers to the process whereby a moving researcher applies concepts and methods from the home discipline to the destination discipline (Ben-David and Collins 1966). The formation of Danish experimental psychology, for example, can be seen as a combination of role-hybridization, where methods from engineering were applied to problems in philosophy, and borrowing processes, where concepts and methods were imported from German experimental psychology (From et al. 1980).

The described processes lead to theoretical and methodological overlaps between disciplines in the humanities and the other major fields of science (Abbott 2005: 250). Paper 1 addresses the problem of overlaps between disciplines through a study of research production and communication in the humanities in Denmark in the early-twenty-first century. The paper uses the concept of style to describe differences in research production and communication between disciplines. Research styles are defined by combinations of multiple practices. They constitute ideal types, and the individual disciplines differ in their degree of correspondence with the ideal-typical research styles (for a definition of ideal types see Weber 1904). Paper 2 addresses the problems of borrowings and overlaps between disciplines through a study of changes in research production in the humanities in Denmark in the late-twentieth and early-twenty-first century. It shows that specific types of empirical material and analytical methods diffused across disciplinary boundaries during the observed period from 1992 to 2012. As an example, the paper shows that anthropological methodology based on participant observation and qualitative interviewing was borrowed by researchers from multiple disciplines, including disciplines that before the 1990s did not have observations or qualitative interviews in their repertoires. The paper also discusses the diffusion of concepts from discourse analysis across humanities and social science disciplines.

Transnational regionalization and globalization

The dissertation is about the humanities in Denmark. However, research is not limited by national borders, and humanities researchers in Denmark also participate in regional and global fields of research. The concepts of transnational regionalization and globalization refer to the

process whereby regional and global fields of research form (Heilbron 2008). Among other things, these processes are supported by the establishment of international professional associations, conferences and journals. The first steps toward the formation of global fields of humanities and social science research were taken in the late-nineteenth and early-twentieth century, where researchers from different disciplines established the first international associations and conferences (Boncourt 2017). The first steps toward the formation of regional fields of humanities and social science research were taken in the mid-twentieth century, where regional associations, conferences and journals were established. In Latin America, this happened in the 1950s (Beigel 2014). In Europe, the first regional institutions were established in the 1960s. However, the process of transnational regionalization in Europe accelerated in the 1990s and 2000s (Heilbron et al. 2018). In addition to associations, conferences and journals, the establishment of regional funding institutions has been central in this process, which has given rise to increasing levels of transnational collaboration, communication and mobility of individual researchers within Europe (König 2017; Schögler and König 2017).

Transnational collaboration, communication and mobility of individual researchers is not new. It took place long before the establishment of international institutions. In the early-nineteenth century, for example, Danish archeologists translated their publications into both German and English and distributed them to researchers, universities and libraries across northern Europe (Eskildsen 2019: 263). What is new is the increasing levels of transnational collaboration, communication and mobility of individual researchers in twentieth and early-twenty-first century. Paper 1 and 2 touch upon the question of regional and global research fields in the humanities by discussing the import of scientific concepts and methods from the scientific centers England, France, Germany and the United States. Paper 3 addresses the question from a different perspective by studying the responses of humanities researchers in Denmark to increasing levels of transnational collaboration, communication and mobility in the context of Europeanization in the late-twentieth and early-twenty-first century. The paper shows that choices of publication language changed between 1992 and 2012 such that English gradually replaced Danish as the primary publication language. The paper also shows that specific disciplines did not or were slower to adopt English as a publication language. The differences between disciplines can be explained by differences in audience structure, a point that is elaborated in the paper.

Demand and pressure from non-scientific fields

So far, I have discussed processes within or in relatively close proximity to the scientific field. However, research practices are also shaped by processes outside the scientific field, including demand and pressure from non-scientific fields. Research practices are shaped by demand and pressure from state actors, religious actors, economic actors and many others (Steinmetz 2017: 482-486). Social science researchers, for example, have responded to a demand for policy-relevant research from various public authorities since the mid-twentieth century (Adler-Nissen and Kropp 2015; Adler-Nissen and Kropp 2016; Wagner et al. 1991a; Wagner et al. 1991b). Among others, economists, political scientists, psychologists (included in the humanities in the dissertation) and sociologists have supplied public authorities with (primarily quantitative) research. Apart from our own study from 2018, there are, to my knowledge, no comprehensive studies of research supply and demand in the humanities. The 2018 study, which is based on an e-mail questionnaire survey among humanities researchers in Denmark, shows that humanities researchers produce research to actors from 1) education, health and social work, 2) public authorities, 3) private organizations, 4) cultural and religious institutions and 5) private companies. Which actors they supply with research and how they do it vary significantly across disciplinary boundaries (Johansson et al. 2018).

From different perspectives, paper 1 and 3 both touch upon the question of demand and pressure from non-scientific fields. Paper 1 shows how collaboration with and communication to actors from non-scientific fields, specifically public authorities and private companies, are distributed across humanities disciplines in Denmark in the early-twenty-first century. It also shows that researchers collaborating with and communicating to public authorities and private companies study certain topics and use certain types of empirical material and analytical methods. The combination of all these practices constitutes a distinguishable applied style of humanities research. The analysis suggests that the applied style was introduced by new disciplines in the late-twentieth century. Paper 3 shows how specific humanities disciplines in Denmark have supplied actors from various non-scientific fields with research on national history, culture and language in the nineteenth, twentieth and twenty-first century. The paper points to the involvement of these disciplines in the production of research on national history, culture and language in order to explain disciplinary differences in publication language in the late-twentieth and early-twenty-first century. The concept of audience structure is central here. Basically, publication language, in particular, and research communication, in general, depend

on whether research is produced to a scientific or a non-scientific audience, a national or an international audience, etc.

Empirical material

Overview

The individual papers of the dissertation are based on three groups of empirical material, including 1) the e-mail questionnaire survey, 2) the coding of PhD dissertations and 3) a wide range of documentary sources. The exploratory analysis of research production and communication in paper 1 is based on responses from the e-mail questionnaire survey. The paper also contains a historical outline of the formation of humanities disciplines in Denmark, drawing on various documentary sources. The analysis of changes in choices of empirical material and analytical methods in paper 2 is based on the coding of PhD dissertations. The paper does not draw on additional empirical material. Finally, the analysis of changes in publication language in paper 3 is also based on the coding of PhD dissertations. The paper contains a historical outline of specific humanities disciplines and their involvement in cultural nation-building, specifically the production of national history, culture and language. The historical outline draws extensively on documentary sources. The use of documentary sources was not part of the project description of Mapping the Dynamics of Humanities. However, I found it necessary to introduce documentary sources in order to support the interpretation of findings from the statistical analyses.

Empirically, the dissertation distinguishes itself from specific traditions in history and sociology of science. Historical studies of science are usually based on scientific products, for example canonical works, documentary sources or a combination of the two. As an example, a recent global history of the humanities is based on the most canonical works from different fields of research (Bod 2013). Another example is a study of the institutional context of the humanities in Denmark in the nineteenth century, which is based on various documentary sources (Møller Jørgensen 2000). Sociological studies of science are empirically more diverse. While some sociological studies are also based on canonical works and documentary sources, anthropological methods, including observation and qualitative interviewing, have become increasingly popular since the emergence of laboratory studies. A recent study of research evaluation in the humanities and social sciences, for example, is based on qualitative interviews with panelists from various funding institutions (Lamont 2009). Sociologists of science also

use bibliographic data in studies of the humanities. Recent studies of transnational research collaboration, for example, are based on data from the international bibliographic database Web of Science (Heilbron et al. 2018). In the following, I describe the empirical material of the dissertation and Mapping the Dynamics of Humanities, and discuss the possibilities and limitations of the material compared to other types of material.

E-mail questionnaire survey

In order to study the diverse practices through which research is produced and communicated in the humanities, we decided to carry out an e-mail questionnaire survey among researchers at Danish universities, museums, libraries and archives. Compared to close readings of scientific products or documentary sources, participant observation and qualitative interviewing, surveys make it possible to study relatively large populations. And a certain population size is preferred when analyzing distributions of variables, for example research production and communication. Of course, it is not possible to achieve the same level of empirical detail in a survey as in close reading, participant observation or qualitative interviewing. Compared to bibliographic analyses, a relatively high level of empirical detail can be achieved in surveys. Bibliographic databases do (usually) not contain information about choices of theory, empirical material, analytical methods and many of the other things we wanted to look at. They do, however, contain information on very large populations. In the end, we found that the e-mail questionnaire survey struck a nice balance between population size and empirical detail. The survey was inspired by and reused a series of questions from two surveys of the social sciences in Denmark (Andersen 1997a; Andersen 1997b; Andersen 2001; Kropp 2011a; Kropp 2011b; Kropp 2013).

In 2013, we distributed the questionnaire to N=3,647 researchers from 43 university departments and 13 museums, libraries and archives under the Ministry of Culture (see complete list in paper 1 appendix). We retrieved contact information on university researchers from university websites. Contact information on museum, library and archive researchers was provided by the museums, libraries and archives. By 2013, many Danish universities were organized around multidisciplinary departments. Aalborg University and Roskilde University were founded with multidisciplinary departments in the 1970s. And other universities merged monodisciplinary departments during the 2000s and 2010s. As a consequence, we were not able to identify the discipline of individual researchers based on their department. We decided to distribute the questionnaire to all researchers from departments where we expected to find

some (n≥5) researchers in humanities disciplines. We based these expectations on descriptions from department websites. This means that we do not know the size of the target population, that is, the population of researchers from humanities disicplines. Because we do not know the size of the target population, we do not know the response rate for the target population. We only know that the reported response is likely to underestimate the response rate for the target population.

A total of n=1,171 researchers (32 percent) responded to the survey. But response rates vary across institutions. Not surprisingly, response rates are relatively low at institutions with all multidisciplinary departments, including Aalborg University, Copenhagen Business School and Roskilde university (between 21 and 31 percent), and relatively high at universities with some monodisciplinary departments, including Aarhus University, University of Copenhagen and University of Southern Denmark (between 32 and 38 percent). Response rates are highest for museums, libraries and archives under the Ministry of Culture (41 percent). That is probably because these institutions provided the contact information on researchers themselves, and the lists, therefore, did not contain individuals that were irrelevant for the study. Response rates also vary across formal positions, which we were able to retrieve from most department websites. They are relatively low for research assistants (28 percent), and relatively high for other positions (between 31 and 35 percent). These numbers suggest that responses could be biased toward research in disciplinary contexts, on the one hand, and research by senior researchers, on the other. Among other things, the questionnaire contained a series of questions related to choices of research topics, empirical material, analytical methods, epistemic research aims, practical research aims, publication strategies and collaborative activities.

PhD dissertations

In order to study possible changes in choices of empirical material, analytical methods and publications language in the late-twentieth and early-twenty-first century, we decided to carry out a categorized coding of humanities PhD dissertations. As mentioned, using scientific products as the empirical basis of analysis is common in sociological and historical studies of science. Using PhD dissertations instead of, for example, canonical scientific works makes selection of the empirical material more transparent and, as a consequence, contributes to the reliability of the study. We simply selected dissertations from humanities disciplines (see table 0.2) defended at Danish universities between 1992 and 2012. Only the discipline criterion introduces some subjectivity on the part of the researcher. The study of publication language

in the humanities could also have been based on bibliographic databases. However, national and international bibliographic databases have certain limitations, which are described in detail in paper 3. Basically, the national bibliographic database in Denmark does not cover the period of interest, which is the late-twentieth and early-twenty-first century. International databases do cover the period of interest, but are biased toward certain disciplines and languages, which makes them unsuited for studying publication language in the humanities in Denmark.

Because there is no national catalog or bibliography of PhD dissertations in Denmark, we had to combine multiple sources in order to construct a complete bibliography of PhD dissertations from humanities disciplines. These sources include individual university library catalogs, university annual reports, university websites and the national bibliographic database. We included all dissertations from these sources that were available for home or library use with the Royal Danish Library. The resulting bibliography contains n=1,958 dissertations, which corresponds to 75 percent of the estimated total. Availability varies across the observed period, with slightly better availability toward the end of the period. It is particularly low in 1992 (25 percent) and 1997 (49 percent), which gives rise to some fluctuation in time series in the beginning of the period. The remaining years, availability varies between 64 and 91 percent. Availability also varies across institutions. The University of Southern Denmark has the lowest availability with 45 percent, and the Danish School of Education the highest availability with 97 percent. Availability varies between 61 and 90 percent across the remaining institutions. There is no obvious pattern in the differences, which most likely reflect more or less contingent differences in archiving practices. However, the differences could result in a bias toward research in, for example, educational studies.

The number of dissertations in the bibliography increases over the observed period, with 250 dissertations the first seven years of observation, 781 the next and 927 the last (see table 2.2 in paper 2). There are two reasons why our numbers do not correspond to numbers from national research statistics, which show a stable production of humanities dissertations (table 0.1). The increase in the number of dissertations in the bibliography reflects 1) the slightly better availability of dissertations toward the end of the period, and 2) relatively large increases in individual disciplines that are not included in the humanities in national research statistics, such educational studies and psychology. That being said, there seems to be a small increase in the number of dissertations between 1992 and 2012. Looking at the distribution on institutions, the University of Copenhagen accounts for 44 percent of the dissertations, Aarhus

University for 17 percent, Copenhagen Business School for 9 percent, Roskilde University for 7, University of Southern Denmark for 6 and the remaining institutions for less than 5 percent each. All n=1,958 dissertations were reserved with the Royal Danish Library and underwent a systematic reading, which means that the individual dissertations were scanned for specific information, which was recorded in a database. Among other things, we recorded types of empirical material, analytical methods and language. The systematic reading makes it possible to statistically analyze cross-sectional distributions and longitudinal tendencies.

Documentary sources

Apart from some individual subprojects, the use of documentary sources was not part of the original project description of Mapping the Dynamics of Humanities. However, in order to support the interpretation of findings from the statistical analyses of survey responses and PhD dissertations, I found it necessary to introduce additional empirical material. I use documentary sources in the historical outline of the humanities in Denmark in paper 1, the historical outline of specific humanities disciplines and cultural nation-building in Denmark in paper 3 and the historical outline of the Europeanization of the humanities in Denmark also in paper 3. Paper 2 does not contain a historical outline. The paper is very descriptive and offers only a preliminary interpretation of the findings. The historical outlines in paper 1 and 3 support the interpretation of the findings of the statistical analyses. Why, for example, did English replace Danish as the primary publication language in the humanities in Denmark in the early-twenty-first century? And why did researchers from specific humanities disciplines continue to write in Danish when everybody else started to write in English? Without the historical outlines, answers to these questions would only be speculative. In the following, I describe the documentary sources used in the historical outlines in paper 1 and 3.

The outline in paper 1 describes the institutionalization of humanities disciplines in Denmark from the early-nineteenth century to the late-twentieth century. It approximates the period of formation of individual disciplines by tracing their institutionalization in positions, laboratories, departments, educational programs, professional associations, conferences and journals. The outline is based on a combination of historical and sociological studies of the humanities, on the one hand, and documentary sources from different institutions, on the other. Among the central sources are the comprehensive history of the University of Copenhagen from 1479 to 1979 (Johansen 1979a; Johansen 1979b; Johansen 1980; Johansen and Grane 1992), a record of teachers at the University of Copenhagen from 1537 to 1977 (Slottved 1978)

and the yearbooks of the University of Copenhagen from 1793 to 2006. In addition to these and similar sources from other universities, the outline is based on information from the Danish encyclopedia (Lund 1994-2001) and the Danish biographical encyclopedia (Bech 1979-1984). Finally, the outline is based on editorials and other sections of disciplinary journals. Information on professional associations, conferences and journals is usually easier to find in journals than other places. When studies of the humanities or different documentary sources disagree, I consult the more primary of the sources.

Paper 3 contains two historical outlines: one of specific humanities disciplines and their involvement in cultural nation-building in Denmark from the early-nineteenth century to the present, and one on the Europeanization of the humanities in Denmark from the late-twentieth century to the present. The two outlines are based on different documentary sources. The historical outline of specific humanities disciplines is based on the same documentary sources as the outline in paper 1. In contrast to paper 1, which focuses on the institutionalization of humanities disciplines, the outline in paper 3 focuses on the communication of humanities research. The historical outline of the Europeanization of the humanities in Denmark is based different sources, including policy documents from various political institutions at the regional (European) and national (Danish) levels. As described in paper 3, the European Commission and the individual national governments in the European Union have been central actors in the Europeanization of the humanities and the other major fields of science. Documents published by these institutions constitute the larger share of the documentary sources used in the historical outline. However, I also draw on administrative data on research funding by the European Commission (see table C.1 in paper 3 appendix). Because policies formulated at the European level are put into practice at the national level, orders and acts by the Danish governments are important sources.

Notes on terminology

The humanities and the sciences

A few notes on the terminology of the dissertation are in order. Most importantly, I should note that many languages, including Danish, French and German, do not distinguish as clearly between the humanities and the sciences as English (Bod et al. 2016: 4). In Danish, for example, *humanvidenskaberne* is a common term for the humanities. In German, *Geisteswissenschaften* is a common term. And in French, *sciences humaines* is a common term. In all three languages,

common terms for the humanities translate to human (or spiritual) sciences. The same goes for the individual disciplines. In Danish, *sprogvidenskab* is a common term for the study of language. In German, *Sprachwissenschaft* is a common term. And in French, *sciences du langage* is a common term. In all three languages, the terms translate to language science. The very clear-cut distinction in English between the humanities and the sciences suggests that the humanities and the sciences are somehow worlds apart. This dissertation is based on a different assumption. It is based on the assumption that history, languages, philosophy, biology, chemistry and physics all constitute disciplines in the sense of relatively autonomous social fields. There are stylistic differences between humanities and natural science research, but research takes place in similar contexts.

I use the term researcher to refer to the practitioners of humanities research. At Danish universities, most humanities researchers are also teachers. But since the dissertation is about research practices rather than teaching practices, I find it reasonable to use the term researcher. It is, however, important to be aware of terminological differences between languages. In the English language it is common to use the terms *scholar* and *scholarship* when referring to the practitioners and practices of the humanities, and *scientist* and *science* when referring to the practitioners and practices of the natural sciences (Smith 2016: 364). Like the distinction between the humanities and the sciences, this distinction between scholars and scholarship, on the one hand, and scientists and science, on the other, suggests that the humanities and the sciences are somehow worlds apart. In Danish and many other languages, there is not a clear-cut distinction. In Danish, the terms *forsker* and *forskning* are used irrespectively of major field of science. In German, *Forscher* and *Forschung* are used irrespectively. And in French, *chercheur* and *recherché* are used irrespectively. In all these languages, that is, the terms researcher and research are used to refer to the practitioners and practices of research in all major fields of science, including the humanities.

From studia humanitatis to the humanities

As to my knowledge, the earliest use of the term humanities (*humanitas*) is in the writings of Marcus Tullius Cicero (Christiansen 2018). However, the term was popularized in the Italian Renaissance, where it was used to refer to the emerging classical studies. The studies in classical Latin and Greek literature were called *studia humanitatis* or *studia humaniora,* and the teachers were called *humanistae*. The studies, which usually included grammar, rhetoric, poetry and history, were gradually integrated in primary, secondary, professional and

university education during the fourteenth century (Kristeller 1944: 355). The teachers of *studia humanitatis* or *studia humaniora* became the founding fathers of classical philology. They were "…professional rhetoricians, heirs and successors of the medieval rhetoricians, who developed the belief, then new and modern, that the best way to achieve eloquence was to imitate classical models, and who thus were driven to study the classics and to found classical philology" (Kristeller 1944: 353). When the University of Copenhagen was founded in the late-fifteenth century, the study of classical languages and literature was called Latin philology, Greek philology and Oriental philology. There is nothing suggesting that the term humanities was used in the Danish context or other European contexts at the time.

In Denmark, the first humanities faculty was established at the newly-founded Aarhus University in the early 1930s (Christiansen and Møller Jørgensen 2004). At the University of Copenhagen, research and education in humanities disciplines continued to take place within the Faculty of Philosophy. In the early 1970s, the Faculty of Philosophy was renamed the Faculty of Humanities. During the 1960s and 1970s, three new universities were founded in Denmark, including the University of Southern Denmark, Roskilde University and Aalborg University. Roskilde University is not organized around faculties, but both the University of Southern Denmark and Aalborg University have humanities faculties. Ironically, Aarhus University is the only Danish university with faculties that does not use the term humanities anymore. In 2011, the Faculty of Arts was established at Aarhus University by merging the Faculty of Humanities and the Faculty of Theology. All this shows that it is actually an anachronism to talk about the humanities in Denmark before the twentieth century. However, for communication reasons, I use the term anyway. This means that when I refer to the humanities in the nineteenth century, I am really referring to the group of disciplines that we today call the humanities.

Reading guidelines

Disposition

The individual papers of the dissertation can be read in any order, but there is a logic to the given order. Paper 1 contains a historical outline of the humanities in Denmark from the early-nineteenth century to the early-twenty-first century and a cross-sectional analysis of various practices involved in the production and communication of humanities research in Denmark in the early-twenty-first century. Together, the historical outline and the cross-sectional analysis

provide a useful overview of the humanities in Denmark, and help the interpretation of findings from the analyses in the other papers. The exploratory analysis in paper 1 also engenders a series of questions about research production and communication in the humanities, and seems like a good way to start the dissertation. Paper 2 and 3 zoom in on specific practices involved in the production and communication of humanities research, and follow changes in these practices from the late-twentieth to the early-twenty-first century. They describe some of the processes leading up to the situation in the humanities in Denmark described in paper 1. In the conclusion of the dissertation, I summarize the most important findings from the three papers, consider their generalizability beyond the Danish case and discuss important limitations of the analyses. I also indicate directions for future research on the humanities.

Citations, references and appendices

I follow standard practices for citations, references and appendices. Citations contain author name, publication year and usually also page number (quote citations always contain page number). References are found at the end of each paper and at the end of the introduction and the conclusion of the dissertation. Appendices are also found at the end of each paper and at the end of the introduction and the conclusion. I use citations and footnotes for different purposes. Citations are used when referring to secondary sources, including sociological, historical or other studies of the humanities, and footnotes are used when referring to primary sources, including documentary sources. The documentary sources used in the historical outlines in paper 1 and 3, for example, are described in footnotes at the end of each section. The historical outlines are based on a wide range of documentary sources, and the same information is usually found in and validated by multiple sources. That makes it unpractical to use in-line citations. In sociology and history of science, the same texts are sometimes treated both as secondary and primary sources. Using in-line citations for secondary and footnotes for primary sources makes it clear if the texts in question is treated as a secondary or as a primary source.

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Appendix A

Table A.1: PhD students enrolled at Danish universities on major field of science, 1996-2012

	Medical sciences		Engineering		Natural sciences		Social sciences		Humanities		Agricultural sciences	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
1996	272	3.77%	216	3.54%	229	4.72%	159	4.57%	173	5.59%	69	3.09%
1997	246	3.41%	220	3.61%	239	4.93%	129	3.71%	146	4.72%	80	3.59%
1998	259	3.59%	230	3.77%	225	4.64%	137	3.94%	178	5.75%	100	4.48%
1999	266	3.69%	245	4.02%	223	4.60%	163	4.69%	187	6.04%	127	5.70%
2000	290	4.02%	246	4.03%	204	4.21%	151	4.34%	195	6.30%	85	3.81%
2001	284	3.94%	200	3.28%	225	4.64%	168	4.83%	163	5.26%	85	3.81%
2002	270	3.74%	242	3.97%	179	3.69%	149	4.28%	153	4.94%	66	2.96%
2003	292	4.05%	252	4.13%	221	4.56%	164	4.72%	168	5.43%	113	5.07%
2004	383	5.31%	300	4.92%	211	4.35%	139	4.00%	162	5.23%	93	4.17%
2005	429	5.95%	269	4.41%	237	4.89%	188	5.41%	151	4.88%	116	5.20%
2006	486	6.74%	295	4.84%	275	5.67%	214	6.15%	148	4.78%	73	3.27%
2007	481	6.67%	438	7.18%	358	7.38%	240	6.90%	222	7.17%	134	6.01%
2008	555	7.69%	540	8.86%	378	7.80%	244	7.02%	217	7.01%	174	7.80%
2009	594	8.23%	546	8.95%	358	7.38%	275	7.91%	203	6.56%	272	12.20%
2010	746	10.34%	634	10.40%	441	9.10%	302	8.68%	234	7.56%	267	11.97%
2011	671	9.30%	593	9.72%	440	9.08%	302	8.68%	211	6.82%	192	8.61%
2012	691	9.58%	632	10.36%	405	8.35%	354	10.18%	185	5.98%	184	8.25%
Entire period	7,215	100.00%	6,098	100.00%	4,848	100.00%	3,478	100.00%	3,096	100.00%	2,230	100.00%

Source: Statistics Denmark, PHD1.

PAPER 1. A MATTER OF STYLE: RESEARCH PRODUCTION AND COMMUNICATION ACROSS HUMANITIES DISCIPLINES IN DENMARK IN THE EARLY-TWENTY-FIRST CENTURY

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Abstract

The general expansion of the fields of research and higher education in Europe in the second half of the twentieth century provided the conditions of possibility for disciplinary formation in the humanities and the other major fields of science. New disciplines formed, sometimes through upgrading of non-scientific practices, sometimes from differentiation or combination of existing disciplines. Did the new disciplines introduce new styles of research? Adopt existing ones? Or both? In the present paper, we explore the practices through which research is produced and communicated in the humanities in the early-twenty-first century. Based on an e-mail questionnaire survey among researchers at Danish universities, museums, libraries and archives, we identify four styles of humanities research: 1) a quantitative, 2) a qualitative, 3) a basic and, more surprisingly perhaps, 4) an applied style. The applied style is defined, among other things, by research communication to and collaboration with public authorities and private companies. The analysis suggests that the applied style of humanities research was introduced by new disciplines, including anthropology, educational studies, film and media studies and, to some extent, interdisciplinary fields of study. Another new discipline, history of ideas, adopted existing and more basic styles of humanities research.

Keywords

Sociology of science; humanities; research styles; applied research; e-mail questionnaire survey; multiple correspondence analysis

Introduction

The general expansion of the fields of research and higher education in the second half of the twentieth century provided the conditions of possibility for disciplinary formation in the humanities and the other major fields of science. New disciplines formed, sometimes through upgrading of non-scientific practices, sometimes through differentiation or combination of existing disciplines. One of the most significant changes in the disciplinary space was the emergence of new interdisciplinary fields of research, including area studies, cultural studies, educational studies, film and media studies, gender studies and science and technology studies. The field of cultural studies, for example, formed in Britain during the 1960s and 1970s, where researchers from multiple humanities and social science disciplines joined forces in the study of popular culture. During the 1980s and 1990s, cultural studies was imported by researchers from other national contexts, for example from Denmark. The contemporary disciplinary space is more diverse than ever. But what about research? Did the new disciplines introduce new styles of research? Did they adopt existing ones? Or both? Based on an e-mail questionnaire survey among researchers at universities, museums, libraries and archives in Denmark, we explore the practices involved in research production and communication in the humanities in the early-twenty-first century.

There is a growing sociological literature on the everyday practices through which research is produced, communicated, evaluated and applied. As an example, sociologists of science have studied the production and communication of research in laboratory contexts (Knorr Cetina 1995). These studies, which are usually referred to as laboratory studies, have contributed to the sociology of science literature by shifting the focus from the products of research to the production of research. However, sociologists have "…yet to investigate the practices involved in the making of social knowledge to anything approaching the extent that it has examined the practices in use in the physical and biological sciences…" (Camic et al. 2011: 11). Recently, there has been more interest among sociologists of science in the practices of humanities and social science researchers. An edited volume from 2011, for example, contains a series of empirical studies of the practices involved in the production, evaluation and application of social knowledge, including, but not limited to, humanities and social science knowledge (Camic et al. 2011). There is a promising line of research on the practices involved in research evaluation in the humanities and social sciences (Guetzkow et al. 2004; Hamann 2016; Hamann and Zimmer 2017; Lamont 2009; Lamont and Huutoniemi 2011;

Mallard et al. 2009; Tsay et al. 2003). There is relatively little research on the practices involved in research production and communication.

Based on n=1,171 responses from an e-mail questionnaire survey among researchers at Danish universities, museums, libraries and archives, we explore the practices involved in research production and communication across humanities disciplines in the early-twenty-first century. Using multiple correspondence analysis, we identify four styles of research, defined by specific combinations of research topics, theories, empirical materials, analytical methods or techniques, epistemic research aims, practical research aims, publication strategies and collaborative activities. These styles include 1) a quantitative, 2) a qualitative, 3) a basic and, more surprisingly perhaps, 4) an applied style. The applied style is defined by research communication to and collaboration with non-scientific actors, specifically public authorities and private companies. It is also defined by the use of diverse types of empirical material and analytical methods or techniques. Based on a structured data analysis, we argue that the applied style of humanities research was introduced by new disciplines, including anthropology, educational studies, film and media studies and, to some extent, interdisciplinary fields of study. Another new discipline, history of ideas, adopted existing and more basic styles of humanities research. We discuss these findings in the light of the situation in the Danish and European fields of research and higher education in the late-twentieth and early-twenty-first century.

The contribution of the paper is both empirical and theoretical. Empirically, the paper contributes with an exploratory analysis of research production and communication in the humanities in the early-twenty-first century. Despite limitations of the empirical material, the analysis provides an answer to some of the questions posed by sociologists of the humanities and social sciences: "[o]f what does the repertoire of social knowledge practices consist? In what ways does this repertoire resemble or differ from the repertoires of practices involved in the making of natural scientific knowledge? What are the salient dimensions along which social knowledge practices vary?" (Camic et al. 2011: 29). Theoretically, the paper contributes to the literature by engendering a series of questions and hypotheses about the relationship between research production and communication in the humanities in particular and in the scientific field in general. How can it be, for example, that specific types of empirical material and analytical methods or techniques are used in applied humanities research? Are they considered more useful for applied purposes than other materials and methods? And if so, by whom? The

researchers? Or the institutions to whose demand they respond? These and other questions call for new studies of research practices in the humanities and the other major fields of science.

In the first section of the paper, we introduce the concepts of discipline and research style, and provide a historical outline of the humanities in Denmark. In the second section, we describe the e-mail questionnaire survey and the basics of multiple correspondence analysis. In the third section, we present the findings of the analysis. We provide a detailed description of the identified research styles and the distribution of disciplines in the space of research styles. We discuss the findings in the light of the situation in the Danish and European scientific fields in the late-twentieth and early-twenty-first century. In the concluding remarks, we summarize the most important findings, consider their generalizability beyond the Danish case and discuss some important limitations of the analysis.

Disciplines, research styles and the humanities in Denmark

Disciplines

In contemporary Denmark and Europe, most research takes place in the context of disciplines, such as physics, sociology, history, etc. Even interdisciplinary research, which is promoted by the European Commission, national governments, universities, individual researchers and others, "…depends on the disciplinary structure it seeks to transcend, and the most common form of interdisciplinary work proceeds by combining existing disciplines…" (Heilbron 2004: 23). Disciplines can be defined as social fields where individual researchers or groups of researchers compete over recognition (Bourdieu 2004: 62-70). Disciplinary fields are relatively autonomous, which means that competition usually plays out within disciplinary boundaries. Physicists, for example, compete with other physicists, sociologists with other sociologists and historians with other historians. Disciplines in the sense of relatively autonomous social fields have existed since the late-eighteenth century where the first natural science disciplines started to form. The first humanities disciplines started to form in the early-nineteenth century. Historically, three modes of discipline-formation can be distinguished: 1) upgrading of non-scientific practices, 2) differentiation of existing disciplines, and 3) combination of existing disciplines (Heilbron 2004: 35-36). The contemporary space of disciplines is the product of contingent conjunctures of all three modes of discipline-formation processes between the late-eighteenth and the early-twenty-first century.

Disciplines are institutionalized in laboratories, university departments, educational programs, professional associations, conferences and journals (Bourdieu 2004: 62-70). Many of these institutions exist at national, regional and global levels. In the humanities, for example, European (regional) associations, conferences and journals were established in the second half of the twentieth century as part of a wider process of Europeanization (Boncourt 2017; Heilbron et al. 2017). The establishment of disciplinary institutions can be used as indicators in studies of discipline formation (Fleck et al. 2016). One advantage of using institutional indicators is that it allows for comparison across disciplinary boundaries and national borders. Exactly which indicators to use, however, depends on the discipline and the national context in question. In the United States, for example, disciplinary university departments were central in the formation of disciplines in the late-nineteenth and early-twentieth century (Abbott 2002: 205-230). In Europe, however, university departments were not established until the mid-twentieth century. Needless to say, they cannot be used as indicators of discipline formation in Europe before the mid-twentieth century. The institutionalization of disciplines can be an extremely slow process, extending over decades and even centuries (Fleck et al. 2019: 7).

Research styles

While disciplines are relatively closed to outside researchers, they are by no means closed to outside research practices. Research practices circulate across disciplinary boundaries in all major fields of science. However, humanities and social science disciplines are probably more open to practices from other disciplines than natural science disciplines, for example (Abbott 2001: 121-153). A recent example is the circulation of practices related to discourse analysis. With a few exceptions, all humanities disciplines today have some tradition of discourse analysis. With continuous circulation of research practices across disciplinary boundaries, "[t]here is no sharp separation between academic disciplines, which often overlap in methods, theories, and subject matters and which often differ more in style and heritage than in substance" (Abbott 2005: 250). Because of these overlaps, we find the concept of research style fitting for the exploratory analysis of research production and communication across humanities disciplines. Research styles are defined by combinations of practices, not by individual practices. This means that disciplines can overlap on some practices and still display stylistic differences. In this paper, we focus on the following practices: choices of research topics, theories, empirical material, analytical methods, epistemic research aims, practical research aims, publication strategies and collaborative activities.

The concept of style originates in the art history of the late-nineteenth century, where it was used to describe periods in the European history of art, such as Renaissance and Baroque (Holly 1985: 46-68). In the twentieth century, the concept became popular among historians and sociologists, who adapted it to the study of science. These studies can be divided into local and general histories (or sociologies) of science (Gayon 1999: 234-242). In local history of science, the concept of style is used to describe the practices of specific groups of researchers, for example laboratories, disciplines and countries. Fleck's study of thought styles in the syphilis research community is a well-known example of the local history of science (1935). More recent examples include studies of epistemological styles across humanities and social science disciplines (Mallard et al. 2009), styles of thought in sociological research (Abend 2006) and styles of causal thought in ethnographic research (Abend et al. 2013). In general history of science, the concept is used to describe practices that are not restricted to specific laboratories, disciplines or countries. Crombie's study of styles of scientific thinking in the European tradition is a well-known example of the general history of science (1994). The focus on disciplines places our study in the category of local history (or sociology) of science.

The humanities in Denmark

In Denmark, the first humanities disciplines started to form in the first half of the nineteenth century. In the late eighteenth century, the responsibility for the training of secondary-education teachers had been moved from the Faculty of Theology to the Faculty of Philosophy at the University of Copenhagen. The new demand for teachers provided the conditions of possibility for disciplinary formation within the Faculty of Philosophy. Classical philology and philosophy had been taught at the university since the fifteenth century, and history since the seventeenth century. During the first half of the nineteenth century, professors of classical philology, philosophy and history started doing research on a more regular basis, and their research started to take place in the context of disciplines, indicated by the establishment of disciplinary associations and journals. As an example, the Danish Historical Association was established in 1839, and the *Danish Journal of History* in 1840. During the nineteenth century, new disciplines were added to the disciplinary space. Modern philology, most importantly Nordic languages and literature, formed through a process of differentiation in classical philology, archeology through the upgrading of practices in the context of the Royal Commission for the Preservation of Antiquities, and art history through the upgrading of practices in the context of The Royal Danish Academy of Fine Arts.

A continuous expansion of the fields of research and higher education provided the conditions of possibility for discipline formation in the early-twentieth century. During that period, psychology, linguistics, musicology and religious studies started to form relatively autonomous social fields. The formation of psychology can be described as a process of role hybridization, where researchers moving from one discipline (engineering) to another (philosophy) applied the methods of the home discipline to the problems of the destination discipline (Ben-David and Collins 1966). Linguistics formed through a differentiation process in philology, where a small group of philologists started practicing comparative history of language, most importantly Indo-European languages. In addition to psychology and linguistics, musicology and religious studies also started to take form in the early-twentieth century. Music-historical research had been carried out at the University of Copenhagen since the 1890s. The discipline institutionalized in educational programs in the 1910s. And by the late 1930s, it was the third largest program at the Faculty of Philosophy (the largest being history and modern philology). Religious studies formed through a combination of different disciplines, including theology and classical (oriental) philology. The discipline institutionalized in educational programs at the University of Copenhagen in the 1910s.

The growth of the student population in the second half of the twentieth century and the correlated expansion of the fields of research and higher education provided the conditions of possibility for a new wave of disciplinary formation in the humanities. History of ideas formed during the 1960s through a combination of existing disciplines within the Faculty of Humanities at Aarhus University. And anthropology and ethnology formed during the 1960s and 1970s when they practically replaced the disciplines of ethnography and folklore, which had existed since the nineteenth century. One of the most significant changes in the space of disciplines was the emergence of new interdisciplinary fields of research, including area studies, cultural studies, educational studies, film and media studies, gender studies and science and technology studies. Education (in the widest possible sense of the word) had been studied for a long time by philosophers and psychologists. However, with the increasing demand for research on public education in the second half of the twentieth century, educational studies started to form a relatively autonomous social field. Like the other interdisciplinary fields of study, educational studies formed through a combination of existing humanities and social science disciplines. Now, the question is if the new disciplines introduced new styles of

research? Adopt existing ones? Or both? In the following, we explore the practices involved in research production and communication in the humanities in the earl-twenty-first century.[6]

E-mail questionnaire survey and multiple correspondence analysis

E-mail questionnaire survey

The exploratory analysis of research styles is based on responses from an e-mail questionnaire survey among researchers at Danish universities, museums, libraries and archives. Forty-three university departments and 13 museums, libraries and archives under the Ministry of Culture are included in the survey (see appendix B.2). The questionnaire was distributed to N=3,647 individuals of which n=1,171 responded. Only some Danish universities are organized around disciplinary departments, which makes it difficult to determine the disciplinary membership of individual researchers. Some universities were established with multidisciplinary departments, and others merged monodisciplinary departments into multidisciplinary ones during the 2000s and 2010s. In order to get the questionnaire to the target population we distributed it to all researchers at departments where we expected to find some ($n \geq 5$) researchers in humanities disciplines. Our expectations were based on information from department websites. Because we do not know the size of the target population (researchers from humanities disciplines), we do not know the response rate for the target population. We do know, however, that the reported response rate of 32 percent is likely to underestimate the response rate for the target population. The unknown response rate for the target population is an important limitation of the analysis, which means that conclusions are only provisional.

[6] The historical outline of the humanities in Denmark is based on a wide range of primary and secondary sources. The primary sources include university yearbooks, journals, etc. The secondary sources include university histories, discipline histories and various encyclopedia. The most important source is a four-volume history of the Faculty of Philosophy at the University of Copenhagen (Johansen 1979a; Johansen 1979b; Johansen 1980; Johansen and Grane 1992).

Table 1.1: Distribution of researchers on institution, discipline and position

	Frequency	Percent
Institution		
Copenhagen Business School	57	4.87%
Ministry of Culture	57	4.87%
Roskilde University	98	8.37%
University of Copenhagen	268	22.89%
University of Southern Denmark	148	12.64%
Aalborg University	155	13.24%
Aarhus University	388	33.13%
Total	1,171	100.00%
Discipline		
Anthropology, ethnography and ethnology	95	8.11%
Archeology	39	3.33%
Art and architecture	38	3.25%
Educational studies	83	7.09%
Film and media studies	41	3.50%
History	111	9.48%
History of ideas	21	1.79%
Humanities (interdisciplinary)*	249	21.26%
Humanities (other)**	49	4.18%
Languages and philology	99	8.45%
Linguistics	54	4.61%
Literature	69	5.89%
Music and theatre	22	1.88%
Philosophy	61	5.21%
Psychology	85	7.26%
Religious studies	21	1.79%
Theology	34	2.90%
Total	1,171	100.00%
Position		
Research assistant	50	4.27%
PhD student	309	26.39%
PhD student (industrial)	15	1.28%
Assistant professor/postdoc	185	15.80%
Associate professor/senior researcher	414	35.35%
Professor/docent	136	11.61%
Other	62	5.29%
Total	1,171	100.00%

Notes: * The category “humanities (interdisciplinary)” covers researchers who did not identify with one specific discipline in the questionnaire. ** The category “humanities (other)” covers researchers whose disciplinary belonging we were unable to determine based on their responses.

Respondents are grouped on 17 disciplinary categories (table 1.1). For reasons of comparability, we used the categories from national research statistics. Anthropology, ethnology and ethnography, Educational studies and Psychology are grouped with the social sciences in national statistics. We decided to include them anyway because these disciplines are also grouped with the humanities, for example in the faculty structures of Danish universities. We divided History of ideas and Philosophy into two separate categories, added the category Humanities (interdisciplinary), which covers interdisciplinary fields of research, including area studies, cultural studies, gender studies, and science and technology studies, and added the category Humanities (other), which covers researchers whose disciplinary membership we were unable to determine based on their responses. Twenty-one percent of respondents place their research in the category Humanities (interdisciplinary), which makes it the largest category of the study. The relative size of the other disciplinary categories varies between 2 and 9 percent. Ninety-five percent of respondents are employed at one of the six universities in the study, and 5 percent at museums, libraries and archives. Senior researchers (postdocs and assistant, associate and full professors) make up 63 percent of respondents, junior researchers (research assistants and PhD students) 32 percent, and others 5 percent.

Response rates vary across institutions. They are relatively low (between 21 and 31 percent) for universities with multidisciplinary departments, including Copenhagen Business School, Roskilde University and Aalborg University, higher (between 32 and 38 percent) for universities with some monodisciplinary departments, including Aarhus University, University of Copenhagen and University of Southern Denmark, and highest (41 percent) for museums, libraries and archives. Response rates also vary across formal positions. They are relatively low (28 percent) for research assistants, and relatively high (between 31 and 35 percent) for other positions. These numbers suggest that the responses could be biased toward research in disciplinary contexts, on the one hand, and research by senior researchers, on the other. The questionnaire contained a series of questions related to choices of research topic, empirical materials, analytical methods or techniques, epistemic research aims, practical research aims, publication strategies and collaborative activities.[7] Needless to say, responses are subject to differential interpretations of the questions, for example the questions about epistemic and practical research aims, which use ordinal response categories corresponding to different levels

[7] We reused a series of questions from two surveys of the social science in Denmark (Andersen 1997; Kropp 2011).

of importance placed on individual aims. For that reason, we focus the analysis on extreme categories.

Multiple correspondence analysis

We use multiple correspondence analysis (MCA) to analyze the responses from the e-mail questionnaire survey. Designed for multivariate correlation, MCA makes it possible to identify systems of practices involved in the production and communication of humanities research (humanities research styles). Briefly, MCA produces two clouds of points: a cloud of individuals (respondents) and a cloud of categories (responses). In the cloud of individuals, the geometric distance between two individuals is based on their response patterns, such that individuals with similar response patterns are close to each other, and individuals with dissimilar response patterns are far from each other. Individuals choosing frequent categories are located toward the center of the cloud, and individuals choosing infrequent categories are located toward the periphery (Le Roux and Rouanet 2010: 34-36). In the cloud of categories, the distance between two categories is based on the individuals choosing those categories, such that categories with many individuals in common are close to each other, and categories with few or no individuals in common are far from each other. Frequent categories are located toward the center of the cloud, and infrequent categories are located toward the periphery (Le Roux and Rouanet 2010: 37-39).

The present analysis is based on 44 variables related to choices of research topics, theories, empirical materials, analytical methods or techniques, epistemic research aims, practical research aims, publication strategies and collaborative activities (see list of variables below). Categories (responses) with relative frequencies lower than 5 percent are passive, which means they do not contribute to the structure of the cloud (Le Roux and Rouanet 2004: 203-213). We have included frequency distributions, coordinates and contributions of active categories, and frequency distributions and coordinates of passive categories in the appendix (table B.1 and B.2). The analysis of the cloud of categories is based on an interpretation of the axes explaining the most variance of the cloud. The variance explained by an axis a is called the eigenvalue, and is denoted λ_a. For each axis, the interpretation "amounts to finding out what is similar, on the one hand, between all the elements figuring on the right of the origin and, on the other hand, between all that is written on the left; and expressing with conciseness and precision the contrast (or opposition) between the two extremes" (Benzécri 1992: 405). In contrast to cluster analysis, where differences between clusters are discrete, correspondence

analysis produces continuous differences between axis extremes. That is consistent with our understanding of research styles.

- *Research topics*: one categorical variable with six categories: 1) a) cultures and cultural production, b) environment, space and population, c) markets, individuals and institutions, d) the human mind and its complexity, e) the social world, diversity, institutions and values and f) the study of the human past.[8]
- *Theories*: three categorical variables with unequal number of categories: 1) one, multiple or no theoretical influences, 2) nationality of main theoretical influence and 3) year of birth of main theoretical influence.[9]
- *Empirical material*: Eleven ordinal variables with three categories corresponding to the extent to which researchers use the various forms of empirical material: 1) fictional literature (including religious texts), 2) scientific literature and theory, 3) experimental data, 4) quantitative data, 5) fieldwork, interviews and observations, 6) documents, 7) electronic media, 8) architecture and design, 9) audio and video recordings, 10) art and 11) artifacts and material relics.
- *Analytical methods or techniques*: Eight ordinal variables with three categories corresponding to the extent to which researchers use the various analytical methods or techniques: 1) conceptual analysis, 2) categorized coding, 3) description, 4) source criticism, 5) theory construction and synthesizing, 6) philological text processing, 7) text and discourse analysis and 8) statistics.
- *Epistemic research aims*: Six ordinal variables with three categories corresponding to the emphasis placed on the various aims: 1) identify causal relationships and trends, 2) identify universal laws, 3) formulate universal claims or arguments, 4) identify unique characteristics, 5) describe facts and events, 6) understand culture and symbols.
- *Practical research aims*: Four ordinal variables with three categories corresponding to the emphasis placed on the various aims: 1) make critical analysis, 2) improve decision

[8] Research topics are based on answers to an open question in the questionnaire. We grouped answers on topics and subtopics using the European Research Council's list of research topics for grant applications. Source: European Research Council. February 10, 2015. "ERC Frontier Research Grants Information for applicants to the Advanced Grant 2015 Call."

[9] Nationality and year of birth of theoretical influences are based on answers to an open question about the most influential theoretician. We discuss the coding of theory in more detail below.

making for public authorities, 3) preserve traditions and cultures, 4) improve intercultural understanding.

- *Publication strategies*: six binary (dummy) variables and two categorical variables with three categories each: 1) monographs and edited volumes, 2) journal articles, 3) reviews in journals, 4) reports, 5) conference papers and posters, 6) newspaper articles and commentaries, 7) other publication types, 8) only co-authored, only single-authored or both, 9) read/write Danish/English only, read other languages or read/write other languages.
- *Collaborative activities*: two categorical variables with five and three categories, respectively: 1) municipalities and regions, state organizations, private organizations and companies, other collaborations or other scholars only, 2) other disciplines, only own discipline or work alone.

The space of research styles

Selection of axes for interpretation

The selection of axes for interpretation can be based on a decrease in the eigenvalues of the axes, or on the cumulated modified rates of the axes. Based on the decrease in eigenvalues, it would be reasonable to interpret the first two axes. Based on the cumulated modified rate it would be reasonable to interpret the first four axes, which together account for 81 percent of the total variance of the cloud (figure 1.1 and table 1.2). However, our interpretation of axis 3 and 4 did not reveal any stylistic differences that were not already found on axis 1 and 2. For that reason, we have selected the first two axes for interpretation. Together, they account for 64 percent of the total variance of the cloud, measured as the cumulated modified rate (table 1.2). The interpretation of the axes is restricted to categories contributing above or just below average to the variance of the individual axes (Benzécri 1992: 405). The contribution of a category to an axis is equal to the product of the relative weight of that category and the squared coordinate, divided by the eigenvalue of the axis (Le Roux and Rouanet 2010: 29). What this means is that we restrict the interpretation to relatively large differences in research production and communication practices between relatively large groups of researchers.

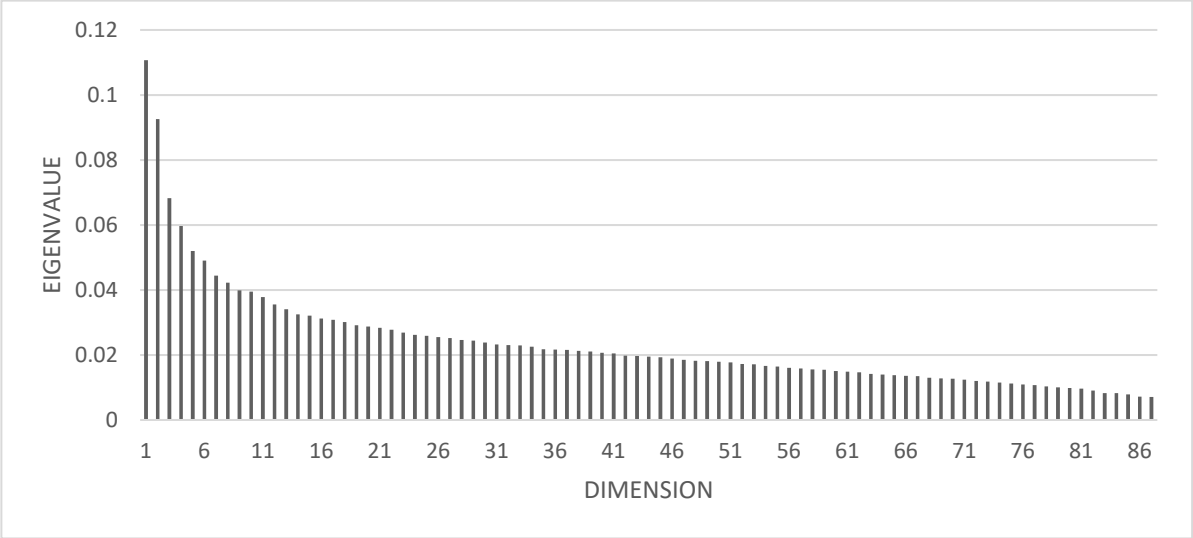

Figure 1.1: Eigenvalues all axes

Table 1.2: Eigenvalues, modified rates and cumulated modified rates of axis 1-4

	Eigenvalue	Modified rate	Cumulated modified rate
Axis 1	0.111	39.40%	39.40%
Axis 2	0.093	24.70%	64.10%
Axis 3	0.068	10.30%	74.40%
Axis 4	0.060	6.70%	81.10%

Axis 1 (λ=0.1108): Quantitative vs. qualitative

The first dimension differentiates a quantitative style of humanities research (on the positive side of the axis) and a qualitative style of humanities research (on the negative side of the axis). The variables contributing most to the variance of the axis relate to choices of empirical material, analytical methods/techniques and publication strategies. However, differences on axis 1 are defined by multiple practices, including choices research topics, empirical material, analytical methods/techniques, epistemic research aims, practical research aims, publication strategies and collaborative activities. Only theoretical position does not contribute significantly to the variance of the axis. Figure 1.2 shows the K_q=48 categories contributing above average to axis 1. Together they account for 83 percent of the variance of the axis. The categories pertain to empirical material (K_q=13), analytical methods/techniques (K_q=13), publication strategies (K_q=12), practical research aims (K_q=4), research topics (K_q=3), epistemic research aims (K_q=2) and collaborative activities (K_q=1).

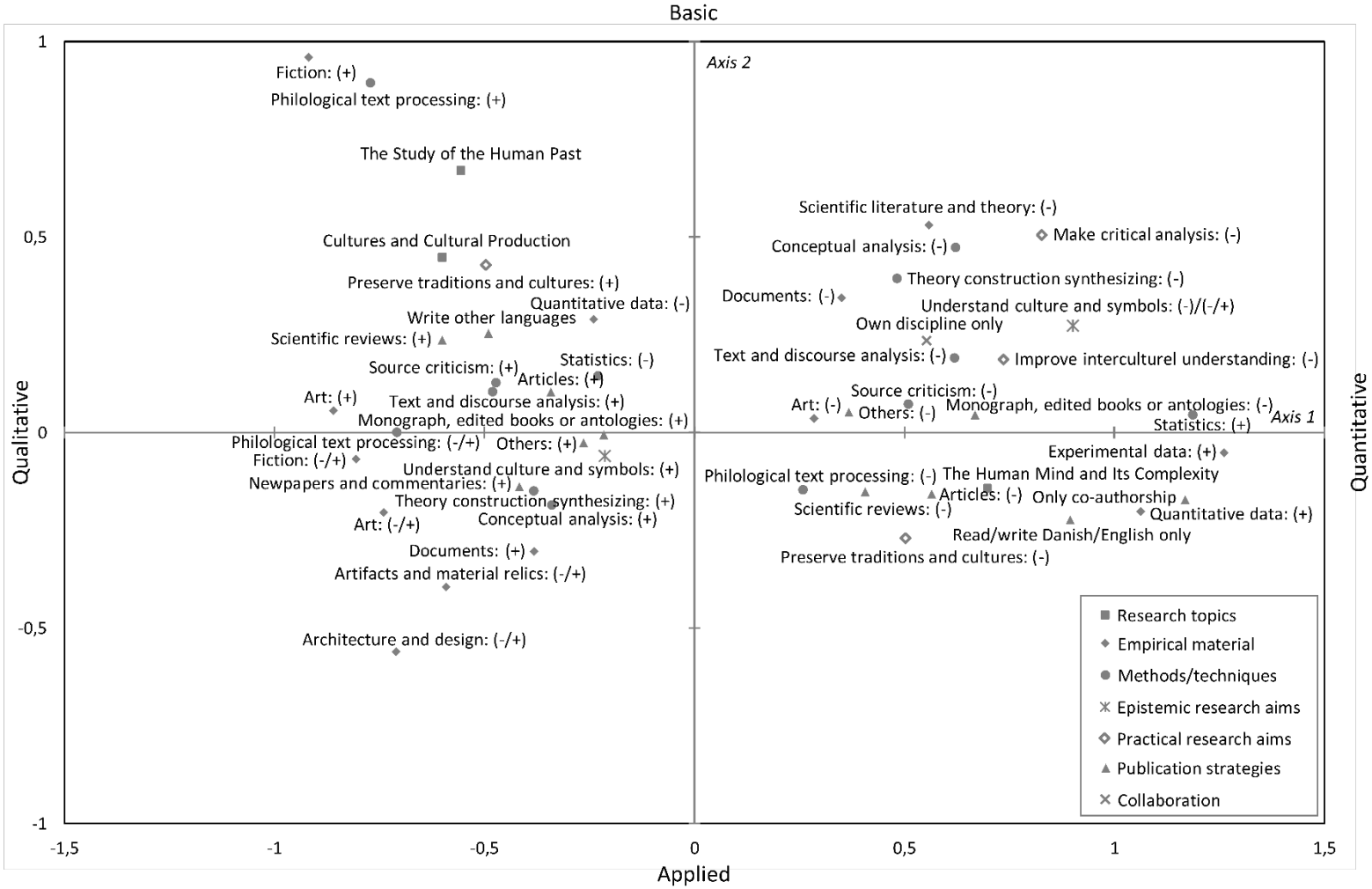

Figure 1.2: Categories contributing above average to axis 1 in the space of research styles

Note: In the case of empirical material and analytical methods/techniques, (-) refers to little or no use, (-/+) to moderate use and (+) to extensive use. In the case of epistemic and practical research aims, (-) refers to no or little importance, (-/+) to some importance and (+) to great importance.

The quantitative style of humanities research (on the positive side of axis 1) studies the human mind and its complexity, including human development and its disorders, comparative and social cognition, logic, language learning and language processing. In many ways, the production of quantitative humanities research corresponds to production of natural scientific research. Empirically, it is defined by extensive use of experimental and quantitative data, and by little or no use of documents, art and scientific literature/theory. Analytically, it is defined by extensive use of statistics, and by little or no use of multiple other analytical methods or techniques, including text/discourse analysis, source criticism, conceptual analysis, theory construction/synthesizing and philological text processing. Understanding of culture/symbols is considered an unimportant epistemic research aim. The communication of quantitative humanities research also corresponds to the communication of natural scientific research. As an example, critical analysis and improvement of intercultural understanding are considered unimportant practical research aims. The publication strategy is characterized by homogeneity of language (reading and writing only in Danish and English), homogeneity of publication types (publishing only journal articles) and co-authored publications. Collaboration usually takes place within disciplinary boundaries.

The qualitative research style (on the negative side of axis 1) studies the human past and culture/cultural production. The production of qualitative humanities research differs from the production of quantitative humanities research and natural scientific research. Empirically, it is defined by extensive or moderate use of cultural products as the empirical basis of analysis, including fictional literature, documents, art, music, architecture/design and artifacts/material relics, and little or no use of quantitative data. Analytically, the qualitative style is defined by extensive or moderate use of methods or techniques associated with more interpretive forms of analysis, including text/discourse analysis, source criticism, philological text processing, conceptual analysis and theory construction/synthesizing, and little or no use of statistics. Understanding of culture/symbols is considered an important epistemic research aim. The qualitative style also differs from quantitative humanities research in terms of communication. Improvement of intercultural understanding and preservation of culture/traditions are, for example, both considered important practical research aims. The publication strategy is characterized by heterogeneity of language (reading and writing in Danish, English and other languages) and heterogeneity of publication types (publishing journal articles, reviews,

newspaper articles and commentaries). The heterogeneity of publication types suggests that research is communicated to both scientific and non-scientific audiences.

Axis 2 (λ=0.0929): Basic vs. applied

The second dimension differentiates a basic style of humanities research (on the positive style of axis 2) and an applied style of humanities research (on the negative side of axis 2). The variables contributing most to the variance of the axis relate to choices of empirical material, analytical methods or techniques and publication strategies. However, differences on axis 2 are defined by multiple practices, including choices of research topics, theoretical position, empirical material, analytical methods/techniques, practical research aims, publication strategies and collaborative activities. Only choices of epistemic research aims do not define differences between the basic and the applied style of research. Figure 1.3 shows the K_q=42 categories contributing above average to axis 2. Together they account for 77.88 percent of the variance of the axis. They pertain to empirical material (K_q=15), analytical methods/techniques (K_q=11), research topics (K_q=4), publication strategies (K_q=4), collaborative activities (K_q=4), practical research aims (K_q=3) and theoretical position (K_q=1).

The basic style of humanities research (on the positive side of axis 2) studies the human past and culture/cultural production. The production of basic humanities research corresponds to the classical-philological research tradition that was adopted by most humanities disciplines in the nineteenth century (Turner 2014). Theoretically, it is defined by the absence of specific theoretical influences. Empirically, it is defined by extensive use of fictional literature, and little or no use of documents, quantitative data, audio/video and interviews/observations. Analytically, the basic style is defined by extensive use of philological text processing, and little or no use of description and theory construction/synthesizing. The search for universal laws is considered an important epistemic research aim. The analysis shows that basic humanities research is communicated to the public rather than to specific non-scientific actors. Preserving traditions and cultures is considered an important practical research aim, and improving decision-making for public authorities an unimportant practical research aim. Publishing is characterized by homogeneity of publication types (not publishing conference papers/posters or reports) and by single-authored publications. Our interpretation of is further supported by the absence of collaboration with non-scientific actors.

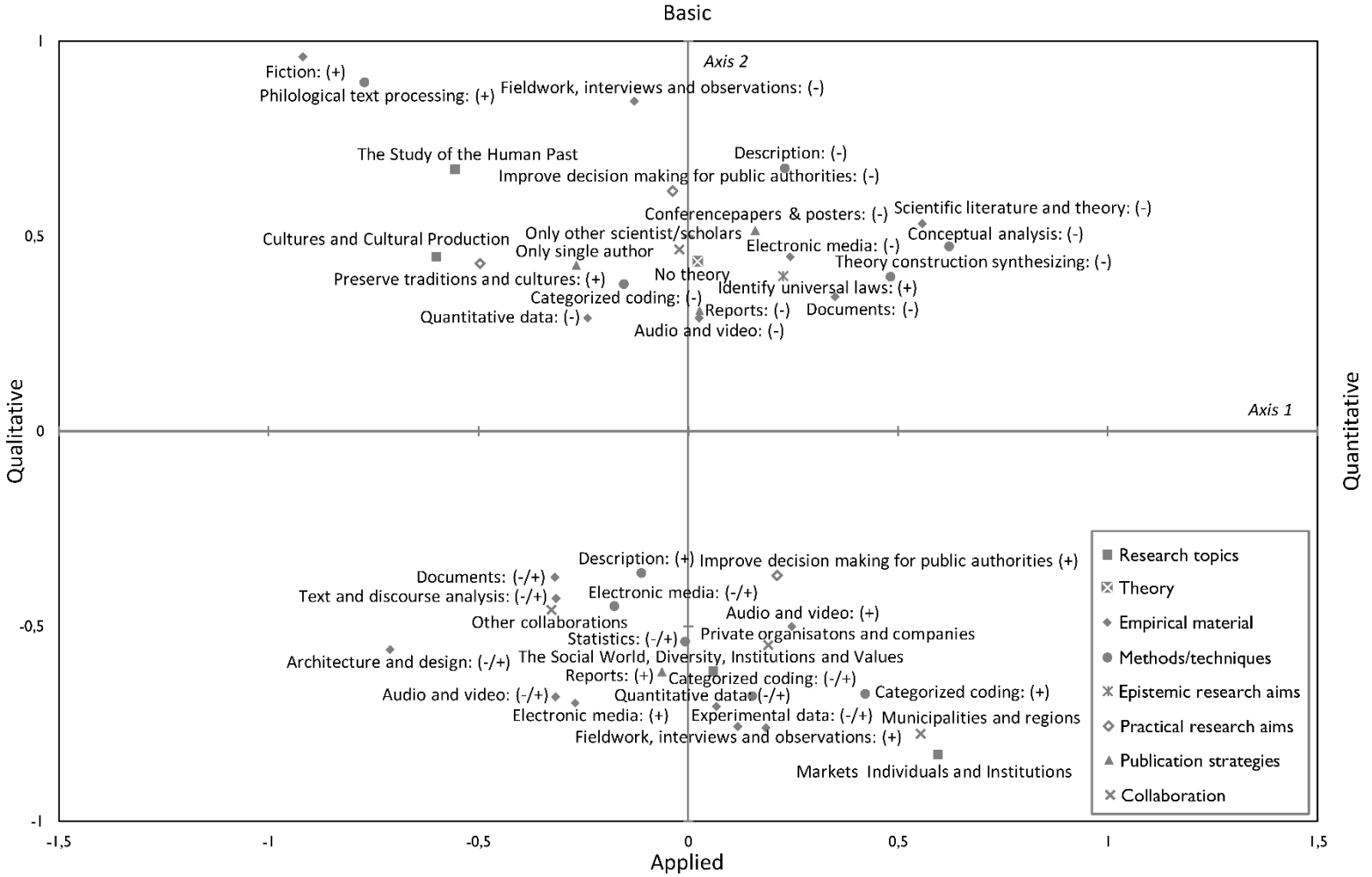

Figure 1.3: Categories contributing above average to axis 2 in the space of research styles

Note: In the case of empirical material and analytical methods/techniques, (-) refers to little or no use, (-/+) to moderate use and (+) to extensive use. In the case of epistemic and practical research aims, (-) refers to no or little importance, (-/+) to some importance and (+) to great importance.

The applied style of humanities research (on the negative side of axis 2) studies the social world, markets, institutions and values. In contrast to the production of basic humanities research, the production of applied humanities research is extremely diverse, using multiple types of empirical material and analytical methods or techniques. In many ways, the production of applied humanities research corresponds to the production of social science research. Empirically, the style is defined by extensive or moderate use of interviews/observations, quantitative data, electronic media, audio/video, experimental data, architecture/design and documents. It is also defined by the absence of materials traditionally used in humanities research, including art, artifacts and fictional literature. Analytically, it is defined by extensive or moderate use of categorized coding, description, statistics and text/discourse analysis. In contrast to the communication of basic humanities research, the communication of applied humanities research is characterized by the importance of specific non-scientific actors. As an example, improving decision-making for public authorities is considered an important practical research aim. The style is also defined by publishing reports, a publication type usually targeted at non-scientific actors, including public authorities and private companies or organizations. This interpretation is further supported by the presence of collaboration with public authorities, private companies/organizations and others.

A note on the use of theory in humanities research

A surprising finding is that theoretical position contributes so little to differences in research style. The humanities have always been the site of intense theoretical discussion, both within and between disciplines, and we expected theoretical position to contribute more to the observed differences. The it does not contribute is likely to be related to limitations in the construction of the data rather than the actual situation in the humanities. The respondents of the survey were asked to name the two theorists that influenced their research most. This resulted in a list of 486 names, which we grouped on a limited number of categories for the correspondence analysis. We ended up grouping theorists on birth year and birth country, hoping to approximate theoretical currents linked to specific historical contexts. However, the analysis suggests that our coding does not effectively bring out theoretical differences in the humanities. We did not want to group theorists by theoretical current because it would introduce too much subjectivity into the analysis. Having respondents choose from a pre-defined list of theoretical currents would have been preferable. However, it is not obvious which theoretical currents should be included in such a list.

Distribution of disciplines in the space of research styles

Structured data analysis

We use structured data analysis (SDA) to analyze the distribution of disicplines in the space of research styles. SDA is based on the use of supplementary variables, which are superimposed on the correspondence analysis without affecting the distribution of the clouds of categories and individuals. This makes it possible to analyze how disciplines (supplementary variable) are distributed in the space of humanities research styles (active variables). SDA can be seen as an advanced use of supplementary variables, which takes into account the variance of the subclouds of individuals generated by the supplementary variables (Le Roux and Rouanet 2010: 68-80). This makes it possible to study stylistic differences within individual disciplines (subclouds). High variances indicate big stylistic differences within disciplines, and low variances indicate small stylistic differences within disciplines. This use of subcloud variances can be seen as a numerical alternative to concentration ellipses. In the present analysis, the supplementary variable is the self-reported discipline of respondents, who were asked to place their research within one of 15 disciplinary categories or within a category of interdisciplinary research. As mentioned, the category Humanities (other) covers researchers whose disciplinary membership we were unable to determine based on the responses.

SDA allows us to compare supplementary variables in order to see which ones more accurately predict the observed differences in the cloud of active variables. As an example, we can compare respondent discipline with respondent institution (universities, museums, libraries and archives) to see which one more accurately predict the observed differences. Two measures are central to the comparison of supplementary variables: the *between-variance* and the *within-variance* (Le Roux and Rouanet 2010: 24). The between-variance is equal to the variance of the category mean points, and expresses the dispersion of the categories across an axis. The within-variance is equal to the weighted average variance of the subclouds, and indicates how well the category coordinates represent the individuals choosing those categories. The sum of the between-variance and within-variance of a variable on a given axis is equal to the eigenvalue of that axis. A supplementary variable with relatively high between-variance and relatively low within-variance predicts the observed differences more accurately than a supplementary variable with relatively low between-variance and relatively high within-variance.

The analysis of the distribution of disciplines in the space of research styles is based on two figures. Figure 1.4 shows the distribution of individual researchers and disciplines on axis 1 and 2 in the space of research styles. The coordinates of categories (disciplines) are equal to the average coordinate of the individuals (researchers) choosing those categories, divided by the square root of the variance of the axis (Le Roux and Rouanet 2010: 41). The last part of the transition formula (dividing by the square root of the variance of the axis) simply increases the distance of the category coordinates to the center of the cloud, facilitating the interpretation of the distribution. Figure 1.5 shows the variance of subclouds of individuals generated by the supplementary variable on axis 1 and 2. Because the total variance of axis 1 is higher than the total variance of axis 2, individual subclouds tend to vary more on axis 1. This means that the difference between the quantitative and the qualitative style of research is found within most individual disciplines. However, there are exceptions. Archeology, Film and media studies, History, Literature, Music and Theatre, and Theology all display higher variances on axis 2. This means that the difference between the basic and the applied style of research is more pronounced within these disciplines.

Distribution of disciplines on axis 1

Axis 1 isolates Linguistics, Psychology and, to some extent, Humanities (other) from the remaining humanities disciplines, which means that Linguistics and Psychology are the most quantitative disciplines in the humanities in Denmark in the early-twenty-first century (figure 1.4). The subclouds of Linguistics and Psychology display high variances on axis 1, which means that there are big differences between quantitative and qualitative styles of research within these disciplines (figure 1.5). In other words, quantitative linguistics and psychology research is practiced by specific groups of linguists and psychologists. In the case of Psychology, the quantitative style of research is practiced primarily at the monodisciplinary psychology departments at Aarhus University and the University of Copenhagen (table B.2 in appendix). The remaining disciplines are more or less evenly distributed on the axis, from Educational studies, being the most quantitative, to Literature, being the most qualitative. As mentioned, many discipline subclouds display high variances on axis 1. In addition to Linguistics and Psychology, Languages and philology and Humanities (interdisciplinary) display relatively high variances, indicating the existence of big stylistic differences within these disciplines. In other humanities disciplines, variances are relatively low, and quantitative styles of research are relatively uncommon.

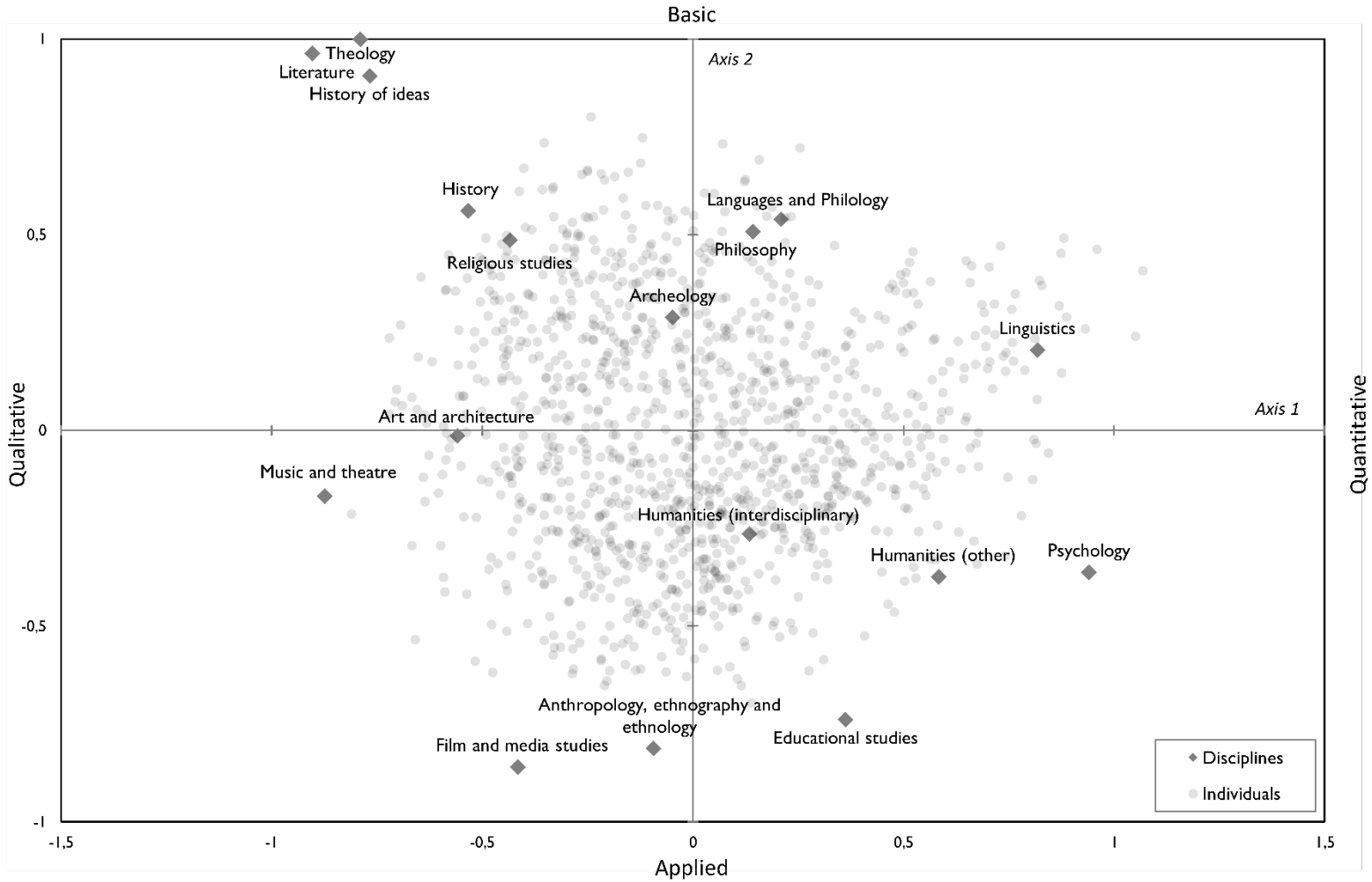

Figure 1.4: Individual researchers and disciplines in the space of research styles

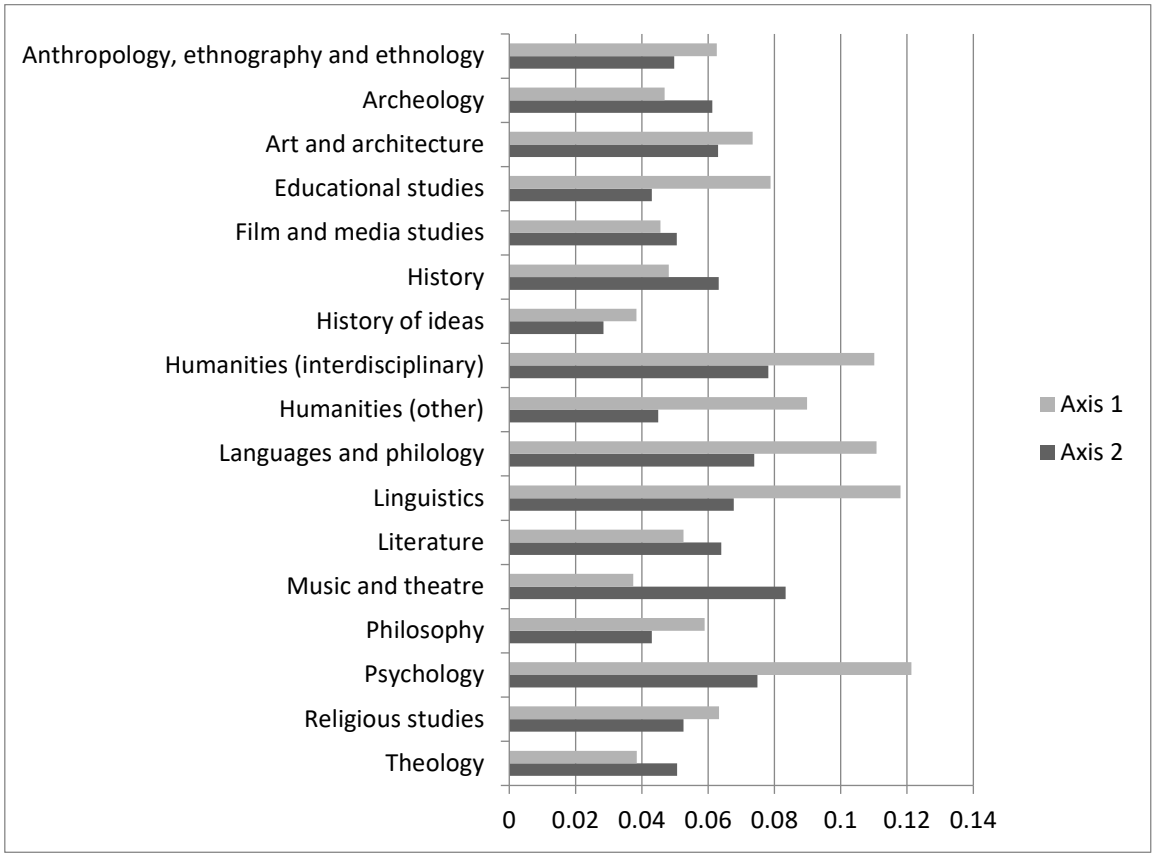

Figure 1.5: Variances of discipline subclouds

Note: Figure is based on table B.3 in appendix.

By the early-twenty-first century, the stylistic profiles of linguistics and psychology are very similar. However, the two disciplines followed very different routes to the same destination. Danish psychology was quantitative from start. The discipline, which formed through a process of role hybridization in the early-twentieth century, was modelled on the tradition of experimental psychology developed by Wilhelm Wundt in Germany in the late-nineteenth century. The founding father of Danish psychological research, Alfred Lehmann, was a student of Wundt in Leipzig during the 1880s (From et al. 1980). Qualitative psychological research was added to the repertoire of the discipline later during the twentieth century. In contrast to psychology, linguistics started as a qualitative discipline. The first generation of linguists, who were trained in philology, practiced comparative history of language, most importantly Indo-European languages. The second generation practiced a more theoretical style of linguistic research, inspired by the tradition of structural linguistics developed by Ferdinand de Saussure in France in the late-nineteenth and early-twentieth century (Juhl Jensen 1979). The quantitative and experimental style of research observed in the

correspondence analysis was only added to the repertoire of the discipline in the 1960s with the introduction of computers in research (Spang-Hansen 1979).

Distribution of disciplines on axis 2

Axis 2 isolates two groups of disciplines from other humanities disciplines. It isolates History of ideas, Literature and Theology on the positive side of the axis, and Anthropology, ethnology and ethnography, Educational studies and Film and media studies on the negative side of the axis. In other words, History of ideas, Literature and Theology are the most basic, and Anthropology, ethnology and ethnography, Educational studies and Film and media studies the most applied disciplines in the humanities in the early-twenty-first century. The remaining disciplines are more or less evenly distributed on the axis, from History, being the most basic, to Psychology, being the most applied. The subclouds of the basic and applied disciplines display relatively low levels of variance, which means that there are only small differences between basic and applied styles of research within these disciplines. An exception is Literature, which shows some variation on axis 2, indicating the existence of both basic and applied styles of literary research. Generally, however, disciplines around the center of the axis display higher levels of variance. Humanities (interdisciplinary), Languages and philology, Linguistics, Music and theatre, and Psychology, for example, all display high levels of variance on axis 2.

These findings suggest that the applied style of humanities research was introduced by new disciplines, including anthropology, educational studies, film and media studies, and, to some extent, other interdisciplinary fields of study. Another new discipline, history of ideas, adopted the existing basic style of humanities research. Of course, our survey says nothing about when the observed styles of research developed. But based on the findings of the analysis and the historical literature on the humanities in Denmark, it seems reasonable to assume that the style was introduced during the late-twentieth and early-twenty-first century. Because of the growing student population, three new universities had been established in the 1960s and 1970s. The University of Southern Denmark was established in 1966, Roskilde University in 1972 and Aalborg University in 1974. Roskilde University and Aalborg University were established on the basis of problem-based research and teaching. During the late-twentieth century, Copenhagen Business School introduced research and teaching combining business economics and various humanities disciplines. In the space of research styles, Roskilde University, Aalborg University and Copenhagen Business School are all placed toward the

applied style (see table B.2 in appendix). While university does not predict research style as accurately as department or discipline, it does predict research styles more accurately on axis 2 than it does on axis 1, indicated by the higher between-variance and lower within-variance of the variable on axis 2 (table 1.3).

Table 1.3: Within and between-variances of supplementary variables on primary axes

	Axis 1 (λ=0.1108)		Axis 2 (λ=0.0929)	
	Within	Between	Within	Between
Discipline	0.0814	0.0294	0.0627	0.0302
Department	0.0817	0.0290	0.0715	0.0214
University	0.1072	0.0035	0.0869	0.0060

In addition to the establishment of interdisciplinary and problem-based universities in the 1970s, the situation in the fields of research and higher education in the late-twentieth and early-twenty-first century was defined by the research policies of the European Commission and the Danish government, especially research funding policies. At the European level, research funding through the Framework Programmes, which fund primarily interdisciplinary and problem-based research, increased exponentially between the 1980s and the 2010s. And while the larger share of the funding was allocated to other major fields of science, many humanities researchers have participated in activities funded by the programs (Schögler and König 2017). At the national level, there was an increasing focus on applied research from the 1970s. During the 2000s, new funding institutions for applied research were established by the Danish government, and resources were gradually moved from institutions funding basic research to institutions funding applied research (Aagaard 2017). The increased focus on and investments in applied research by the European Commission and the Danish government provided new opportunities for researchers in all major fields of science, including the humanities. And the findings of our analysis suggest that humanities researchers from specific disciplines have profited more than others from these opportunities.

Concluding remarks

Summary

Based on the responses from the e-mail questionnaire survey among researchers at Danish universities, museums, libraries and archives, we explored the practices involved in research

production and communication in the humanities in the early-twenty-first century. Using multiple correspondence analysis, we identified the primary dimensions along which these practices vary. These dimensions distinguish four styles of humanities research, defined by specific combinations of research topics, theories, empirical materials, analytical methods or techniques, epistemic research aims, practical research aims, publication strategies and collaborative activities. They include 1) a quantitative, 2) a qualitative, 3) a basic and 4) an applied style. The applied style of humanities research is defined by communication to and collaboration with public authorities and private companies. It is also defined by the use of diverse types of empirical material and analytical methods or techniques in the production of research. These findings engender a series of questions and hypotheses about the relationship between research production and communication. How can it be, for example, that specific types of empirical material and analytical methods or techniques are used in applied research? Are they considered more useful than others? And if so, by whom? The researchers? Or the people to whose demand they respond? These and other questions call for new studies of research production and communication.

Based on a structured data analysis, we argued that the applied style of research was introduced by new humanities disciplines, including anthropology, educational studies, film and media studies and, to some extent, interdisciplinary fields of study. Another new discipline, history of ideas, adopted existing and more basic styles of humanities research. We discussed these findings in the light of the situation in the Danish and European fields of research and higher education in the late-twentieth and early-twenty-first century, a period characterized by the establishment of new problem-based universities in Denmark and increased focus on and investments in applied research by the European Commission, on the one hand, and the Danish government, on the other. While the larger share of funding has been allocated to other major fields of science, it looks like researchers from specific humanities disciplines have profited from the new opportunities arising from the establishment of problem-based universities and investments in applied research. Of course, these findings raise more questions than they answer. How, for example, can it be that old humanities disciplines did not profit from these opportunities to the same degree as new humanities disicplines? And how can it be that not all new disicplines introduced applied styles of research? These and other questions call for new studies of the humanities.

Generalizability of the findings

Considering the generalizability of the findings of the analysis beyond the Danish case, it is important to pay close attention to variations in scientific boundaries across national borders. The category of the humanities does not necessarily refer to the same group of disciplines in one context as it does in another. In many cases, boundaries between major fields of science even vary within individual national contexts. In Europe, history has usually been considered a humanities discipline. With few exceptions, historical (university) research has taken place within the philosophy and humanities faculties of European universities. In the United States, in contrast, historical research has taken place somewhere between the humanities and social sciences (Abbott 2001: 123). Boundaries between major fields of science can be seen as results of boundary work, defined as discursive efforts of social actors to draw symbolic boundaries between practices, people, etc. (Lamont and Molnar 2002: 178-181). Boundary work always takes place in specific historical contexts with specific interests, distributions of resources and other contingencies (Gieryn 1999: 23-24). As a consequence, boundaries between major fields of science also vary according to the historical contexts in which they are drawn. Variations in scientific boundaries do not rule out the possibility of generalizing the findings. However, they should be taken into account when making concrete generalizations.

We believe that Denmark constitutes an interesting case for the study of the humanities regardless of national particularities. What makes the case interesting is the semi-peripheral position of Denmark in the global scientific field. Practices in peripheral or semi-peripheral national scientific fields often constitute "…a response to, imitation of, resistance to, or competition with the center" (Ben-David 1971: 19). And Danish humanities researchers have imported practices from German experimental psychology, French structural linguistics, British social anthropology, American area studies, etc. The continuous import of practices from the scientific centers means that Denmark constitutes a laboratory for the study of practices that are global in scope. In the scientific centers, in contrast, there is relatively little import of research practices. Because peripheral and semi-peripheral national scientific fields import practices from the same centers, we would expect, all things equal, to find similar styles of humanities research in other peripheral or semi-peripheral national scientific fields, at least within the European context. Of course, all things are not equal, and peripheral and semi-peripheral national scientific fields vary according to many things, including the level of

demand for research from public authorities and private companies. As discussed, the applied style of humanities research in Denmark developed in the context of increasing demand.

Limitations of the analysis

An important limitation of the analysis relates to the low response rate and possible response bias of the survey. Because the response rate is low, the total number of responses and the statistical precision of estimates are also low. This is a general problem with non-response in surveys. The possible response bias is more tricky. We know that non-respondents differ from respondents (if they did not differ from respondents, they would have responded to the survey). The question is whether they differ from respondents on the central variables of the analysis, that is, the active variables of the correspondence analysis. When non-respondents differ from respondents on the central variables, the responses are biased. Often, there is not sufficient information on non-respondents to identify biases in the responses. In the present case, it seems reasonable to assume that the observed research styles do correspond to actual research styles. However, the importance (eigenvalue) of stylistic differences (axes) might not correspond to the actual importance of those differences. It is not unlikely, for example, that researchers practicing quantitative and/or applied research have been more responsive to the survey than researchers practicing qualitative and/or basic research. There is also the possibility that we have missed important research styles altogether.

It is important to keep in mind that surveys are cross sectional, and that the correspondence analysis and structured data analysis say nothing about when the applied style of research was introduced or by which disciplines. However, by showing that new humanities disicplines have a higher degree of correspondence with the applied style of research, they suggest that it was introduced by these disciplines. This interpretation is supported by the historical literature on the humanities. And it is the combination of the survey data and the historical literature that allows us to draw these conclusions. The importance of knowing the history of the research object can be illustrated by the case of linguistics. The correspondence analysis and the structured data analysis show that linguists practice a quantitative and experimental style of research, similar to the style of research practiced by psychologists. However, in contrast to psychology, which formed as a stylistically quantitative discipline, linguistics formed as a stylistically qualitative and basic discipline. For a long time, it was more similar to philology, literature and theology than to psychology. It was only in the 1960s, with the introduction of computers in research, that linguists started to practice quantitative and

experimental research. The case shows how much survey research can benefit from historical research.

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Appendix B

Table B.1: Frequencies, coordinates and contributions of active variables

			Coordinate		Contribution	
	Frequency	Percent	Axis 1	Axis 2	Axis 1	Axis 2
Research topics						
Topic: Cultures and cultural production	313	26.73%	-0.601	0.448	2.039	1.356
Topic: Environment, space and population	70	5.98%	0.152	-0.666	0.029	0.671
Topic: Markets, individuals and institutions	49	4.18%	0.595	-0.829	0.313	0.727
Topic: NA	18	1.54%	NA	NA	NA	NA
Topic: The human mind and its complexity	345	29.46%	0.698	-0.143	3.032	0.152
Topic: The social world, diversity, institutions and values	192	16.40%	0.059	-0.616	0.012	1.572
Topic: The study of the human past	184	15.71%	-0.556	0.671	1.027	1.787
Theoretical position						
Theory: Many	766	65.41%	-0.065	-0.185	0.058	0.563
Theory: None	297	25.36%	0.022	0.434	0.003	1.209
Theory: One	108	9.22%	0.430	0.176	0.361	0.072
Theorist nationality: Anglo-American	191	16.31%	0.302	-0.194	0.315	0.154
Theorist nationality: French or German	207	17.68%	-0.366	-0.087	0.501	0.034
Theorist nationality: NA	297	25.36%	NA	NA	NA	NA
Theorist nationality: Not clear	342	29.21%	0.006	-0.040	0.000	0.012
Theorist nationality: Other	94	8.03%	-0.071	-0.497	0.008	0.501
Theorist nationality: Scandinavian	40	3.42%	0.487	-0.175	0.171	0.026
Theorist born: 1918-1940	199	16.99%	-0.033	-0.157	0.004	0.105
Theorist born: NA	676	57.73%	NA	NA	NA	NA
Theorist born: Post 1940	147	12.55%	0.054	-0.307	0.008	0.299
Theorist born: Pre 1918	149	12.72%	-0.190	-0.109	0.097	0.038
Empirical material						
Fiction: (-)	954	81.47%	0.202	-0.114	0.700	0.266
Fiction: (-/+)	91	7.77%	-0.806	-0.067	1.066	0.009
Fiction: (+)	126	10.76%	-0.918	0.960	1.916	2.506
Scientific literature and theory: (-)	190	16.23%	0.559	0.531	1.070	1.156
Scientific literature and theory: (-/+)	249	21.26%	0.065	-0.137	0.019	0.101
Scientific literature and theory: (+)	732	62.51%	-0.163	-0.082	0.349	0.107
Experimental data: (-)	920	78.57%	-0.190	0.114	0.600	0.258
Experimental data: (-/+)	121	10.33%	0.118	-0.758	0.030	1.500
Experimental data: (+)	130	11.10%	1.261	-0.052	3.732	0.007
Quantitative data: (-)	757	64.65%	-0.240	0.290	0.785	1.371
Quantitative data: (-/+)	256	21.86%	0.067	-0.707	0.021	2.758
Quantitative data: (+)	158	13.49%	1.062	-0.202	3.216	0.139
Fieldwork, interviews and observations: (-)	494	42.19%	-0.128	0.845	0.146	7.611
Fieldwork, interviews and observations: (-/+)	223	19.04%	-0.079	-0.294	0.025	0.415
Fieldwork, interviews and observations: (+)	454	38.77%	0.186	-0.761	0.282	5.670
Documents: (-)	590	50.38%	0.351	0.344	1.309	1.508
Documents: (-/+)	282	24.08%	-0.317	-0.374	0.511	0.852
Documents: (+)	299	25.53%	-0.382	-0.305	0.786	0.598

Electronic media: (-)	649	55.42%	0.244	0.447	0.694	2.792
Electronic media: (-/+)	302	25.79%	-0.315	-0.430	0.542	1.204
Electronic media: (+)	220	18.79%	-0.270	-0.698	0.289	2.309
Architecture and design: (-)	976	83.35%	0.131	0.122	0.303	0.314
Architecture and design: (-/+)	131	11.19%	-0.710	-0.561	1.192	0.889
Architecture and design: (+)	64	5.47%	-0.493	-0.611	0.280	0.516
Audio and video: (-)	795	67.89%	0.026	0.290	0.009	1.440
Audio and video: (-/+)	195	16.65%	-0.316	-0.681	0.352	1.953
Audio and video: (+)	181	15.46%	0.247	-0.502	0.200	0.985
Art: (-)	866	73.95%	0.284	0.037	1.261	0.026
Art: (-/+)	164	14.01%	-0.741	-0.204	1.623	0.147
Art: (+)	141	12.04%	-0.859	0.057	1.878	0.010
Artifacts and material relics: (-)	894	76.35%	0.173	0.086	0.480	0.142
Artifacts and material relics: (-/+)	138	11.78%	-0.592	-0.394	0.873	0.463
Artifacts and material relics: (+)	139	11.87%	-0.498	-0.112	0.621	0.038
Analytical methods/techniques						
Conceptual analysis: (-)	347	29.63%	0.621	0.474	2.417	1.681
Conceptual analysis: (-/+)	255	21.78%	-0.072	-0.210	0.024	0.242
Conceptual analysis: (+)	569	48.59%	-0.341	-0.184	1.192	0.414
Categorized coding: (-)	757	64.65%	-0.154	0.378	0.326	2.334
Categorized coding: (-/+)	201	17.16%	0.151	-0.679	0.083	1.997
Categorized coding: (+)	213	18.19%	0.422	-0.673	0.684	2.079
Description: (-)	407	34.76%	0.230	0.675	0.387	3.995
Description: (-/+)	275	23.48%	-0.128	-0.327	0.081	0.635
Description: (+)	489	41.76%	-0.112	-0.364	0.111	1.398
Source criticism: (-)	489	41.76%	0.509	0.073	2.287	0.056
Source criticism: (-/+)	248	21.18%	-0.162	-0.342	0.117	0.626
Source criticism: (+)	434	37.06%	-0.473	0.128	1.754	0.154
Theory construction and synthesizing: (-)	340	29.04%	0.482	0.395	1.425	1.147
Theory construction and synthesizing: (-/+)	402	34.33%	0.011	-0.161	0.001	0.223
Theory construction and synthesizing: (+)	429	36.64%	-0.384	-0.148	1.142	0.202
Philological text processing: (-)	872	74.47%	0.258	-0.145	1.044	0.394
Philological text processing: (-/+)	151	12.89%	-0.709	0.002	1.369	0.000
Philological text processing: (+)	148	12.64%	-0.772	0.895	1.591	2.558
Text and discourse analysis: (-)	438	37.40%	0.619	0.192	3.025	0.349
Text and discourse analysis: (-/+)	280	23.91%	-0.177	-0.449	0.157	1.216
Text and discourse analysis: (+)	453	38.68%	-0.482	0.106	1.895	0.110
Statistics: (-)	795	67.89%	-0.231	0.146	0.764	0.367
Statistics: (-/+)	217	18.53%	-0.008	-0.540	0.000	1.365
Statistics: (+)	159	13.58%	1.186	0.047	4.038	0.007
Epistemic research aims						
Identify causal relationships or trends: (-)	248	21.18%	-0.056	-0.347	0.014	0.644
Identify causal relationships or trends: (-/+)	414	35.35%	-0.131	-0.030	0.127	0.008

Identify causal relationships or trends: (+)	509	43.47%	0.140	0.206	0.180	0.466
Identify universal laws: (-)	544	46.46%	-0.040	-0.148	0.015	0.258
Identify universal laws: (-/+)	387	33.05%	-0.076	-0.021	0.040	0.004
Identify universal laws: (+)	240	20.50%	0.227	0.397	0.222	0.816
Formulate universal claims or arguments: (-)	416	35.53%	0.009	-0.017	0.001	0.003
Formulate universal claims or arguments: (-/+)	452	38.60%	-0.110	-0.038	0.098	0.014
Formulate universal claims or arguments: (+)	303	25.88%	0.163	0.101	0.145	0.067
Identify unique characteristics: (-)	159	13.58%	0.300	0.240	0.259	0.197
Identify unique characteristics: (-/+)	463	39.54%	0.007	0.088	0.000	0.077
Identify unique characteristics: (+)	549	46.88%	-0.087	-0.131	0.074	0.204
Describe facts and events: (-)	78	6.66%	0.212	0.218	0.063	0.080
Describe facts and events: (-/+)	325	27.75%	0.060	0.011	0.021	0.001
Describe facts and events: (+)	768	65.58%	-0.042	-0.018	0.025	0.006
Understand culture and symbols_(-)	227	19.39%	0.902	0.274	3.329	0.367
Understand culture and symbols_(-/+)	944	80.61%	-0.213	-0.059	0.774	0.071
Practical research aims						
Make critical analysis: (-)	126	10.76%	0.827	0.506	1.555	0.696
Make critical analysis: (-/+)	285	24.34%	0.167	0.204	0.143	0.256
Make critical analysis: (+)	760	64.90%	-0.195	-0.152	0.523	0.378
Improve decision making for public authorities: (-)	279	23.83%	-0.037	0.615	0.007	2.276
Improve decision making for public authorities: (-/+)	472	40.31%	-0.159	-0.020	0.216	0.004
Improve decision making for public authorities: (+)	420	35.87%	0.212	-0.370	0.340	1.242
Preserve traditions and cultures: (-)	370	31.60%	0.503	-0.271	1.689	0.585
Preserve traditions and cultures: (-/+)	418	35.70%	0.018	-0.138	0.002	0.171
Preserve traditions and cultures: (+)	383	32.71%	-0.497	0.429	1.704	1.519
Improve intercultural understanding: (-)	170	14.52%	0.736	0.187	1.664	0.128
Improve intercultural understanding: (-/+)	405	34.59%	0.067	0.052	0.032	0.024
Improve intercultural understanding: (+)	596	50.90%	-0.250	-0.078	0.670	0.078
Publication strategies						
Monographs, edited volumes and book chapters: (-)	277	23.65%	0.668	0.045	2.229	0.012
Monographs, edited volumes and book chapters: (+)	870	74.30%	-0.216	-0.006	0.731	0.001
Monographs, edited volumes and book chapters: NA	24	2.05%	NA	NA	NA	NA
Articles: (-)	430	36.72%	0.565	-0.156	2.473	0.226
Articles: (+)	717	61.23%	-0.342	0.104	1.516	0.167
Articles: NA	24	2.05%	NA	NA	NA	NA
Reviews in scientific journals: (-)	681	58.16%	0.407	-0.152	2.035	0.337
Reviews in scientific journals: (+)	466	39.80%	-0.601	0.237	3.032	0.566
Reviews in scientific journals: NA	24	2.05%	NA	NA	NA	NA
Reports: (-)	773	66.01%	0.027	0.308	0.010	1.583
Reports: (+)	374	31.94%	-0.063	-0.617	0.027	3.071
Reports: NA	24	2.05%	NA	NA	NA	NA
Conference papers and posters: (-)	218	18.62%	0.160	0.514	0.101	1.243

Conference papers and posters: (+)	929	79.33%	-0.041	-0.113	0.028	0.254
Conference papers and posters: NA	24	2.05%	NA	NA	NA	NA
Newspapers and commentaries: (-)	757	64.65%	0.211	0.081	0.610	0.108
Newspapers and commentaries: (+)	390	33.30%	-0.417	-0.139	1.224	0.161
Newspapers and commentaries: NA	24	2.05%	NA	NA	NA	NA
Others: (-)	475	40.56%	0.368	0.053	1.164	0.028
Others: (+)	672	57.39%	-0.265	-0.026	0.848	0.010
Others: NA	24	2.05%	NA	NA	NA	NA
Publications: NA	77	6.58%	NA	NA	NA	NA
Publications: Only co-authorship	74	6.32%	1.169	-0.171	1.825	0.047
Publications: Only single author	271	23.14%	-0.266	0.425	0.347	1.054
Publications: Singe and co-authorship	749	63.96%	-0.083	-0.129	0.094	0.268
Read/write: Read other languages	664	56.70%	0.002	-0.054	0.000	0.042
Read/write: Read/write Danish/English only	181	15.46%	0.895	-0.223	2.613	0.195
Read/write: Read/write other languages	326	27.84%	-0.491	0.254	1.419	0.453
Collaborative activities						
External collaboration: Municipalities and regions	113	9.65%	0.555	-0.777	0.627	1.472
External collaboration: NA	205	17.51%	NA	NA	NA	NA
External collaboration: Only other scientist/scholars	463	39.54%	-0.021	0.465	0.004	2.158
External collaboration: Other collaborations	156	13.32%	-0.326	-0.458	0.299	0.707
External collaboration: Private org. and companies	111	9.48%	0.191	-0.549	0.073	0.723
External collaboration: State organizations	123	10.50%	-0.293	-0.452	0.191	0.543
Internal collaboration: Other disciplines	765	65.33%	-0.162	-0.141	0.363	0.328
Internal collaboration: Own discipline only	201	17.16%	0.553	0.235	1.108	0.239
Internal collaboration: Work alone only	205	17.51%	0.079	0.328	0.023	0.476

Table B.2: Frequencies and coordinates of supplementary variables

			Coordinate	
	Frequency	Percent	Axis 1	Axis 2
Discipline				
Anthropology. ethnography and ethnology	95	8.11%	-0.094	-0.813
Archeology	39	3.33%	-0.048	0.289
Art and architecture	38	3.25%	-0.560	-0.014
Educational studies	83	7.09%	0.363	-0.738
Film and media studies	41	3.50%	-0.415	-0.860
History	111	9.48%	-0.534	0.561
History of ideas	21	1.79%	-0.767	0.906
Humanities (interdisciplinary)	249	21.26%	0.134	-0.265
Humanities (other)	49	4.18%	0.584	-0.374
Languages and Philology	99	8.45%	0.210	0.540
Linguistics	54	4.61%	0.819	0.205
Literature	69	5.89%	-0.903	0.963
Music and theatre	22	1.88%	-0.875	-0.168
Philosophy	61	5.21%	0.143	0.508
Psychology	85	7.26%	0.941	-0.362
Religious studies	21	1.79%	-0.434	0.486
Theology	34	2.90%	-0.789	1.031
Institution				
Copenhagen Business School	57	4.87%	0.169	-0.335
Ministry of Culture	57	4.87%	-0.400	0.473
Roskilde University	98	8.37%	-0.032	-0.264
University of Copenhagen	268	22.89%	-0.109	0.257
University of Southern Denmark	148	12.64%	-0.177	0.096
Aalborg University	155	13.24%	0.336	-0.445
Aarhus University	388	33.13%	0.059	0.027
Department				
Asia Research Cent.	3	0.26%	0.604	-0.667
Cent. for Language Technology	5	0.43%	1.402	0.016
Cent. for the Philosophy of Nature and Science Studies	2	0.17%	-0.093	-0.099
Cent. for the Study of Europe	1	0.09%	0.506	0.504
Cent. for Welfare State Research	2	0.17%	-0.677	0.495
Cent. of African Studies	2	0.17%	-0.727	-0.890
Cent. of Teaching Development and Digital Media	5	0.43%	0.824	-0.855
CRITT	3	0.26%	1.134	0.199
Danish Inst. for Advanced Studies	1	0.09%	2.426	-0.409
Danish Language Committee	4	0.34%	0.995	0.651
DCBIT	31	2.65%	0.014	-0.785
Dept. for Business and Politics	6	0.51%	-0.308	-0.176
Dept. for English. Germanic and Romance Studies	20	1.71%	0.237	0.206
Dept. for the Study of Culture	54	4.61%	-0.547	0.078
Dept. of Aesthetics and Communication	111	9.48%	-0.175	0.179
Dept. of Anthropology	16	1.37%	0.002	-0.879
Dept. of Architecture. Design and Media Technology	15	1.28%	0.679	-0.406
Dept. of Art and Cultural Studies	31	2.65%	-0.906	0.314
Dept. of Business Communication	27	2.31%	0.721	-0.281
Dept. of Communication and Psychology	58	4.95%	0.549	-0.456
Dept. of Cross-Cultural and Regional Studies	27	2.31%	-0.482	0.013
Dept. of Culture and Global Studies	34	2.90%	-0.289	-0.107
Dept. of Culture and Identity	40	3.42%	-0.174	0.549

Dept. of Culture and Society	139	11.87%	-0.184	0.369
Dept. of Design and Communication	19	1.62%	0.224	0.057
Dept. of Education	79	6.75%	0.141	-0.557
Dept. of History	41	3.50%	-0.620	0.338
Dept. of Intercultural Communication and Management	9	0.77%	-0.087	-0.986
Dept. of International Business Communication	20	1.71%	0.485	-0.144
Dept. of Language and Communication	28	2.39%	0.662	-0.187
Dept. of Learning and Philosophy	48	4.10%	0.415	-0.684
Dept. of Management. Politics and Philosophy	15	1.28%	-0.208	-0.357
Dept. of Media. Cognition and Communication	32	2.73%	0.076	-0.219
Dept. of Psychology	22	1.88%	1.190	-0.034
Dept. of Psychology and Behavioural Sciences	27	2.31%	1.226	-0.183
Dept. of Psychology and Educational Studies	27	2.31%	0.127	-0.871
Dept. of Scandinavian Research	13	1.11%	-0.136	0.801
Dept. of Scandinavian Studies and Linguistics	37	3.16%	0.374	0.768
Designmuseum Danmark	1	0.09%	-1.928	-0.392
Inst. of Psychology	3	0.26%	1.617	-0.110
National Gallery of Denmark	6	0.51%	-0.877	0.284
Rhythmic Music Conservatory	1	0.09%	0.355	-0.750
Royal Library	4	0.34%	-0.569	0.366
Sect. for Biblical Exegesis	6	0.51%	-0.542	1.384
Sect. for Church History	8	0.68%	-0.962	1.222
Sect. for Systematic Theology	7	0.60%	-0.454	0.685
The Danish National Art Library	2	0.17%	-1.116	1.070
The National Museum of Denmark	21	1.79%	-0.573	0.140
The Royal Danish Arsenal Museum	1	0.09%	0.005	1.806
The Saxo Inst.	40	3.42%	-0.617	0.419
The Schools of Visual Art	1	0.09%	0.083	1.449
The State Archives	12	1.02%	-0.209	0.834
The State Library	3	0.26%	0.058	0.756
University Library of Southern Denmark	1	0.09%	-1.196	1.706

Table B.3: Variances of discipline subclouds

	Axis 1	Axis 2
Anthropology, ethnography and ethnology	0.0498	0.0626
Archeology	0.0612	0.0469
Art and architecture	0.0630	0.0734
Educational studies	0.0430	0.0788
Film and media studies	0.0505	0.0456
History	0.0631	0.0482
History of ideas	0.0284	0.0384
Humanities (interdisciplinary)	0.0782	0.1102
Humanities (other)	0.0449	0.0899
Languages and philology	0.0739	0.1108
Linguistics	0.0677	0.1180
Literature	0.0640	0.0525
Music and theatre	0.0834	0.0374
Philosophy	0.0430	0.0589
Psychology	0.0749	0.1213
Religious studies	0.0526	0.0633
Theology	0.0506	0.0384

PAPER 2. WHAT HAPPENED TO LIBRARY RESEARCH? CHOICES OF METHOD ACROSS HUMANITIES DISCIPLINES IN DENMARK IN THE LATE-TWENTIETH AND EARLY-TWENTY-FIRST CENTURY

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Abstract

Did choices of method change in the humanities between the late-twentieth and early-twenty-first century? How did they change? And did changes vary across disciplinary boundaries? In this paper, we provide an analysis of choices of empirical material and analytical methods or techniques across humanities disciplines in Denmark between 1992 and 2012. Based on data from a categorized coding of n=1,958 PhD dissertations, we identify a general decrease in the use of different types of texts and methods for text analysis (library research). Texts and text analysis were replaced, not by quantitative data and analysis, which were relatively stable throughout the observed period, but by observations, qualitative interviews and discourse analysis, drawing on concepts from Michel Foucault and other theorists of discourse. The paper contributes to the history and sociology of the humanities with a comparative analysis of disciplines. An advantage of the comparative analysis is that it makes it possible to identify general methodological tendencies, such as the observed increase in the use of observations, qualitative interviews and discourse analysis. We discuss possible explanations of the observed tendencies and point to directions for future research.

Keywords

Sociology of science; history of science, humanities; research methods; originality; anthropology; discourse analysis

Introduction

When the first humanities disciplines started to form in the early-nineteenth century, research was based on analysis of different types of texts, including fictional literature, documentary sources and theoretical works (Turner 2014). New types of empirical material have been added to the methodological repertoire of the humanities since then, for example with the formation of archeology and art history around the mid-nineteenth century (Becker 1979; Sass 1979), and psychology and linguistics around the late-nineteenth and early-twentieth century (From et al. 1980; Juhl Jensen 1979). Despite additions to the methodological repertoire, researchers from across humanities disciplines have continued to practice library research, understood as research based on the analysis of (usually text) material deposited in libraries and archives (Abbott 2005; Abbott 2011). Did choices of empirical material and analytical methods or techniques change in the humanities between the late-twentieth and early-twenty-first century? How did they change? Did changes vary across disciplinary boundaries? And what happened to library research in all this? In this paper, we provide a longitudinal analysis of choices of method across humanities disciplines in Denmark between 1992 and 2012. Based on data from a categorized coding of n=1,958 PhD dissertations, we identify both general and discipline-specific tendencies. We discuss possible explanations of the observed tendencies and point to directions for future research.

The history of science literature has focused on the natural sciences or on individual researchers, laboratories, disciplines or other relatively small groups of researchers in the humanities (Bod et al. 2016). Recently, historians of science have taken increasing interest in the humanities as a major field of science on a par with the natural sciences (Bod et al. 2010; Bod et al. 2012; Bod et al 2014). As an example, recent studies identify methodological similarities between a wide range of humanities disciplines (Bod 2013; Turner 2014). Most other comparative studies, however, compare only a very limited number of disciplines. The sociology of science literature has also focused on individual researchers, laboratories, disciplines or other relatively small groups of researchers (Whitley 1984: 1-9). Recently, sociologists of science have taken increasing interest in major fields of science, including the humanities and social sciences. The sociological literature include studies of research production, evaluation and application (Camic et al. 2011). As an example, recent studies identify both differences and similarities in research *evaluation* across humanities and social science disciplines (Guetzkow et al. 2004; Lamont 2009; Lamont and Huutoniemi 2011;

Mallard et al. 2011; Tsay et al. 2003). What is missing is a comparative analysis of research *production* across humanities disciplines.

Based on data from a categorized coding of humanities PhD dissertations defended at Danish universities between 1992 and 2012 (n=1,958), we show that textual analysis became slightly less common in the humanities around the turn of the millennium. The general tendency hides important disciplinary differences, which we explore in the analysis. In literary studies, for example, choices of method were remarkably stable throughout the observed period, and interpretive analysis of fictional literature continued to form the methodological basis of literary research. In many other disciplines, textual analysis was slowly replaced, not by quantitative analysis, which was relatively stable, but by analysis of anthropological material, including observations and qualitative interviews. In fact, by the end of the observed period, observations and qualitative interviews constituted the most common types of empirical material in the humanities. Curiously, the use of anthropological material was often combined with some form of discourse analysis, drawing on concepts from Michel Foucault and other theorists of discourse. Even though Foucault did not use observations or interviews, researchers from across humanities disciplines have found use of his concepts in analyses of exactly such material. It can be argued that discourse analysis of observational or interview material constitutes a new style of research in the humanities.

The observed general tendencies partly reflect changes in the relative size of disciplines. The general increase in the use of observations, qualitative interviews and discourse analysis, for example, partly reflects an increase in the relative size of disciplines where these materials and methods are relatively common, including educational studies, film and media studies and psychology. However, it also reflects increases in other disciplines, including ones where these materials and methods were not part of the methodological repertoire before the observed period, for example modern languages and linguistics. How do we explain the fact that the same types of empirical material and analytical methods were introduced in disciplines as diverse as modern languages and psychology? That available materials and methods could not answer research questions is not a satisfactory explanation. Methodological change has to do with originality and competition between researchers over recognition or reputation within disciplines. Our argue that researchers from across humanities disciplines found observations, qualitative interviews and discourse analysis increasingly useful in such competition between the late-twentieth and early-twenty-first century. Future research should explore why exactly

these materials and methods proved so useful to humanities (and social science) researchers in that specific historical context.

The paper contributes to the history and sociology of science with a comparative analysis of methodological changes in the humanities. "So far, the histories that have been written are almost exclusively of *single* humanistic disciplines, such as histories of linguistics, histories of literary theory, and histories of historiography. Connections between methods and principles among different disciplines have rarely been made" (Bod 2013: 4). The same goes for sociological studies of science, which are usually case studies of individual researchers, laboratories, disciplines or other relatively small groups of researchers. Case studies have contributed significantly to the history and sociology of science. However, a "… comparative understanding is an essential part of any adequate sociology of scientific knowledge which seeks to analyse how different knowledges are produced and changed" (Whitley 1984: 5-6). At least, comparative analysis has certain advantages. Most importantly, it makes it possible to identify general tendencies, such as the observed increase in the use of observations, qualitative interviews and discourse analysis in the humanities in the late-twentieth and early-twenty-first century. Comparative analysis also makes it possible to identify discipline-specific tendencies, such as the stability in choices of method in literary research.

In the first section of the paper, we discuss how and why methods change in the humanities and other major fields of science. In the second section, we describe the empirical material (the PhD dissertations), the variables and the statistical analysis. In the third section, we report the findings of the statistical analysis, including general and discipline-specific tendencies. In the fourth section, we discuss some possible explanations of these findings. In the concluding remarks, we summarize the main findings, consider their generalizability and discuss some limitations of the analysis.

Methodological change

Choices of method continuously change in the humanities and other major fields of science. Researchers continuously introduce new types of empirical material and analytical methods, and continuously update and recombine existing ones. New materials and methods can be introduced through role-hybridization, where researchers moving from one discipline to another apply the materials and methods of the home discipline to the research problems of the destination discipline (Ben-David and Collins 1966). However, it is only under very specific

circumstances that researchers move between disciplines, and role-hybridization is not that common. It is more common for new materials and methods to be introduced through borrowings, where researchers from one disciplines borrow materials or methods from other disciplines. Borrowings can lead to significant methodological overlaps between disciplines. "All social sciences," for example, "have quantitative research communities. […] Sociology, psychology and, surprisingly, economics all have traditions of experimental investigation. Ethnography is done by anthropologists, sociologists and political scientists. Archival and other historical work is done in every social science except psychology" (Abbott 2005: 2011). In this paper, we describe methodological changes in the humanities, including borrowings of empirical material and analytical methods across disciplinary boundaries. The paper makes an important contribution to the literature by describing borrowings across all humanities instead of only some disciplines.

Methodological change is driven by different processes. Researchers introduce new types of empirical material and analytical methods when they cannot answer research questions using the methodological repertoire of their discipline. But such scientific interests cannot be isolated from social interests (Bourdieu 1975), and choices of research questions and methods always take place in the context of competition over the recognition or reputation associated with making original research contributions. According to the theory of the reward system of science, recognition is allocated to researchers who make original contributions defined as discoveries (Merton 1957). The theory of scientific revolutions distinguishes between 1) discoveries that conform with existing theories and 2) discoveries that do not conform and constitute potential challenges to scientific paradigms (Kuhn 1962). Originality, however, is not just about discovery. A recent study of peer review in the humanities and social sciences shows that originality can be "… using a new approach, theory, method, or data; studying a new topic; doing research in an understudied area; or producing new findings" (Guetzkow et al. 2004: 196). This means that competition over recognition drives methodological change in the humanities. Finally, choices of method can be responses to demand from non-scientific fields, including the institutions that fund research. The importance of quantitative methods in the social sciences, for example, can be seen, among other things, as a response to demand for quantitative social research from state institutions (Desrosières 1990; Desrosières 1998).

Empirical material, variables and statistical analysis

Empirical material

The analysis is based on data from a categorized coding of humanities PhD dissertations defended at Danish universities between 1992 and 2012. In Denmark, the PhD degree was introduced in the late 1980s, and PhD programs in the early 1990s. By the early 1990s, the new PhD degree had practically replaced the old licentiate degree (*licentiatgrad*). In order to construct a complete bibliography of PhD dissertations in the humanities, we combined university annual reports, university library catalogues, university websites and national bibliographic databases. The data of the analysis contains all dissertations in the bibliography that were available for home or library use with the Royal Library. That amounts to n=1,958 dissertations, corresponding to 75 percent of the estimated total. Availability varies over the observed period and is relatively low in 1992 (25 percent) and 1997 (49 percent). Because of the low availability these years, a higher degree of uncertainty is associated with the first years of observation. The remaining years, availability varies between 64 and 91 percent. We were unable to find a copy of the 1995 annual report from the University of Southern Denmark, which means that we have no dissertations from the University of Southern Denmark from that year.

The total number of PhD dissertations increases over the observed period, with 250 dissertations the first seven years, 781 the next seven years and 927 the last seven years of observation. The increase in the number of dissertations is partly a consequence of the slightly better availability of dissertations toward the end of the period. But the production of PhD dissertations has, in fact, increased in most disciplines (see table 2.2). The largest increase in relative size is found in educational studies, which represents 7, 14 and 18 percent of all dissertations in the first, second and third 7-year period, respectively. In fact, by the early-twenty-first century, educational studies produced more PhD dissertations than any other humanities discipline in Denmark. The University of Copenhagen accounts for 44 percent of the dissertations, Aarhus University for 17 percent, Copenhagen Business School for 9 percent, Roskilde for 7, University of Southern Denmark for 6 and the remaining institutions for less than 5 percent each (table 2.1). Aarhus School of Business and the Danish School of Education were merged with Aarhus University in 2007, which is why there are no dissertations from the former two after 2006.

Table 2.1 - Distribution of PhD dissertations on institutions and disciplines

	Frequency	Percent
Institution		
Aalborg University	106	5.41%
Aarhus School of Architecture	48	2.45%
Aarhus School of Business (1992-2006)	34	1.74%
Aarhus University	336	17.16%
Copenhagen Business School	186	9.50%
Danish School of Education (1992-2006)	86	4.39%
The Royal Danish Academy of Fine Arts	42	2.15%
Roskilde University	136	6.95%
University of Copenhagen	869	44.38%
University of Southern Denmark	115	5.87%
Total	1,958	100.00%
Discipline		
Anthropology, ethnography and ethnology	122	6.23%
Archeology	48	2.45%
Art and architecture	136	6.95%
Educational studies	294	15.02%
Film and media studies	116	5.92%
History	153	7.81%
Interdisciplinary humanities	83	4.24%
Languages and philology	267	13.64%
Linguistics	74	3.78%
Literature	70	3.58%
Music and theatre	64	3.27%
NA	30	1.53%
Organizational studies	150	7.66%
Philosophy and history of ideas	70	3.58%
Psychology	172	8.78%
Religious studies	39	1.99%
Theology	70	3.58%
Total	1,958	100.00%

The dissertations are distributed on 16 disciplinary categories (table 2.1). For reasons of comparability, we used the disciplinary categories from national research statistics. Aalborg University, Aarhus University, University of Copenhagen and the University of Southern Denmark all have department structures that correspond more or less to these categories. We included dissertations from these departments. Roskilde University is not organized around disciplinary departments. In the case of Roskilde University, we used the annual reports to identify humanities dissertations. From the business schools in Aarhus and Copenhagen, we included dissertations crossing various subfields of business economics and humanities disciplines. We came up with the category "Organizational studies" for these dissertations. We also came up with the category "Interdisciplinary humanities," which covers dissertations crossing disciplinary boundaries and dissertations from new interdisciplinary fields of study,

including area studies, cultural studies, gender studies and science studies. We included all dissertations from Aarhus School of Architecture, the Royal Danish Academy of Fine Arts and the Danish School of Education. I all cases, dissertation discipline was determined on the basis of the contents of the dissertation (explicit mentions) and institutional affiliation of author.

Table 2.2. Distribution of dissertations on disciplines and 7-year periods, 1992-2012

	1992-1998		1999-2005		2006-2012	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Anthropology, ethnography and ethnology	26	10.40%	52	6.66%	44	4.75%
Archeology	9	3.60%	18	2.30%	21	2.27%
Art and architecture	10	4.00%	46	5.89%	80	8.63%
Educational studies	18	7.20%	107	13.70%	169	18.23%
Film and media studies	15	6.00%	26	3.33%	75	8.09%
History	29	11.60%	67	8.58%	57	6.15%
Interdisciplinary humanities	9	3.60%	28	3.59%	46	4.96%
Languages and philology	67	26.80%	92	11.78%	108	11.65%
Linguistics	5	2.00%	40	5.12%	29	3.13%
Literature	5	2.00%	36	4.61%	29	3.13%
Music and theatre	7	2.80%	19	2.43%	38	4.10%
NA	16	6.40%	8	1.02%	6	0.65%
Organizational studies	2	0.80%	75	9.60%	73	7.87%
Philosophy and history of ideas	9	3.60%	23	2.94%	38	4.10%
Psychology	15	6.00%	84	10.76%	73	7.87%
Religious studies	2	0.80%	21	2.69%	16	1.73%
Theology	6	2.40%	39	4.99%	25	2.70%
Total	250	100.00%	781	100.00%	927	100.00%

Variables

We analyze six types of empirical material and six types of analytical methods or techniques. The empirical materials can be divided into three groups. The first group contains materials found in libraries and archives (physical and digital), including fictional literature, documents and theoretical texts. The category of fictional literature covers novels, short stories and poems, but also religious texts. The category of documents covers a wide range of non-fictional material, for example policy documents and newspaper articles. And the category of theoretical texts covers philosophical works and scientific publications, in cases where they constitute the empirical basis of analysis, for example in philosophy dissertations. The second group of empirical material contains only quantitative data. The category covers any kind of quantified material from surveys, behavioral experiments, laboratory work, etc. Finally, the third group contains anthropological material, including observations and qualitative interviews. The first category covers observations made by the researcher, for example during fieldwork. And the

second category covers material from interviews with open questions, which means that survey data, for example, are not recorded as qualitative interviews, but as quantitative data.

The analytical methods or techniques can be divided into three corresponding groups. The first group contains analytical methods usually applied in analyses of library and archival material, including textual analysis, source criticism and theoretical analysis. In this paper, we use the category of textual analysis to refer to interpretation of fictional literature and analysis of language, both semantic or syntactic. The category of source criticism covers methods used to determine the relevance and reliability of documentary sources and archeological findings. And the category of theoretical analysis covers analyses of concepts and theories as well as comprehensive reviews of scientific literature. The second group of analytical methods contains only quantitative analysis. Finally, the third group contains methods that are usually applied in analyses of anthropological material, including categorized coding and discourse analysis. Categorized coding covers coding of material using pre-defined categories (as in the present analysis) and coding using categories developed through the coding process. Discourse analysis covers various traditions, the most common of which is critical discourse analysis.

Statistical analysis

For each type of empirical material and analytical method, we report cross-sectional distributions and longitudinal tendencies, both general and discipline-specific. We focus on the disciplines where increases or decreases in the use of the materials and methods in question are largest (above third quartile, Q_3, for increases, and below first quartile, Q_1, for decreases). Even though our data include most dissertations from the observed period (75 percent), we do not always have enough observations to identify year-by-year changes within individual disciplines. There are too many years with no observations and too much fluctuation between years. Our solution is to use a periodization of three 7-year periods: 1992-1998, 1999-2005 and 2006-2012. We use the periodization to analyze within-discipline tendencies and to support the analysis of general tendencies. We focus on changes between the second and the third 7-year period, because coverage is better for those periods. We should note that all changes between periods are reported as percentage point changes, not percentage changes. We find the percentage point change more intuitive. And in contrast to the percentage change, the percentage point change does not inflate changes when the total number of dissertations approximates zero.

Choices of method across humanities disciplines 1992-2012

Empirical material

From a cross-sectional perspective, fictional literature is used in 14 percent of dissertations, theoretical texts in 25 and documents in 32 (see tables C.14 and C.15 in appendix). Fictional literature is most common (above the third quartile, Q_3=26.16%) in Literature, Theology, Religious studies and Languages and philology. It is relatively common (above the second quartile, Q_2=5.19%) in Linguistics, Interdisciplinary humanities, Philosophy and history of ideas and History. In the remaining disciplines, an average of 2 percent of dissertations analyze fictional literature. Documents are most common (above Q_3=36.83%) in History, Interdisciplinary humanities, Archeology and Religious studies. They are relatively common (above Q_2=25.94%) in Languages and philology, Organizational studies, Linguistics and Film and media studies. In the remaining disciplines, an average of 18 percent of dissertations analyze documents. Theoretical texts are most common (above Q_3=30.77%) in Philosophy and history of ideas, Theology, Religious studies and Literature. They are relatively common (above Q_2=25.34%) in Interdisciplinary humanities, Languages and philology, Music and theatre and Linguistics. In the remaining disciplines, an average of 15 percent of dissertations analyze theoretical texts.[10]

The longitudinal analysis shows a moderate decrease in the use of fictional literature between 1992 and 2012 (figure 2.1). There is some fluctuation the first years of observation, but the tendency is consistent over the entire period. Downward tendencies are found in eight disciplines. The largest percentage point decrease (below Q_1=-3.59%) takes place in Languages and philology, Linguistics, Theology and Educational studies. Decreases in Languages and philology and Educational studies contribute more to the general tendency because of the size of these disciplines. Decreases in the relative size of Religious studies and Theology, where fictional literature is more common, also contribute to the general tendency. The analysis also shows a moderate decrease in the use of documents between 1992 and 2012. There is some fluctuation the first years of observation, but the tendency is consistent over the entire period. Between the second and the third period, there is a 3 percentage point decrease. Downward tendencies are found in ten disciplines, but the largest percentage point decrease (below Q_1=-6.04%) takes place in Organizational studies, Religious studies, Theology and Interdisciplinary

[10] We excluded the disciplinary category ”NA” in the calculation of quartiles and averages.

humanities. Finally, the analysis seems to show a moderate increase in the use of theoretical texts between 1992 and 2012. However, this is due to fluctuation the first years of measurement. The tendency is stagnant between the second and the third period.

From a cross-sectional perspective, quantitative data are used in 17 percent of dissertations in the humanities (see table C.16 in appendix). They are most common (above Q_3=20.87%) in Psychology, Linguistics, Music and theatre and Film and media studies. They are also relatively common (above Q_2=10.53%) in Organizational studies, Educational studies, Anthropology, ethnography and ethnology and Languages and philology. In the remaining disciplines, an average of 5 percent of dissertations analyze some kind of quantitative data. Literature is the only discipline where we found no dissertations based on quantitative data. It is possible that quantitative data were introduced in literary research after the observed period, that is, after 2012. It is also possible that the PhD dissertations underestimate the use of quantitative data in literary research. That would the case if quantitative data were used more frequently by senior researchers. However, based on the available evidence, there is nothing suggesting that quantitative analysis became more common in literary research in Denmark between the late-twentieth and early-twenty-first century.

The longitudinal analysis seems to show a moderate increase in the use of quantitative data in humanities dissertations between 1992 and 2012 (figure 2.1). The increase, however, is due to fluctuation the first years of observation, and the tendency is not consistent over the entire period. Between the second and third 7-year period, the tendency is stagnant. The general stagnant tendency, however, hides important differences between disciplines. The largest percentage point increase between the second and the third 7-year period (above Q_3=+6.94%) takes place in Film and media studies, Music and theatre, Theology and Organizational studies, and the largest decrease (below Q_1=-4.61%) in Psychology, Anthropology, ethnography and ethnology, Archeology and Educational studies. Humanities disciplines have followed very different trajectories when it comes to quantitative data. Based on the available evidence, however, there is nothing suggesting that quantitative data replaced texts as the empirical basis of analysis in the humanities as a whole.

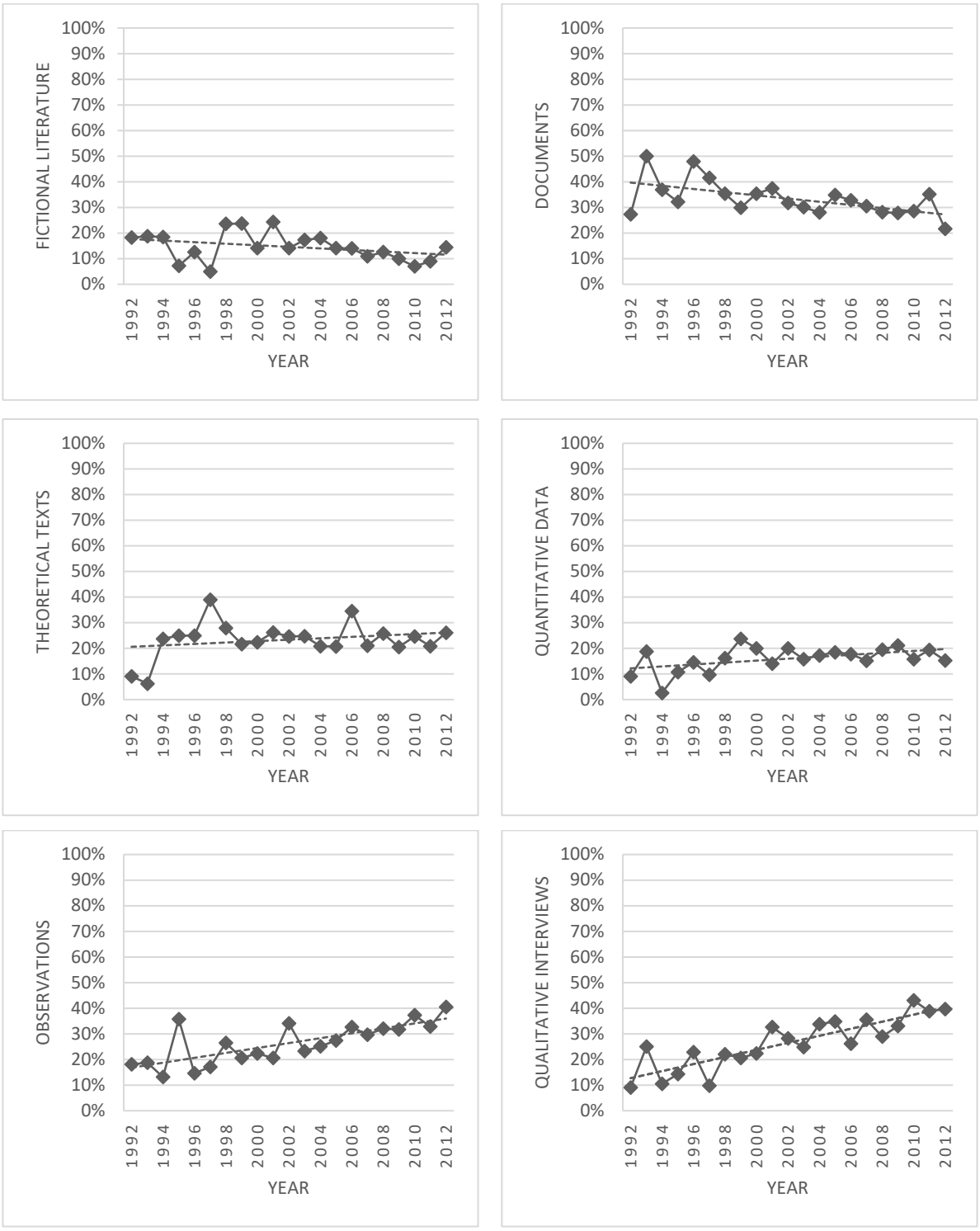

Figure 2.1: Percent of dissertations using various types of empirical material, 1992-2012
Notes: 1) The figure is based on tables C.1 to C.6 in the appendix. 2) Trend lines are ordinary least squares regression lines.

From a cross-sectional perspective, observations and qualitative interviews are used in 29 and 30 percent of dissertations, respectively (see table C.17 and C.18 in appendix). Observations are most common (above Q_3=26.94%) in Anthropology, ethnography and ethnology, Educational studies, Organizational studies and Interdisciplinary humanities. They are relatively common (above Q_2=21.83%) in Psychology, Film and media studies, Music and theatre and Religious studies. In the remaining disciplines, an average of 7 percent of dissertations analyze some form of observations. Only in the methodologically homogenous field of Literature are there no dissertations analyzing observations. Qualitative interviews, which are often used in combination with observations. are most common (above Q_3=41.05%) in Organizational studies, Educational studies, Anthropology, ethnography and ethnology and Psychology. They are also relatively common (above Q_2=13.59%) in Film and media studies, Interdisciplinary humanities, Art and architecture and Music and theatre. In the remaining disciplines, an average of 7 percent analyze qualitative interviews. We found no instances of qualitative interviews in Archeology and Literature dissertations.

The longitudinal analysis shows a significant increase in the use of observations in the humanities between 1992 and 2012 (figure 2.1). Observations are found in 21, 25 and 34 percent of dissertations in the first, second and third 7-year period, respectively. Upward tendencies are found in nine disciplines, but the largest percentage point increase between the second and the third period (above Q_3=+13.37%) takes place in Interdisciplinary humanities, Art and architecture, Educational studies and Linguistics. The increase in Educational studies contributes more to the general tendency because of the size of the discipline. The longitudinal analysis also shows a significant increase in the use of qualitative interviews between 1992 and 2012. Qualitative interviews are found in 17, 29 and 35 percent of dissertations in the first, second and third 7-year period, respectively. By the third 7-year period, qualitative interviews are the most common type of empirical material in the Danish field of humanities. Upward tendencies are found in ten disciplines, but the largest percentage point increase (above Q_3=+8.65%) takes place in Languages and philology, Linguistics, Film and media studies and Educational studies. Increases in Languages and philology and Educational studies contribute more to the general tendency because of the size the disciplines.

Analytical methods or techniques

From a cross-sectional perspective, textual analysis is used in 18 percent of dissertations in the humanities, source criticism in 15 and theoretical analysis in 26 (see table C.19 to C.21 in

appendix). Textual analysis is most common (above Q_3=42.66%) in Literature, Languages and philology, Linguistics and Theology. It is relatively common (above Q_2=5.98%) in Religious studies, Interdisciplinary humanities, Music and theatre and Archeology. In the remaining disciplines, an average of 3 percent of dissertations use textual analysis. Source criticism is most common (above Q_3=17.44%) in History, Archeology, Religious studies and Interdisciplinary humanities. It is relatively common (above Q_2=8.79%) in Languages and philology, Art and architecture, Music and theatre and Anthropology, ethnography and ethnology. In the remaining disciplines, an average of 2 percent of dissertations use source criticism. Finally, theoretical analysis is most common (above Q_3=31.17%) in Philosophy and history of ideas, Theology, Psychology and Music and theatre. It is relatively common (above Q_2=25.34%) in Linguistics, Art and architecture, Religious studies and Languages and philology. In the remaining disciplines, an average of 19 percent of dissertations do theoretical analysis.

The longitudinal analysis of analytical methods shows a considerable decrease in the use of text analysis between 1992 and 2012 (figure 2.2). There is some fluctuation the first years of observation, but the tendency is consistent over the entire period. Between the second and the third 7-year period, the share of dissertations using text analysis decreases by 9 percentage points, from 22 to 13 percent. Downward tendencies are found in fourteen disciplines. The largest decrease between the second and third period (below Q_1=-10.03%) is in Linguistics, Languages and philology, Theology and Interdisciplinary humanities. The analysis shows a moderate decrease in the use of source criticism between 1992 and 2012. Between the second and the third 7-year period, the share of dissertations using source criticism decreases by 3 percentage points, from 32 to 29 percent. There is a downward tendency in seven disciplines. The largest percentage point decrease between the second and third period (below Q_1=-6.04%) is in Organizational studies, Religious studies, Theology and Interdisciplinary humanities. Finally, the use of theoretical analysis is stagnant. There is some fluctuation the first years of measurement, but the tendency is consistent over the entire period.

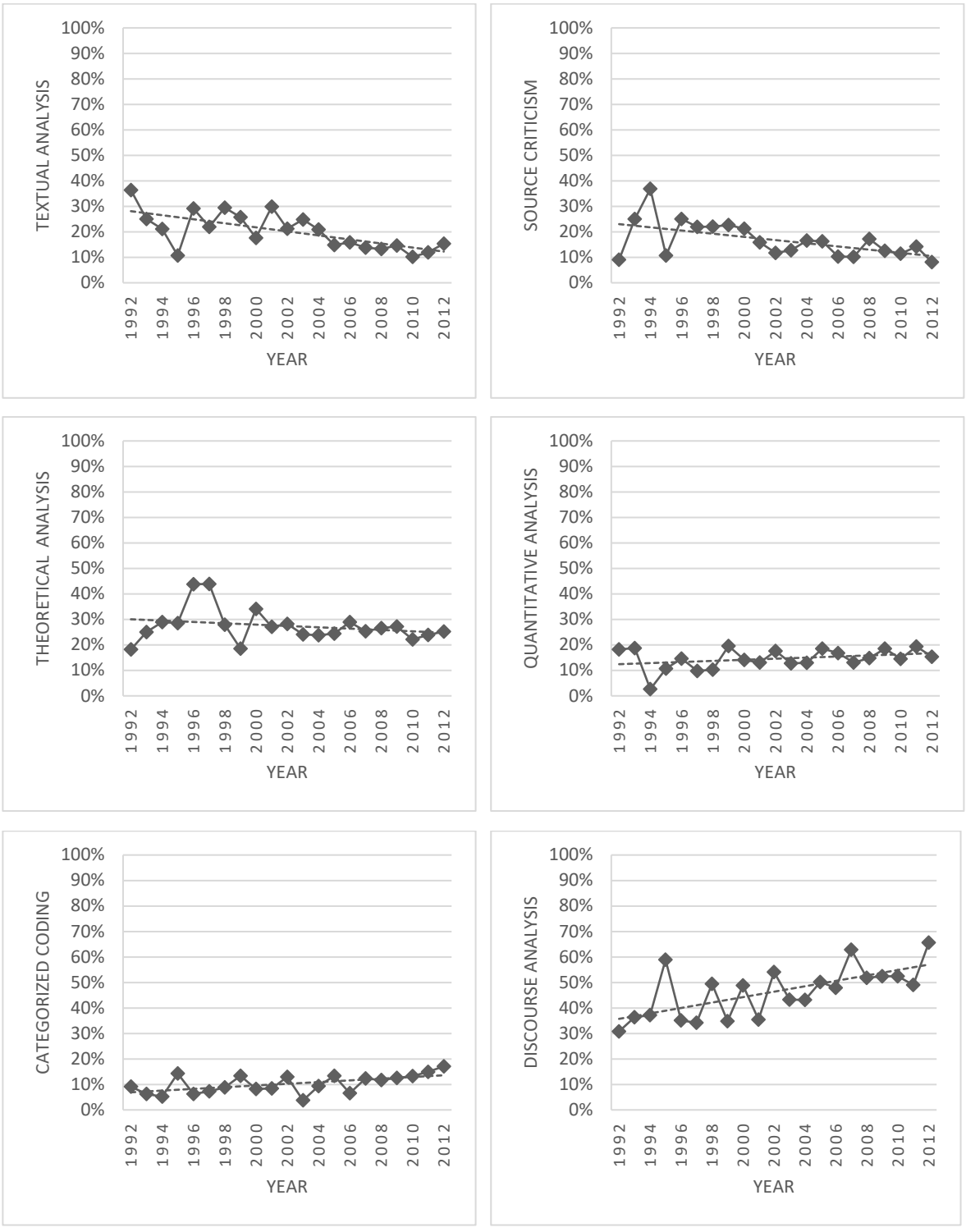

Figure 2.2: Percent of dissertations using various types of analytical methods/techniques, 1992-2012
Notes: 1) The figure is based on tables C.7 to C.12 in the appendix. 2) Trend lines are ordinary least squares regression lines.

From a cross-sectional perspective, quantitative analysis is used in 15 percent of dissertations (see table C.22 in appendix). However, there are significant variations across disciplines. Quantitative analysis is most common (above Q_3=19.34%) in Psychology, Linguistics, Music and theatre and Film and media studies. It is relatively common (above Q_2=9.341%) in Organizational studies, Educational studies, Archeology and Languages and philology. In remaining disciplines, an average of 4 percent of dissertations use quantitative analysis. It is not surprising that there are large shares of quantitative dissertations in Psychology and Linguistics. A quantitative and experimental tradition has existed in Danish psychological research since the formation of the discipline in the late-nineteenth century (From et al. 1980). And in linguistics, quantitative methods were introduced when computers hit the university in the 1960s (Spang-Hansen 1979). More surprisingly, perhaps, is the relatively large share of quantitative dissertations in Music and theatre. Finally, we found no quantitative dissertations in Literature.

The longitudinal analysis shows a moderate increase in the use of quantitative analysis in the humanities between 1992 and 2012 (figure 2.2). However, this is due to fluctuation the first years of measurement. The tendency is not consistent over the entire period. Between the second and third 7-year period, the tendency is stagnant. The general tendency hides important disciplinary differences. Relatively large percentage point increases between the second and third period (above Q_3=+7.13%) take place in Film and media studies, Music and theatre, Languages and philology and Theology. In Theology, the increase reflects an increase in the total number of dissertations by only two. However, the fact that there are some quantitative Theology dissertations is an important finding in and of itself. Relatively large decreases (below Q_1=-3.18%) take place in Psychology, Educational studies, Linguistics and Interdisciplinary humanities. But downward tendencies are only found in five disciplines (Anthropology, ethnography and ethnology is the fifth), but these disciplines contribute more to the general tendency because of their size.

From a cross-sectional perspective, categorized coding and discourse analysis are found in 11 and 52 percent of dissertations, respectively (see table C.23 and C.24 in appendix). Categorized coding is most common (above Q_3=15.15%) in Educational studies, Film and media studies, Psychology and Music and theatre. It is relatively common (above Q_2=6.20%) in Organizational studies, Archeology, Anthropology, ethnography and ethnology and Languages and philology. In the remaining disciplines, an average of 3 percent of dissertations

use this type of analytical method/technique. We found no instances of categorized coding in Literature and Philosophy and history of ideas. Probably, the most surprising finding of the analysis is the large share of dissertations using discourse analysis. If there is a household analytical method/technique in the contemporary field of humanities, it is discourse analysis. This analytical method/technique is most common (above Q_3=70.70%) in Anthropology, ethnography and ethnology, Organizational studies, Film and media studies and Educational studies. It is relatively common (above Q_2=41.09%) in Interdisciplinary humanities, Art and architecture, Music and theatre and Psychology. In remaining disciplines, an average of 25 percent of dissertations use this type of analytical method/technique.

The longitudinal analysis shows a slight increase in the use of categorized coding between 1992 and 2012 (figure 2.2). The tendency is consistent over the entire period, and between the second and third 7-year period, the percentage of dissertations using categorized coding goes from 10 to 13. Upward or stagnant tendencies are found in eight disciplines, but the largest percentage point increase (above Q_3=+3.64%) takes place in Educational studies, Art and architecture, Theology and Archeology. The longitudinal analysis also shows a large increase in the use of discourse analysis between 1992 and 2012. Despite some fluctuation the first years of measurement, the tendency is consistent over the entire period. There is a 17 percentage point increase in the use of discourse analysis between the second and the third 7-year period, from 44 to 61 percent. This means that by the third 7-year period, discourse analysis is by far the most common analytical method or technique in humanities PhD dissertations in Denmark. There is an increase in the use of discourse analysis in nine disciplines. The largest percentage point increase (above Q_3=+15.44%) takes place in Art and architecture, Languages and philology, Educational studies and Music and theatre.

So, what happened to library research?

The longitudinal analysis of choices of empirical material and analytical methods shows that library research became less common in the humanities between the late-twentieth and early-twenty-first century. It also shows that it was replaced, not by quantitative data and analysis, but by anthropological material and discourse analysis. In this section, we discuss three possible explanations of these tendencies. The three explanations relate to three different processes driving methodological change: 1) introduction of new materials and methods in order to answer research questions that cannot be answered using available methodological

repertoires, 2) competition over recognition associated with making methodologically original research contributions and 3) changing demand from non-scientific fields. The discussed explanations are not mutually exclusive, and the most plausible explanation is most likely a combination of the three. There might also be possible explanations that we have not even thought about. The aim of the paper, however, is not to offer an exhaustive list of possible explanations. It is to empirically describe changes in choices of method across humanities disciplines in Denmark in the late-twentieth and early-twenty-first century. Still, we do want to use the opportunity to start thinking about possible explanations, and point to directions for future research.

Assuming that researchers from across humanities disciplines introduced observations, qualitative interviews and discourse analysis in order to answer research questions they could not answer using the available methodological repertoires of their disciplines, which research questions could that be? Observations and qualitative interviews are designed for the study of culture, and the observed increase in the use of these materials could be a consequence of an increasing interest among humanities researchers in questions of culture. Two observations support this hypothesis. First, a cultural turn has been identified in multiple humanities and social science disciplines around the 1980s, for example in history (Hunt 1989). Second, increasing interest in questions of culture among humanities and social science researchers led to the formation of cultural studies as a relatively autonomous field of research around the 1960s and 1970s (Turner 2003). Both observations support the hypothesis that humanities researchers introduced the new methods in order to answer research questions about culture. Our data, however, do not allow us to test this empirically. Future research should test if the use of observations, qualitative interviews and discourse analysis is, in fact, correlated with research questions about culture, and if increasing use of these methods has been correlated with increasing interest in research questions about culture.

As mentioned, scientific interests cannot be isolated from social interests, and choices of research questions and methods always take place in the context of competition over the recognition or reputation associated with making original research contributions, including methodologically original contributions. The analysis suggests that researchers from across humanities disciplines found observations, qualitative interviews and discourse analysis increasingly useful in such competition throughout the late-twentieth and early-twenty-first century. It does not, however, suggest why these methods were found useful. What made

observations, qualitative interviews and discourse analysis more useful than other materials and methods in the competition over recognition in humanities disciplines in that specific historical context? Why did humanities researchers borrow observation and interview materials from anthropology instead of, for example, quantitative data from social science or natural science disciplines? Answering these questions, future research should study how humanities researchers used observations, qualitative interviews and discourse analysis to challenge specific methods in their respective disciplines. Which methods did language researchers, for example, challenge by introducing anthropological methods? Which limitations did they see in those methods? And which comparative advantages did they see in anthropological methods? A qualitative analysis of PhD dissertations or other scientific products could provide important information about methodological change and within-discipline competition in the humanities in particular and the scientific field in general.

The fact that observations, qualitative interviews and discourse analysis were borrowed by researchers from disciplines as diverse as educational studies and modern languages suggests that new research questions and within-discipline competition alone cannot explain the observed tendencies. There is reason to believe that some broader process was driving methodological changes in the humanities in the late-twentieth and early-twenty-first century. In Denmark and Europe, that period was characterized by increasing demand for applied research, for example from research funding institutions (Aagaard 2017). Maybe funding institutions and humanities researchers considered anthropological material better suited for applied research than library material. That would explain why researchers from disciplines as methodologically diverse as educational studies and modern languages found use of the same methods. Future research should look into the connection between choices of method and demand from non-scientific fields in the humanities. The connection could be studied qualitatively by interviewing researchers about their motivations for choosing certain methods, or quantitatively by correlating choices of methods and sources of funding in scientific publications. The PhD dissertations on which the present analysis is based do usually not report sources of funding, which makes them unsuited for such correlational analysis. Journal articles usually report sources of funding, and are better suited.

Concluding remarks

Summary

Based on data from a categorized coding of humanities PhD dissertations defended at Danish universities between 1992 and 2012, we identified a moderate decrease in the use of different texts and text analysis between the late-twentieth and early-twenty-first century. There were significant variations across disciplines. In the discipline of literature, for example, choices of method were remarkably stable throughout the observed period, and interpretive analysis of fictional literature continued to define literary research. In other disciplines, the analysis of texts was replaced, not by quantitative data and analysis, which were relatively stable, but by discourse analysis of anthropological material, including observations and qualitative interviews. By the end of the observed period, observations and qualitative interviews were the most common types of empirical material, and discourse analysis the most common type of analytical method in the humanities. These general tendencies partly reflect changes in the relative size of disciplines. The general increase in the use of observations, qualitative interviews and discourse analysis partly reflects an increase in the relative size of disciplines where these materials and methods are relatively common, including educational studies, film and media studies and psychology. However, it also reflects increases in other disciplines, including ones where these materials and methods were not part of the methodological repertoire before the observed period, for example modern languages and linguistics.

We discussed three possible explanations of the observed tendencies. The explanations are not mutually exclusive, and the most plausible explanation is most likely a combination of the three. A possible explanation is that humanities researchers introduced the new methods in order to answer research questions about culture. The explanation seems plausible because of increasing interest among humanities and social science researchers in questions about culture in the late-twentieth century. However, it begs the question of why culture received so much attention in that historical context. The second possible explanation is that these methods and research questions proved useful to researchers in competition over recognition or reputation associated with making methodologically original research contributions. In other words, they enabled researchers to challenge methodological traditions of their respective disciplines. However, the explanation says nothing about why the same methods were borrowed in order to challenge very different methodological traditions. Why were qualitative interviews, for example, introduced in disciplines as diverse as educational studies and modern languages?

We discussed the possibility that the observed tendencies were a response to increasing demand for applied research, and that humanities researchers considered anthropological material, for example, better suited for applied research than library material. Future research should study choices of method in the humanities in the context of changing demand from non-scientific fields.

Generalizability of the findings

What is the generality of the findings of the analysis? Are they particular to the humanities in Denmark? Or can they be generalized to other national contexts? Of course, the findings of the statistical analysis cannot be generalized in any mathematical sense. However, there is reason to believe that similar changes in choices of method among humanities researchers have taken place in other national contexts. After all, national scientific fields are closely connected through international associations, conferences, journals, etc. Borrowings of concepts and methods from other national contexts happen all the time in the humanities and the other major fields of science. The case of discourse analysis is but one example of a set of concepts and methods borrowed from across the national border, specifically Britain and, secondarily, France. That being said, there are also national particularities (Heilbron 2008). The expansion of educational studies in Denmark during the observed period is particular to the Danish case. It was a consequence of changes in the institutional structure of the field around the turn of the millennium, where research was given much more priority at institutions whose primary responsible had been the training of school teachers.

Considering the generalizability of the findings, it is important to pay close attention to variations in scientific boundaries across geographical coordinates. “In the European tradition alone, classifications of fields and disciplines have been many and diverse” (Bod et al. 2016: 2-3). What is considered a humanities discipline in one historical context is not necessarily considered a humanities discipline in another. In the present paper, we have included a series of disciplines that are not necessarily considered humanities disciplines in other national contexts. Psychology, for example, emerged within the philosophy faculties of German universities in the late-nineteenth century and was as such considered a humanities discipline or a *Geisteswissenschaft* (Ben-David and Collins 1966). Today, psychology departments can be found in faculties or areas of the humanities, medical sciences, natural sciences and social sciences. In Denmark alone, they can be found in the humanities, medical sciences and social sciences. The example of psychology shows the importance of paying close attention to

geographical variations in scientific boundaries. The classification of interdisciplinary fields, including area studies, cultural studies, educational studies, film and media studies and gender studies, is particularly important when considering the generalizability of the findings, since these fields have contributed significantly to the general changes in choice of method in the humanities.

Limitations of the analysis

There are a some limitations of the analysis worth addressing. The limitations relate to our categorization of disciplines, empirical materials and analytical methods. With respect to disciplines, we decided to use disciplinary categories from national research statistics by Statistics Denmark. We did this in order to be able to compare observed distributions with distributions in national statistics. Early in the research process, however, the limitations of the disciplinary categories became clear. There were, for example, no categories covering new interdisciplinary fields of research, such as area studies, cultural studies, gender studies and science and technology studies. We came up with the category "Interdisciplinary humanities" to cover dissertations from those fields. We also came up with the category "Organizational studies" to cover business school dissertations combining business economics and different humanities disicplines. Both categories, however, group dissertations from diverse research fields, and there is still theoretical work to be done constructing a list of disciplines that corresponds to the actual space of humanities disciplines. Such a list would have to be informed by the specific historical context of the study. The boundaries of major fields of science vary across geographical coordinates, which means that the list of humanities disciplines is not necessarily the same in two national contexts, and across temporal coordinates, which means that the list of humanities disciplines is not necessarily the same in two periods within the same national context.

There is also theoretical work to be done constructing a list of the most common types of empirical material and analytical methods in the humanities. We decided to include materials and methods pertaining to three different methodological traditions, including library research, quantitative research and qualitative anthropological research. These materials and methods, however, do not constitute an exhaustive list. In archeology, for example, research is usually based on the analysis of artifacts. And in art history, research is usually based on the analysis of works of art. However, we wanted to include only 1) relatively common types of empirical material and analytical methods and 2) types of empirical material and analytical methods used

in multiple disciplines. Artifacts, for example, are used almost exclusively in archeological research, and are not that relevant for the analysis of choices of methods across humanities disciplines. Another question of interest, which we have not addressed in the paper, is that of digital materials and methods. We did not distinguish between physical and digital materials in the coding of the dissertation, for example between physical and digital documents. And we did not distinguish between non-digital and digital analytical methods. Future research will have to look into the question of digital humanities.

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Appendix C

Table C.1: Dissertations using fictional literature 1992-2012

	Frequency	Percent	Total
1992	2	18%	11
1993	3	19%	16
1994	7	18%	38
1995	2	7%	28
1996	6	13%	48
1997	2	5%	41
1998	16	24%	68
1999	23	24%	97
2000	12	14%	85
2001	26	24%	107
2002	12	14%	85
2003	23	17%	133
2004	25	18%	139
2005	19	14%	135
2006	15	14%	107
2007	15	11%	138
2008	16	13%	128
2009	15	10%	151
2010	11	7%	158
2011	12	9%	134
2012	16	14%	111
Total	278	14%	1,958

Table C.2: Dissertations using documents 1992-2012

	Frequency	Percent	Total
1992	3	27%	11
1993	8	50%	16
1994	14	37%	38
1995	9	32%	28
1996	23	48%	48
1997	17	41%	41
1998	24	35%	68
1999	29	30%	97
2000	30	35%	85
2001	40	37%	107
2002	27	32%	85
2003	40	30%	133
2004	39	28%	139
2005	47	35%	135
2006	35	33%	107
2007	42	30%	138
2008	36	28%	128
2009	42	28%	151
2010	45	28%	158
2011	47	35%	134
2012	24	22%	111
Total	621	32%	1,958

Table C.3: Dissertations using theoretical texts 1992-2012

	Frequency	Percent	Total
1992	1	9%	11
1993	1	6%	16
1994	9	24%	38
1995	7	25%	28
1996	12	25%	48
1997	16	39%	41
1998	19	28%	68
1999	21	22%	97
2000	19	22%	85
2001	28	26%	107
2002	21	25%	85
2003	33	25%	133
2004	29	21%	139
2005	28	21%	135
2006	37	35%	107
2007	29	21%	138
2008	33	26%	128
2009	31	21%	151
2010	39	25%	158
2011	28	21%	134
2012	29	26%	111
Total	470	24%	1,958

Table C.4: Dissertations using quantitative data 1992-2012

	Frequency	Percent	Total
1992	1	9%	11
1993	3	19%	16
1994	1	3%	38
1995	3	11%	28
1996	7	15%	48
1997	4	10%	41
1998	11	16%	68
1999	23	24%	97
2000	17	20%	85
2001	15	14%	107
2002	17	20%	85
2003	21	16%	133
2004	24	17%	139
2005	25	19%	135
2006	19	18%	107
2007	21	15%	138
2008	25	20%	128
2009	32	21%	151
2010	25	16%	158
2011	26	19%	134
2012	17	15%	111
Total	337	17%	1,958

Table C.5: Dissertations using observations 1992-2012

	Frequency	Percent	Total
1992	2	18%	11
1993	3	19%	16
1994	5	13%	38
1995	10	36%	28
1996	7	15%	48
1997	7	17%	41
1998	18	26%	68
1999	20	21%	97
2000	19	22%	85
2001	22	21%	107
2002	29	34%	85
2003	31	23%	133
2004	35	25%	139
2005	37	27%	135
2006	35	33%	107
2007	41	30%	138
2008	41	32%	128
2009	48	32%	151
2010	59	37%	158
2011	44	33%	134
2012	45	41%	111
Total	558	28%	1,958

Table C.6: Dissertations using qualitative interviews 1992-2012

	Frequency	Percent	Total
1992	1	9%	11
1993	4	25%	16
1994	4	11%	38
1995	4	14%	28
1996	11	23%	48
1997	4	10%	41
1998	15	22%	68
1999	20	21%	97
2000	19	22%	85
2001	35	33%	107
2002	24	28%	85
2003	33	25%	133
2004	47	34%	139
2005	47	35%	135
2006	28	26%	107
2007	49	36%	138
2008	37	29%	128
2009	50	33%	151
2010	68	43%	158
2011	52	39%	134
2012	44	40%	111
Total	596	30%	1,958

Table C.7: Dissertations using textual analysis 1992-2012

	Frequency	Percent	Total
1992	4	36%	11
1993	4	25%	16
1994	8	21%	38
1995	3	11%	28
1996	14	29%	48
1997	9	22%	41
1998	20	29%	68
1999	25	26%	97
2000	15	18%	85
2001	32	30%	107
2002	18	21%	85
2003	33	25%	133
2004	29	21%	139
2005	20	15%	135
2006	17	16%	107
2007	19	14%	138
2008	17	13%	128
2009	22	15%	151
2010	16	10%	158
2011	16	12%	134
2012	17	15%	111
Total	358	18%	1,958

Table C.8: Dissertations using source criticism 1992-2012

	Frequency	Percent	Total
1992	1	9%	11
1993	4	25%	16
1994	14	37%	38
1995	3	11%	28
1996	12	25%	48
1997	9	22%	41
1998	15	22%	68
1999	22	23%	97
2000	18	21%	85
2001	17	16%	107
2002	10	12%	85
2003	17	13%	133
2004	23	17%	139
2005	22	16%	135
2006	11	10%	107
2007	14	10%	138
2008	22	17%	128
2009	19	13%	151
2010	18	11%	158
2011	19	14%	134
2012	9	8%	111
Total	299	15%	1,958

Table C.9: Dissertations using theoretical analysis 1992-2012

	Frequency	Percent	Total
1992	2	18%	11
1993	4	25%	16
1994	11	29%	38
1995	8	29%	28
1996	21	44%	48
1997	18	44%	41
1998	19	28%	68
1999	18	19%	97
2000	29	34%	85
2001	29	27%	107
2002	24	28%	85
2003	32	24%	133
2004	33	24%	139
2005	33	24%	135
2006	31	29%	107
2007	35	25%	138
2008	34	27%	128
2009	41	27%	151
2010	35	22%	158
2011	32	24%	134
2012	28	25%	111
Total	517	26%	1,958

Table C.10: Dissertations using quantitative analysis 1992-2012

	Frequency	Percent	Total
1992	2	18%	11
1993	3	19%	16
1994	1	3%	38
1995	3	11%	28
1996	7	15%	48
1997	4	10%	41
1998	7	10%	68
1999	19	20%	97
2000	12	14%	85
2001	14	13%	107
2002	15	18%	85
2003	17	13%	133
2004	18	13%	139
2005	25	19%	135
2006	18	17%	107
2007	18	13%	138
2008	19	15%	128
2009	28	19%	151
2010	23	15%	158
2011	26	19%	134
2012	17	15%	111
Total	296	15%	1,958

Table C.11: Dissertations using categorized coding 1992-2012

	Frequency	Percent	Total
1992	1	9%	11
1993	1	6%	16
1994	2	5%	38
1995	4	14%	28
1996	3	6%	48
1997	3	7%	41
1998	6	9%	68
1999	13	13%	97
2000	7	8%	85
2001	9	8%	107
2002	11	13%	85
2003	5	4%	133
2004	13	9%	139
2005	18	13%	135
2006	7	7%	107
2007	17	12%	138
2008	15	12%	128
2009	19	13%	151
2010	21	13%	158
2011	20	15%	134
2012	19	17%	111
Total	214	11%	1,958

Table C.12: Dissertations using discourse analysis 1992-2012

	Frequency	Percent	Total
1992	3	31%	11
1993	5	36%	16
1994	14	37%	38
1995	15	59%	28
1996	17	35%	48
1997	14	34%	41
1998	31	49%	68
1999	34	35%	97
2000	35	49%	85
2001	39	35%	107
2002	46	54%	85
2003	59	43%	133
2004	63	43%	139
2005	70	50%	135
2006	51	48%	107
2007	82	63%	138
2008	65	52%	128
2009	81	52%	151
2010	84	52%	158
2011	71	49%	134
2012	67	66%	111
Total	1,066	54%	1,958

Table C.13: Dissertations using fictional literature on disciplines and 7-year periods, 1992-2012

	1992-1998			1999-2005			2006-2012			Entire period		
	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total
Anthropology, ethnography and ethnology	0	0.00%	26	1	1.92%	52	0	0.00%	44	1	0.82%	122
Archeology	1	11.11%	9	0	0.00%	18	0	0.00%	21	1	2.08%	48
Art and architecture	1	10.00%	10	3	6.52%	46	3	3.75%	80	7	5.15%	136
Educational studies	1	5.56%	18	4	3.74%	107	0	0.00%	169	5	1.70%	294
Film and media studies	0	0.00%	15	0	0.00%	26	1	1.33%	75	1	0.86%	116
History	0	0.00%	29	4	5.97%	67	4	7.02%	57	8	5.23%	153
Interdisciplinary humanities	0	0.00%	9	5	17.86%	28	7	15.22%	46	12	14.46%	83
Languages and philology	20	29.85%	67	48	52.17%	92	32	29.63%	108	100	37.45%	267
Linguistics	1	20.00%	5	8	20.00%	40	2	6.90%	29	11	14.86%	74
Literature	5	100.00%	5	32	88.89%	36	26	89.66%	29	63	90.00%	70
Music and theatre	1	14.29%	7	0	0.00%	19	2	5.26%	38	3	4.69%	64
NA	7	43.75%	16	0	0.00%	8	0	0.00%	6	7	23.33%	30
Organizational studies	0	0.00%	2	0	0.00%	75	1	1.37%	73	1	0.67%	150
Philosophy and history of ideas	0	0.00%	9	2	8.70%	23	2	5.26%	38	4	5.71%	70
Psychology	0	0.00%	15	0	0.00%	84	0	0.00%	73	0	0.00%	172
Religious studies	1	50.00%	2	9	42.86%	21	7	43.75%	16	17	43.59%	39
Theology	0	0.00%	6	24	61.54%	39	13	52.00%	25	37	52.86%	70
Total	38	15.20%	250	140	17.93%	781	100	10.79%	927	278	14.20%	1,958

Table C.14: Dissertations using documents on disciplines and 7-year periods, 1992-2012

	1992-1998			1999-2005			2006-2012			Entire period		
	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total
Anthropology, ethnography and ethnology	7	26.92%	26	12	23.08%	52	8	18.18%	44	27	22.13%	122
Archeology	6	66.67%	9	7	38.89%	18	7	33.33%	21	20	41.67%	48
Art and architecture	4	40.00%	10	10	21.74%	46	14	17.50%	80	28	20.59%	136
Educational studies	2	11.11%	18	25	23.36%	107	41	24.26%	169	68	23.13%	294
Film and media studies	2	13.33%	15	6	23.08%	26	25	33.33%	75	33	28.45%	116
History	28	96.55%	29	65	97.01%	67	53	92.98%	57	146	95.42%	153
Interdisciplinary humanities	6	66.67%	9	14	50.00%	28	20	43.48%	46	40	48.19%	83
Languages and philology	26	38.81%	67	31	33.70%	92	37	34.26%	108	94	35.21%	267
Linguistics	5	100.00%	5	11	27.50%	40	8	27.59%	29	24	32.43%	74
Literature	1	20.00%	5	1	2.78%	36	5	17.24%	29	7	10.00%	70
Music and theatre	2	28.57%	7	5	26.32%	19	8	21.05%	38	15	23.44%	64
NA	5	31.25%	16	6	75.00%	8	1	16.67%	6	12	40.00%	30
Organizational studies	0	0.00%	2	31	41.33%	75	21	28.77%	73	52	34.67%	150
Philosophy and history of ideas	1	11.11%	9	5	21.74%	23	7	18.42%	38	13	18.57%	70
Psychology	2	13.33%	15	6	7.14%	84	8	10.96%	73	16	9.30%	172
Religious studies	1	50.00%	2	9	42.86%	21	5	31.25%	16	15	38.46%	39
Theology	0	0.00%	6	8	20.51%	39	3	12.00%	25	11	15.71%	70
Total	98	39.20%	250	252	32.27%	781	271	29.23%	927	621	31.72%	1,958

Table C.15: Dissertations using theoretical texts on disciplines and 7-year periods, 1992-2012

	1992-1998			1999-2005			2006-2012			Entire period		
	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total
Anthropology, ethnography and ethnology	5	19.23%	26	4	7.69%	52	2	4.55%	44	11	9.02%	122
Archeology	0	0.00%	9	0	0.00%	18	2	9.52%	21	2	4.17%	48
Art and architecture	1	10.00%	10	13	28.26%	46	20	25.00%	80	34	25.00%	136
Educational studies	6	33.33%	18	19	17.76%	107	22	13.02%	169	47	15.99%	294
Film and media studies	4	26.67%	15	9	34.62%	26	11	14.67%	75	24	20.69%	116
History	3	10.34%	29	13	19.40%	67	12	21.05%	57	28	18.30%	153
Interdisciplinary humanities	3	33.33%	9	8	28.57%	28	14	30.43%	46	25	30.12%	83
Languages and philology	16	23.88%	67	20	21.74%	92	38	35.19%	108	74	27.72%	267
Linguistics	2	40.00%	5	10	25.00%	40	7	24.14%	29	19	25.68%	74
Literature	2	40.00%	5	12	33.33%	36	8	27.59%	29	22	31.43%	70
Music and theatre	3	42.86%	7	5	26.32%	19	9	23.68%	38	17	26.56%	64
NA	4	25.00%	16	2	25.00%	8	1	16.67%	6	7	23.33%	30
Organizational studies	0	0.00%	2	5	6.67%	75	8	10.96%	73	13	8.67%	150
Philosophy and history of ideas	9	100.00%	9	19	82.61%	23	34	89.47%	38	62	88.57%	70
Psychology	3	20.00%	15	15	17.86%	84	20	27.40%	73	38	22.09%	172
Religious studies	1	50.00%	2	7	33.33%	21	5	31.25%	16	13	33.33%	39
Theology	3	50.00%	6	18	46.15%	39	13	52.00%	25	34	48.57%	70
Total	65	26.00%	250	179	22.92%	781	226	24.38%	927	470	24.00%	1,958

Table C.16: Dissertations using quantitative data on disciplines and 7-year periods, 1992-2012

	1992-1998			1999-2005			2006-2012			Entire period		
	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total
Anthropology, ethnography and ethnology	3	11.54%	26	10	19.23%	52	4	9.09%	44	17	13.93%	122
Archeology	1	11.11%	9	2	11.11%	18	1	4.76%	21	4	8.33%	48
Art and architecture	2	20.00%	10	1	2.17%	46	4	5.00%	80	7	5.15%	136
Educational studies	2	11.11%	18	22	20.56%	107	27	15.98%	169	51	17.35%	294
Film and media studies	4	26.67%	15	1	3.85%	26	19	25.33%	75	24	20.69%	116
History	0	0.00%	29	6	8.96%	67	3	5.26%	57	9	5.88%	153
Interdisciplinary humanities	2	22.22%	9	2	7.14%	28	2	4.35%	46	6	7.23%	83
Languages and philology	6	8.96%	67	8	8.70%	92	13	12.04%	108	27	10.11%	267
Linguistics	0	0.00%	5	8	20.00%	40	6	20.69%	29	14	18.92%	74
Literature	0	0.00%	5	0	0.00%	36	0	0.00%	29	0	0.00%	70
Music and theatre	0	0.00%	7	3	15.79%	19	7	18.42%	38	10	15.63%	64
NA	0	0.00%	16	1	12.50%	8	1	16.67%	6	2	6.67%	30
Organizational studies	1	50.00%	2	11	14.67%	75	17	23.29%	73	29	19.33%	150
Philosophy and history of ideas	0	0.00%	9	0	0.00%	23	2	5.26%	38	2	2.86%	70
Psychology	4	26.67%	15	41	48.81%	84	31	42.47%	73	76	44.19%	172
Religious studies	0	0.00%	2	1	4.76%	21	0	0.00%	16	1	2.56%	39
Theology	2	33.33%	6	0	0.00%	39	3	12.00%	25	5	7.14%	70
Total	27	10.80%	250	117	14.98%	781	140	15.10%	927	284	14.50%	1,958

Table C.17: Dissertations using observations on disciplines and 7-year periods, 1992-2012

	1992-1998			1999-2005			2006-2012			Entire period		
	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total
Anthropology, ethnography and ethnology	21	80.77%	26	47	90.38%	52	40	90.91%	44	108	88.52%	122
Archeology	1	11.11%	9	0	0.00%	18	0	0.00%	21	1	2.08%	48
Art and architecture	1	10.00%	10	4	8.70%	46	23	28.75%	80	28	20.59%	136
Educational studies	7	38.89%	18	53	49.53%	107	110	65.09%	169	170	57.82%	294
Film and media studies	2	13.33%	15	8	30.77%	26	19	25.33%	75	29	25.00%	116
History	1	3.45%	29	3	4.48%	67	0	0.00%	57	4	2.61%	153
Interdisciplinary humanities	2	22.22%	9	2	7.14%	28	19	41.30%	46	23	27.71%	83
Languages and philology	8	11.94%	67	6	6.52%	92	20	18.52%	108	34	12.73%	267
Linguistics	1	20.00%	5	1	2.50%	40	5	17.24%	29	7	9.46%	74
Literature	0	0.00%	5	0	0.00%	36	0	0.00%	29	0	0.00%	70
Music and theatre	1	14.29%	7	7	36.84%	19	7	18.42%	38	15	23.44%	64
NA	1	6.25%	16	2	25.00%	8	5	83.33%	6	8	26.67%	30
Organizational studies	0	0.00%	2	32	42.67%	75	39	53.42%	73	71	47.33%	150
Philosophy and history of ideas	0	0.00%	9	2	8.70%	23	1	2.63%	38	3	4.29%	70
Psychology	3	20.00%	15	20	23.81%	84	22	30.14%	73	45	26.16%	172
Religious studies	1	50.00%	2	6	28.57%	21	2	12.50%	16	9	23.08%	39
Theology	2	33.33%	6	0	0.00%	39	1	4.00%	25	3	4.29%	70
Total	52	20.80%	250	193	24.71%	781	313	33.76%	927	558	28.50%	1,958

Table C.18: Dissertations using qualitative interviews on disciplines and 7-year periods, 1992-2012

	1992-1998			1999-2005			2006-2012			Entire period		
	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total
Anthropology, ethnography and ethnology	8	30.77%	26	25	48.08%	52	23	52.27%	44	56	45.90%	122
Archeology	0	0.00%	9	0	0.00%	18	0	0.00%	21	0	0.00%	48
Art and architecture	3	30.00%	10	7	15.22%	46	13	16.25%	80	23	16.91%	136
Educational studies	7	38.89%	18	62	57.94%	107	113	66.86%	169	182	61.90%	294
Film and media studies	4	26.67%	15	9	34.62%	26	33	44.00%	75	46	39.66%	116
History	2	6.90%	29	4	5.97%	67	1	1.75%	57	7	4.58%	153
Interdisciplinary humanities	4	44.44%	9	8	28.57%	28	17	36.96%	46	29	34.94%	83
Languages and philology	7	10.45%	67	7	7.61%	92	21	19.44%	108	35	13.11%	267
Linguistics	0	0.00%	5	3	7.50%	40	5	17.24%	29	8	10.81%	74
Literature	0	0.00%	5	0	0.00%	36	0	0.00%	29	0	0.00%	70
Music and theatre	0	0.00%	7	3	15.79%	19	6	15.79%	38	9	14.06%	64
NA	0	0.00%	16	2	25.00%	8	3	50.00%	6	5	16.67%	30
Organizational studies	1	50.00%	2	53	70.67%	75	56	76.71%	73	110	73.33%	150
Philosophy and history of ideas	0	0.00%	9	1	4.35%	23	2	5.26%	38	3	4.29%	70
Psychology	5	33.33%	15	35	41.67%	84	33	45.21%	73	73	42.44%	172
Religious studies	0	0.00%	2	4	19.05%	21	1	6.25%	16	5	12.82%	39
Theology	2	33.33%	6	2	5.13%	39	1	4.00%	25	5	7.14%	70
Total	43	17.20%	250	225	28.81%	781	328	35.38%	927	596	30.44%	1,958

Table C.19: Dissertations using textual analysis on disciplines and 7-year periods, 1992-2012

	1992-1998			1999-2005			2006-2012			Entire period		
	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total
Anthropology, ethnography and ethnology	1	3.85%	26	1	1.92%	52	0	0.00%	44	2	1.64%	122
Archeology	1	11.11%	9	0	0.00%	18	2	9.52%	21	3	6.25%	48
Art and architecture	1	10.00%	10	3	6.52%	46	3	3.75%	80	7	5.15%	136
Educational studies	1	5.56%	18	6	5.61%	107	0	0.00%	169	7	2.38%	294
Film and media studies	1	6.67%	15	1	3.85%	26	2	2.67%	75	4	3.45%	116
History	1	3.45%	29	4	5.97%	67	2	3.51%	57	7	4.58%	153
Interdisciplinary humanities	1	11.11%	9	6	21.43%	28	7	15.22%	46	14	16.87%	83
Languages and philology	35	52.24%	67	62	67.39%	92	53	49.07%	108	150	56.18%	267
Linguistics	5	100.00%	5	22	55.00%	40	9	31.03%	29	36	48.65%	74
Literature	5	100.00%	5	32	88.89%	36	25	86.21%	29	62	88.57%	70
Music and theatre	1	14.29%	7	2	10.53%	19	3	7.89%	38	6	9.38%	64
NA	8	50.00%	16	0	0.00%	8	0	0.00%	6	8	26.67%	30
Organizational studies	0	0.00%	2	0	0.00%	75	0	0.00%	73	0	0.00%	150
Philosophy and history of ideas	0	0.00%	9	2	8.70%	23	2	5.26%	38	4	5.71%	70
Psychology	0	0.00%	15	1	1.19%	84	0	0.00%	73	1	0.58%	172
Religious studies	1	50.00%	2	9	42.86%	21	6	37.50%	16	16	41.03%	39
Theology	0	0.00%	6	21	53.85%	39	10	40.00%	25	31	44.29%	70
Total	62	24.80%	250	172	22.02%	781	124	13.38%	927	358	18.28%	1,958

Table C.20: Dissertations using conceptual analysis or theoretical synthesis on disciplines and 7-year periods, 1992-2012

	1992-1998			1999-2005			2006-2012			Entire period		
	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total
Anthropology, ethnography and ethnology	6	23.08%	26	12	23.08%	52	5	11.36%	44	23	18.85%	122
Archeology	2	22.22%	9	1	5.56%	18	4	19.05%	21	7	14.58%	48
Art and architecture	1	10.00%	10	17	36.96%	46	22	27.50%	80	40	29.41%	136
Educational studies	4	22.22%	18	22	20.56%	107	21	12.43%	169	47	15.99%	294
Film and media studies	3	20.00%	15	9	34.62%	26	14	18.67%	75	26	22.41%	116
History	12	41.38%	29	12	17.91%	67	14	24.56%	57	38	24.84%	153
Interdisciplinary humanities	2	22.22%	9	4	14.29%	28	14	30.43%	46	20	24.10%	83
Languages and philology	21	31.34%	67	19	20.65%	92	29	26.85%	108	69	25.84%	267
Linguistics	1	20.00%	5	13	32.50%	40	9	31.03%	29	23	31.08%	74
Literature	0	0.00%	5	11	30.56%	36	6	20.69%	29	17	24.29%	70
Music and theatre	3	42.86%	7	5	26.32%	19	12	31.58%	38	20	31.25%	64
NA	9	56.25%	16	2	25.00%	8	1	16.67%	6	12	40.00%	30
Organizational studies	0	0.00%	2	6	8.00%	75	6	8.22%	73	12	8.00%	150
Philosophy and History of ideas	9	100.00%	9	18	78.26%	23	34	89.47%	38	61	87.14%	70
Psychology	6	40.00%	15	23	27.38%	84	27	36.99%	73	56	32.56%	172
Religious studies	1	50.00%	2	7	33.33%	21	3	18.75%	16	11	28.21%	39
Theology	3	50.00%	6	17	43.59%	39	15	60.00%	25	35	50.00%	70
Total	83	33.20%	250	198	25.35%	781	236	25.46%	927	517	26.40%	1,958

Table C.21: Dissertations using source criticism on disciplines and 7-year periods, 1992-2012

	1992-1998			1999-2005			2006-2012			Entire period		
	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total
Anthropology, ethnography and ethnology	3	11.54%	26	6	11.54%	52	2	4.55%	44	11	9.02%	122
Archeology	8	88.89%	9	14	77.78%	18	17	80.95%	21	39	81.25%	48
Art and architecture	1	10.00%	10	7	15.22%	46	5	6.25%	80	13	9.56%	136
Educational studies	1	5.56%	18	6	5.61%	107	5	2.96%	169	12	4.08%	294
Film and media studies	1	6.67%	15	0	0.00%	26	3	4.00%	75	4	3.45%	116
History	27	93.10%	29	63	94.03%	67	47	82.46%	57	137	89.54%	153
Interdisciplinary humanities	3	33.33%	9	8	28.57%	28	8	17.39%	46	19	22.89%	83
Languages and philology	8	11.94%	67	10	10.87%	92	14	12.96%	108	32	11.99%	267
Linguistics	0	0.00%	5	0	0.00%	40	0	0.00%	29	0	0.00%	74
Literature	0	0.00%	5	0	0.00%	36	1	3.45%	29	1	1.43%	70
Music and theatre	1	14.29%	7	3	15.79%	19	2	5.26%	38	6	9.38%	64
NA	3	18.75%	16	3	37.50%	8	0	0.00%	6	6	20.00%	30
Organizational studies	0	0.00%	2	0	0.00%	75	1	1.37%	73	1	0.67%	150
Philosophy and history of ideas	0	0.00%	9	0	0.00%	23	0	0.00%	38	0	0.00%	70
Psychology	0	0.00%	15	0	0.00%	84	0	0.00%	73	0	0.00%	172
Religious studies	2	100.00%	2	5	23.81%	21	5	31.25%	16	12	30.77%	39
Theology	0	0.00%	6	4	10.26%	39	2	8.00%	25	6	8.57%	70
Total	58	23.20%	250	129	16.52%	781	112	12.08%	927	299	15.27%	1,958

Table C.22: Dissertations using quantitative analysis on disciplines and 7-year periods, 1992-2012

	1992-1998			1999-2005			2006-2012			Entire period		
	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total
Anthropology, ethnography and ethnology	2	7.69%	26	5	9.62%	52	3	6.82%	44	10	8.20%	122
Archeology	1	11.11%	9	2	11.11%	18	3	14.29%	21	6	12.50%	48
Art and architecture	2	20.00%	10	0	0.00%	46	5	6.25%	80	7	5.15%	136
Educational studies	2	11.11%	18	22	20.56%	107	22	13.02%	169	46	15.65%	294
Film and media studies	2	13.33%	15	2	7.69%	26	20	26.67%	75	24	20.69%	116
History	0	0.00%	29	3	4.48%	67	3	5.26%	57	6	3.92%	153
Interdisciplinary humanities	1	11.11%	9	1	3.57%	28	0	0.00%	46	2	2.41%	83
Languages and philology	8	11.94%	67	5	5.43%	92	15	13.89%	108	28	10.49%	267
Linguistics	1	20.00%	5	19	47.50%	40	12	41.38%	29	32	43.24%	74
Literature	0	0.00%	5	0	0.00%	36	0	0.00%	29	0	0.00%	70
Music and theatre	0	0.00%	7	4	21.05%	19	12	31.58%	38	16	25.00%	64
NA	0	0.00%	16	1	12.50%	8	1	16.67%	6	2	6.67%	30
Organizational studies	1	50.00%	2	11	14.67%	75	15	20.55%	73	27	18.00%	150
Philosophy and history of ideas	0	0.00%	9	0	0.00%	23	2	5.26%	38	2	2.86%	70
Psychology	6	40.00%	15	45	53.57%	84	33	45.21%	73	84	48.84%	172
Religious studies	0	0.00%	2	0	0.00%	21	1	6.25%	16	1	2.56%	39
Theology	1	16.67%	6	0	0.00%	39	2	8.00%	25	3	4.29%	70
Total	27	10.80%	250	120	15.36%	781	149	16.07%	927	296	15.12%	1,958

Table C.23: Dissertations using categorized coding on disciplines and 7-year periods, 1992-2012

	1992-1998			1999-2005			2006-2012			Entire period		
	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total
Anthropology, ethnography and ethnology	3	11.54%	26	3	5.77%	52	4	9.09%	44	10	8.20%	122
Archeology	2	22.22%	9	1	5.56%	18	2	9.52%	21	5	10.42%	48
Art and architecture	1	10.00%	10	1	2.17%	46	6	7.50%	80	8	5.88%	136
Educational studies	2	11.11%	18	24	22.43%	107	54	31.95%	169	80	27.21%	294
Film and media studies	2	13.33%	15	4	15.38%	26	14	18.67%	75	20	17.24%	116
History	0	0.00%	29	1	1.49%	67	0	0.00%	57	1	0.65%	153
Interdisciplinary humanities	1	11.11%	9	2	7.14%	28	2	4.35%	46	5	6.02%	83
Languages and philology	5	7.46%	67	5	5.43%	92	7	6.48%	108	17	6.37%	267
Linguistics	0	0.00%	5	2	5.00%	40	1	3.45%	29	3	4.05%	74
Literature	0	0.00%	5	0	0.00%	36	0	0.00%	29	0	0.00%	70
Music and theatre	1	14.29%	7	3	15.79%	19	6	15.79%	38	10	15.63%	64
NA	0	0.00%	16	1	12.50%	8	0	0.00%	6	1	3.33%	30
Organizational studies	0	0.00%	2	13	17.33%	75	9	12.33%	73	22	14.67%	150
Philosophy and history of ideas	0	0.00%	9	0	0.00%	23	0	0.00%	38	0	0.00%	70
Psychology	3	20.00%	15	15	17.86%	84	11	15.07%	73	29	16.86%	172
Religious studies	0	0.00%	2	1	4.76%	21	1	6.25%	16	2	5.13%	39
Theology	0	0.00%	6	0	0.00%	39	1	4.00%	25	1	1.43%	70
Total	20	8.00%	250	76	9.73%	781	118	12.73%	927	214	10.93%	1,958

Table C.24: Dissertations using discourse analysis on disciplines and seven-year periods, 1992-2012

	1992-1998			1999-2005			2006-2012			Entire period		
	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total	Frequency	Percent	Total
Anthropology, ethnography and ethnology	21	80.77%	26	48	92.31%	52	40	90.91%	44	109	89.34%	122
Archeology	0	0.00%	9	5	27.78%	18	4	19.05%	21	9	18.75%	48
Art and architecture	2	20.00%	10	8	17.39%	46	63	78.75%	80	73	53.68%	136
Educational studies	13	72.22%	18	72	67.29%	107	143	84.62%	169	228	77.55%	294
Film and media studies	11	73.33%	15	21	80.77%	26	60	80.00%	75	92	79.31%	116
History	2	6.90%	29	15	22.39%	67	16	28.07%	57	33	21.57%	153
Interdisciplinary humanities	4	44.44%	9	16	57.14%	28	33	71.74%	46	53	63.86%	83
Languages and philology	20	29.85%	67	20	21.74%	92	47	43.52%	108	87	32.58%	267
Linguistics	2	40.00%	5	5	12.50%	40	8	27.59%	29	15	20.27%	74
Literature	0	0.00%	5	1	2.78%	36	3	10.34%	29	4	5.71%	70
Music and theatre	0	0.00%	7	9	47.37%	19	24	63.16%	38	33	51.56%	64
NA	3	18.75%	16	5	62.50%	8	6	100.00%	6	14	46.67%	30
Organizational studies	1	50.00%	2	65	86.67%	75	60	82.19%	73	126	84.00%	150
Philosophy and history of ideas	5	55.56%	9	9	39.13%	23	13	34.21%	38	27	38.57%	70
Psychology	8	53.33%	15	32	38.10%	84	35	47.95%	73	75	43.60%	172
Religious studies	1	50.00%	2	9	42.86%	21	5	31.25%	16	15	38.46%	39
Theology	6	100.00%	6	6	15.38%	39	4	16.00%	25	16	22.86%	70
Total	99	39.60%	250	346	44.30%	781	564	60.84%	927	1,009	51.53%	1,958

PAPER 3. EUROPEANIZATION AND THE NATIONAL RELEVANCE OF THE HUMANITIES: PUBLICATION LANGUAGE ACROSS DISCIPLINES IN DENMARK IN THE LATE-TWENTIETH AND EARLY-TWENTY-FIRST CENTURY

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Abstract

The Europeanization of the scientific field in the late-twentieth and early-twenty-first century changed the conditions of publishing, making it more practical and profitable (in terms of scientific recognition) for researchers to publish internationally (in English). By the late-twentieth century, English was already a universal language of interaction among researchers in the natural sciences. That was not the case in the humanities. So, how did humanities researchers respond to the changing conditions of publishing? We hypothesize that researchers from specific humanities disciplines are more likely than others to publish in the national language because of the historical involvement of these disciplines in cultural nation-building, specifically the production of national history, culture and language. Based on a longitudinal analysis of publication language in PhD dissertations defended in Denmark between 1992 and 2012, we show that the share of English dissertations was relatively small and the increase in the share of English dissertations relatively slow in these disciplines in the context of Europeanization. Only in history was there a consistent and considerable increase in the share of English dissertations over the observed period. Theoretically, the paper contributes to the sociology of science by pointing to the historical involvement of specific disciplines in cultural nation-building. Empirically, it contributes by analyzing new and unbiased empirical material on publication language in the humanities.

Keywords

Sociology of science; humanities; nation-building; Europeanization; scientific publishing; language

Introduction

The first steps toward the formation of *global* fields of humanities and social science research were taken in the late-nineteenth and early-twentieth century, where researchers established international associations and conferences as part of disciplinary formation processes. After a break between the early and mid-twentieth century, new international associations, conferences and journals were established by UNESCO with the purpose of supporting peaceful international relations through collaboration. In Europe, r*egional* fields of humanities and social science research started to form around the 1960s, where the first European associations and journals were established.[11] The formation of regional fields of humanities and social science research accelerated in the 1990s and 2000s, where the European Commission established regional funding institutions as part of a wider political project of European integration (Heilbron 2014). Because of the centrality of the United States and Britain in the global and European scientific fields, respectively, globalization and Europeanization have been correlated with the universalization of English in international scientific publishing. In the natural sciences, English now "serves as the almost universal language of interaction among scientific practitioners" (Gordin 2017: 606). But how did humanities researchers respond to the changing conditions of publishing in the context of Europeanization? Has English also become a universal language of interaction among archeologists, historians and others in the humanities?

There is a growing literature on the Europeanization of the humanities (and the social sciences). The literature can be divided into studies of European scientific institutions, on the one hand, and studies of the participation of researchers in the European humanities and social sciences, on the other. The studies of European scientific institutions include histories of the European University Institute (Boncourt and Calligaro 2017), the Framework Programmes (Schögler and König 2017), the European Research Council (Hoenig 2017; König 2017) and European associations and journals (Boncourt 2017; Gingras and Heilbron 2009; Heilbron et al. 2017). These studies show that the institutionalization of the European humanities and social sciences started in the 1960s and accelerated around the 1990s and 2000s. They also show that political actors, such as the European Commission, have been central in the Europeanization of the humanities, social sciences and other major fields of science, for example by establishing

[11] We use the term *regional* to refer to the level between the national and global levels, for example Europe, Latin America, Asia, etc.

regional funding institutions. Being an "inseparably political and academic process," humanities and social science researchers have contributed to Europeanization by participating in European research activities, joining European associations and publishing in European journals (Heilbron et al. 2018: 161).

The studies of participation in the European humanities and social sciences include longitudinal analyses of transnational research collaboration (Gingras and Heilbron 2009; Heilbron and Gingras 2018; Mosbah-Natanson and Gingras 2014). These studies show that 1) transnational research collaboration increased between the 1980s and the 2010s, that 2) the increase was most significant in the 2000s and 2010s, and that 3) collaboration with non-European researchers increased at the same pace as collaboration with European researchers. The studies also show that European humanities and social science researchers collaborate primarily with researchers from the scientific centers Britain, France, Germany and the United States. Longitudinal analyses of transnational referencing (citations) confirm the center-periphery model showing that European humanities and social science researchers refer primarily to publications from the scientific centers. The studies of transnational research collaboration and referencing have contributed significantly to the literature on the humanities in the context of Europeanization. There are a few studies of publication language in the wider scientific field in the context of globalization (Ammon 1998; Ammon 2001). But there are, to our knowledge, no studies of publication language in the humanities in the context of Europeanization. Such analyses are complicated by disciplinary and linguistic biases in international bibliographic databases (Archambault et al. 2006; Larivière et al. 2006).

Based on a historical outline of the humanities in Denmark, we show that researchers from specific disicplines (art history, history, Nordic archeology and Nordic philology) have participated in cultural nation-building, specifically the production of national history, culture and language. We argue that researchers from these disciplines write in Danish because of their participation in cultural nation-building rather than because of the context dependency of their research objects or methods, for example. Based on a longitudinal analysis of PhD dissertations defended at Danish universities between 1992 and 2012, we show how humanities researchers in Denmark responded to the changing conditions of publishing in the context of Europeanization. The analysis shows that 1) Danish was the primary publication language in the humanities for most of the period, and that 2) Danish was more common in disciplines involved in cultural nation-building. It also shows that 3) English gradually replaced Danish as

the primary publication language in the humanities in the context of Europeanization. However, 4) researchers from disciplines involved in cultural nation-building continued to publish primarily in Danish. Only in history did we observe a consistent and considerable increase in the share of English dissertations between 1992 and 2012.

The contribution of this paper is both theoretical and empirical. Theoretically, the paper contributes to the sociology of science literature by pointing to the historical involvement of specific disciplines in cultural nation-building. It does not offer a comprehensive theory of publishing or publication language in the humanities. However, it contributes to such a theory by showing how researchers from specific disciplines have participated in the production of national history, culture and language. Nordic archeologists, for example, write in Danish, not because of their research objects or methods, which are no more context dependent than the objects and methods of other archeologists, but because of their participation in the production of Danish prehistory. Empirically, the paper contributes to the literature with an analysis of publication language across humanities disciplines in the context of Europeanization in the 1990s and 2000s. As mentioned, international bibliographic databases are biased toward specific disciplines and languages. Our analysis is based on a comprehensive bibliography of PhD dissertations from a semi-peripheral national scientific field. Of course, PhD dissertations represent a specific type of publication, but the bibliography is not biased toward specific disciplines or languages. It constitutes a new and unbiased empirical basis for the analysis of publication language in the context of Europeanization.

In the first section of the paper, we discuss the concept of Europeanization and describe how Europeanization changed the conditions of publishing in the Danish humanities in the 1990s and 2000s. In the second section, we provide a historical outline of the humanities in Denmark, focusing on the involvement of specific disciplines in cultural nation-building. Based on the historical outline, we formulate four hypotheses about humanities researchers and their responses to the changing conditions of publishing in the context of Europeanization. In the third section of the paper, we test our hypotheses in a longitudinal analysis of publication language in humanities PhD dissertations from Denmark. Concluding the paper, we summarize the most important findings, consider their generalizability beyond the Danish case and discuss the theoretical and empirical limitations of the analysis.

Europeanization

Europeanization as transnational regionalization

The Europeanization of the humanities and the other major fields of science can be described as a process of *transnational regionalization,* defined by increasing levels of transnational collaboration, communication and mobility of individual researchers within Europe (Heilbron 2014: 693-697). Transnational regionalization, which is similar to but geographically narrower than *transnational globalization*, is not restricted to Europe. In Latin America, for example, regional fields of humanities and social science research formed already during the 1950s and 1960s (Beigel 2014: 744). The formation of regional fields of humanities and social science research in Europe started around the 1960s, where the first European associations and journals were established. The process accelerated in the 1990s and 2000s, which is indicated by the increasing levels of transnational collaboration and referencing (Gingras and Heilbron 2009; Heilbron and Gingras 2018; Mosbah-Natanson and Gingras 2014). It is important to note that Europeanization has taken place in parallel to globalization, and that it can be extremely difficult to distinguish between the two processes, let alone their consequences. Changes in publication language among humanities researchers, for example, could be (and probably are) responses to both Europeanization and globalization. However, since the 1990s, transnational regionalization "has perhaps become the more important mode of cross-border exchange" (Heilbron et al. 2018: 154-155).

The Europeanization of the humanities in Denmark

The Europeanization of the humanities and the other major fields of science is part of a wider political project of European integration, which is why political actors, most importantly the European Commission and the national governments of the European Union, have been central in the process. The European Commission has supported transnational research collaboration by establishing European funding institutions, such as the Framework Programmes (1984) and the European Research Council (2007). The Framework Programmes, whose annual budget has grown exponentially since the 1980s, were established with the official objective of strengthening the European economy through investments in research (Schögler and König 2017). A relatively small share of the funding has been allocated to the humanities, but the funding still constitutes a sizable contribution to many national research budgets. Between 1994 and 2013, researchers in Denmark participated in 266 of 1,306 humanities and social

science research activities funded by the Framework Programmes (see table D.1 in appendix). These activities had an average annual budget of more than 32 million Euros. Because the Framework Programmes only fund research activities with participation from multiple national contexts, they have contributed to increasing levels of transnational collaboration in Denmark and many other European countries. The transnational collaboration has been facilitated by European associations, most of which have been established since the late 1980s (Boncourt 2017; Gingras and Heilbron 2009).

National governments have contributed to increasing levels of transnational mobility of individual researchers through standardization of the certification of academic competences, including degrees, credits and grades. Standardization is the primary strategy of the ongoing Bologna Process, which was launched in 1999 with the official objective of strengthening the competitiveness of the European system of higher education through the establishment of the European Higher Education Area (EHEA) (Brøgger 2018). The Danish government had already introduced the standard degrees, including the PhD degree, in the late-1980s. The European Credit Transfer and Accumulation System (ECTS) was introduced in 2000, and the European grading system in 2006. National governments have also contributed to increasing levels of transnational mobility through standardization of hiring procedures. Standardization of hiring procedures is a central strategy of the ongoing Lisbon Process, which was launched in 2000 with the official objective of strengthening the competitiveness of the European economy through the establishment of the European Research Area (ERA). In Denmark, the Lisbon Process was followed by a government order on hiring procedures in 2005, according to which Danish universities were required to advertise all positions at the associate and full professor levels internationally.[12]

[12] The description of the Europeanization of the humanities in Denmark is based on European and Danish policy documents, including "The Bologna Declaration of 19 June 1999" (European ministers of higher education 1999), "Towards a European Research Area, COM (2000) 6" (European Commission 2000), "Lisbon European Council 23 and 24 March 2000 presidency conclusions" (European Council 2000), "Bekendtgørelse om bachelorgraderne B.A. og B.S." (Danish Ministry of Higher Education 1988), "Bekendtgørelse om erhvervelse af licentiatgraden, Ph.D" (Danish Ministry of Higher Education 1988), "Bekendtgørelse om de naturvidenskabelige uddannelser på universiteter og universitetscentre" (Danish Ministry of Higher Education and Science 1989), "Bekendtgørelse om eksamen ved visse videregående uddannelser under undervisningsministeriet" (Danish Ministry of Education 2000), "Bekendtgørelse om karakterskala og anden bedømmelse ved universitetsuddannelser (karakterbekendtgørelsen)" (Danish Ministry of Science, Technology and Innovation 2006), "Bekendtgørelse om ansættelse af videnskabeligt personale ved universiteter" (Danish Ministry of Science, Technology and Innovation 2005)

Changing conditions of publishing

Europeanization with the increasing levels of transnational collaboration, communication and mobility of researchers has changed the conditions of scientific publishing, making it more practical and profitable (in terms of scientific recognition) to publish in international language (English). Participation in transnational collaboration, communication and mobility depends on the ability of the individual researcher to publish internationally. In the natural sciences, English was already a universal language of interaction among researchers before the 1990s and 2000s, and we would not expect to find any significant changes in publication language among physicists, chemists and others in the context of Europeanization. In the humanities, in contrast, researchers were writing primarily in Danish. How did archeologists, historians and others respond to the changing conditions of publishing? In the next section of the paper, we show how specific humanities disicplines historically have been involved in cultural nation-building. We argue that involvement in cultural nation-building is the primary reason why researchers from these disciplines publish in the national language. However, in the context of changing conditions of publishing, they now have to choose between publishing in Danish at the expense of European scientific relevance and publishing in English at the expense of national non-scientific relevance.

The national relevance of the humanities

Cultural nation-building

We use the concept of cultural nation-building to refer to activities involved in the production and reproduction of national history, culture and language. These activities have taken place since the emergence of the national movements in Europe in the late-eighteenth and early-nineteenth century. In the first phase of these movements, between the 1780s and the 1830s, small groups of cultural producers, including writers, artists and researchers, started to take interest in national history, culture and language. In the second phase, between the 1830s and 1870s, groups of patriots transformed the cultural movements into political movements with the objective of strengthening the national identity of the people. And in the third phase, between the 1870s and 1910s, the national movements won wide support among the people (Hroch 1985: 22-24). Needless to say, national movements vary. They vary according to their phase sequence and according to timing. They also vary according to their relation to states. In some cases, national movements won wide support before the construction of nation-states.

But in most cases, including Denmark, the transition from the second to the third phase was supported by nation-states (Hobsbawm 1992: 12). The national movements did not disappear with the transition from the second to the third phase. In fact, there are indications that they gained momentum in the context of globalization from the late-twentieth century (Hettne et al. 1998).

The national movement in Denmark followed the European three-phase model (by and large). It started as a cultural movement among writers, artists and researchers in the early-nineteenth century. The writers, artists and researchers subscribed to the German cultural (as opposed to political) understanding of nationality, according to which nationality is defined by history, culture and language, among other things. In the early-nineteenth century, researchers from the University of Copenhagen started publishing research on exactly national history, culture and language (Møller Jørgensen 2000: 277). In the 1840s, the writers, artists and researchers joined the National Liberals in a political national movement with the dual objective of including the duchies of Schleswig and Holstein in Denmark and passing a new constitution (Møller Jørgensen 2000: 289-296). Danish historians, for example, played an important role in the national political movement by publishing research on the history of Schleswig and Holstein (Møller Jørgensen 2014: 22-24). On the other side of the border, German historians also published research on the history of Schleswig and Holstein (Østergård 2010: 200-223). The example illustrates how historians and other humanities researchers have participated in cultural nation-building by producing research on national history, culture and language.

The production of national history, culture and language

Art history, history, Nordic archeology and Nordic philology are the disciplines that have been most directly involved in the production of national history, culture and language in Denmark.[13] Nordic philology includes the history of literature and language. The forerunners and founding fathers of Nordic literary history published the first comprehensive history of Danish literature during the 1800s. The first professor of national literary history was appointed

[13] Folklore (*folkemindevidenskab*) was also involved in the production of national history, culture and language. The field formed during the period following the construction of the Danish nation-state. The first comprehensive history of Danish folklore was published between the 1850s and 1860s. The first docent of Nordic folklore was appointed in 1896. A national journal and association were established in 1904 and 1908, respectively. However, around the 1970s, the study of Danish folklore was sidelined by the study of European culture. Around the same time, research institutions changed their name from folklore to ethnology.

in 1829, and the same year, the first issue of the national journal of literature was published. The forerunners and founding fathers of Nordic language history published comprehensive histories of the Nordic language between the 1810s and 1830s. In 1845, the first professor of Nordic languages was appointed at the University of Copenhagen (a professor of Danish language and literature had already been appointed in Kiel in 1810). Nordic philological conferences, journals and associations were established in the 1870s, 1880s and 1910s, respectively. Research on national history dates back to around the same time as research on national literature and language. The first professor was appointed in 1833, and an association and journal were established in 1839 and 1840, respectively. Despite high levels of productivity among historians of national history in the nineteenth century, the first comprehensive national history was only published between the 1890s and 1910s.[14]

Much archeological research has been carried out in museum and other non-university contexts. The forerunners and founding fathers of Nordic archeology were associated with the Royal Commission for the Preservation of Antiquities from 1807 and the *Annals of Antiquities* from 1812. In 1843, the first comprehensive study of Danish prehistory was published, based on artifacts from the collection of the Commission. In 1892, the Commission became part of the National Museum of Denmark, which has been an important institution of archeological research since then. Nordic archeology was included in university research and teaching in 1855, when the first docent was appointed at the University of Copenhagen. Like archeology, much research in art history has been carried out in museum and other non-university contexts. The forerunners and founding fathers of art history were associated with the Royal Danish Academy of Fine Arts, established in 1754. Art history was included in university research and teaching in 1856, when the first docent was appointed at the University of Copenhagen. Research on national art history has been carried out at least since the 1830s. However, as to our knowledge, the first comprehensive national art histories were not published until around the 1920s. The discipline did not institutionalize in associations or journals until the late-twentieth century.[15]

[14] There is a comprehensive literature on the participation of historians in cultural nation-building (Berger and Conrad 2014; Berger and Lorenz 2008; Berger and Lorenz 2010; Evans and Marchal 2011; Middel and Aulinas 2015; Porciani and Raphael 2010; Porciani and Tollebeek 2015; Tibor and Hadler 2010).

[15] The historical outline of the humanities in Denmark is based on a wide range of sources, including *Den Store Danske Encyklopædi* (Lund 1994-2001), *Dansk Biografisk Leksikon* (Bech 1979-1984), *Københavns Universitet 1479-1979* (Becker 1979; Brøndsted 1879; Nielsen 1979; Sass 1979; Stoklund 1979), *Københavns Universitets Årbøger* (University of Copenhagen 1837-2006), *Lærestole og lærere ved Københavns Universitet 1537-1977* (Slottved 1979) and various journals in art history, history, Nordic archeology and Nordic philology.

Humanities researchers have been motivated by changing interests and have addressed changing audiences during the nineteenth, twentieth and twenty-first century, and choices of publication language have been defined by these changes. During the first phase of the Danish national movement, researchers were motivated by political as well as scientific interests. The official objectives of the Danish Historical Association, for example, were to 1) strengthen national identity and interest and 2) advance historical research. At that time, humanities researchers addressed an audience consisting primarily of other cultural producers. During the second phase of the national movement, humanities researchers continued to be motivated by political and scientific interests, but political actors were added to the audience. During the third phase of the national movement, but unrelated to it, humanities researchers were increasingly motivated scientific interests. However, they continued to produce research on national history, culture and language (Møller Jørgensen 2000: 709-711). During the third phase, large social groups were added to the audience of humanities research, primarily through secondary education, which was increasingly based on the study of national history, culture and language, and decreasingly based on the study of classical history culture and language (Møller Jørgensen 2012: 387-391).

Publication language

In the literature on Europeanization and globalization, there is an assumption that researchers from humanities disciplines publish in the national language because of the context dependency of their research objects or methods, which makes translation complicated (Siguan 2001; Swaan 2001). We do not disagree that translating humanities research can sometimes be complicated. However, that is not the primary reason why national languages are more common in the humanities than in other major fields of science. At the end of the day, publication language depends on audience structure. And as we have shown in the historical outline, researchers from specific humanities disciplines have addressed different national audiences, including cultural producers, political actors and secondary-education teachers and students. This is not say that all researchers from art history, history, Nordic archeology and Nordic philology have addressed exclusively national audiences. In fact, some have addressed exclusively international audiences. But most researchers from these disicplines have probably addressed both national and international audiences. Even in the heydays of the national movement, art historians, historians, Nordic archeologists and Nordic philologists published in both national and international languages (Danish, English, French and German).

Based on these considerations, we would expect 1) the share of Danish publications to be larger in the humanities than in the other major fields of science, and 2) the share of Danish publications to be larger in humanities disciplines involved in cultural nation-building than in other humanities disciplines. As an example, we would expect the share of Danish publications to be larger in the humanities than in the social sciences, and the share of Danish publications to be larger in Nordic philology than in linguistics. However, Europeanization changed the conditions of publishing in the 1990s and 2000s, and it became increasingly practical and profitable (in terms of scientific recognition) for humanities and other researchers to publish in international language (English). As a consequence, we would expect 3) the share of English publications to increase in the humanities during the 1990s and 2000s. However, we would expect 4) the increase to be slower in disciplines involved in cultural nation-building. We would, for example, expect the increase to be slower in Nordic philology than in linguistics. In the following, we test these hypotheses in a longitudinal analysis of new empirical material on publication language in the humanities in Denmark.

Publication language across disciplines, 1992-2012

Empirical material

The analysis is based on humanities PhD dissertations defended at Danish universities between 1992 and 2012. The dissertations allow us to study publication language across humanities disciplines in a specific national context during the 1990s and 2000s. The more comprehensive national and international bibliographic databases have certain limitations, which make them unsuited for present purposes. The Danish national bibliographic database, for example, only covers the period from 2009. The international bibliographic databases Web of Science and Scopus cover longer periods. But the literature suggests that they are biased toward journal articles (Larivière et al. 2006). That makes them unsuited for studies of the humanities, where monographs and edited volumes are relatively common publication types. More importantly, the literature suggests that the international bibliographic databases are biased toward English publications (Archambault et al. 2006). As an example, a study from Norway shows that Web of Science and Scopus cover only 23 and 32 percent of humanities journal articles in the national bibliographic database (Sivertsen 2014: 601). The Danish and Norwegian national scientific fields are similar in terms of size and centrality. So, we would expect the international

bibliographic databases to cover around the same percentage of humanities journal articles in Denmark.

There is no comprehensive bibliography of PhD dissertations in the humanities or any other major field of science in Denmark. In order to construct a comprehensive bibliography of humanities dissertations, we combined multiple sources, including university annual reports, university websites, university library catalogues and the national bibliographic database. We included dissertations defended between 1992, where the PhD degree completely replaced the licentiate degree, and 2012, the year before we started the research. The bibliography contains N=2,610 dissertations, which is the estimated total from that period. The analysis is based on the n=1,958 dissertations that were available for home or library use with the Royal Danish Library. Availability varies over the observed period, and is relatively low in 1992 (25 percent) and 1997 (49 percent). Availability varies between 64 and 91 percent the rest of the period. Because of the relatively low availability in 1992 and 1997, a higher degree of uncertainty is associated with the first years of observation. We were unable to find a copy of the University of Southern Denmark 1995 annual report, which means that we have no dissertations from the University of Southern Denmark from that year.

The dissertations are distributed on 19 disciplinary categories, based on the institutional affiliation of the author and the contents of the dissertations, including explicit mentions of disciplinary membership (table 3.1). For reasons of comparability, we used the disciplinary categories found in national research statistics. However, in order to test our hypotheses, we divided the category Archeology into Archeology (Nordic) and Archeology (other), and Languages and literature into Languages and literature (Nordic) and Languages and literature (other). We also divided Theology and religious studies into two categories. We came up with the category Organizational studies to cover dissertations from the business schools, and the category Humanities (interdisciplinary) to cover dissertations crossing disciplinary boundaries and dissertations from new interdisciplinary fields of research, including area studies, cultural studies, gender studies and science and technology studies. The dissertations are distributed on five universities, two schools of art and architecture, two business schools and the Danish School of Education. The total number of dissertations increases over the observed period, with 250 dissertations the first, 781 the second and 927 the third 7-year period. Increases take place in most disciplines, but the largest increase takes place in Educational studies, with 18, 107 and 169 dissertations in the first, second and third 7-year period, respectively.

Table 3.1: Distribution of dissertations on discipline and institution

	Frequency	Percent
Discipline		
Anthropology, ethnography and ethnology	122	6.23%
Archeology (Nordic)	19	0.97%
Archeology (other)	29	1.48%
Art and architecture	136	6.95%
Educational studies	294	15.02%
Film and media studies	116	5.92%
History	153	7.81%
Humanities (interdisciplinary)	83	4.24%
Humanities (other)	30	1.53%
Languages and literature (Nordic)	61	3.12%
Languages and literature (other)	206	10.52%
Linguistics	74	3.78%
Literature	70	3.58%
Music and theatre	64	3.27%
Organizational studies	150	7.66%
Philosophy and history of ideas	70	3.58%
Psychology	172	8.78%
Religious studies	39	1.99%
Theology	70	3.58%
Total	1,958	100.00%
Institution		
Aalborg University	106	5.41%
Aarhus School of Architecture	48	2.45%
Aarhus School of Business (1992-2006)	34	1.74%
Aarhus University	336	17.16%
Copenhagen Business School	186	9.50%
Danish School of Education (1992-2006)	86	4.39%
Roskilde University	136	6.95%
The Royal Danish Academy of Fine Arts	42	2.15%
University of Copenhagen	869	44.38%
University of Southern Denmark	115	5.87%
Total	1,958	100.00%

Note: Aarhus School of Business and the Danish School of Education were merged with Aarhus University in 2007.

General distributions and tendencies

Looking at the entire period, Danish is the most common dissertation language in Denmark (table 3.2). Fifty-eight percent of dissertations are written in Danish, 38 percent in English and 4 percent in other languages, including Scandinavian languages, French and German. The finding supports the hypothesis that national language is relatively common in the humanities. However, there are important disciplinary differences in dissertation language. With the

exception of Art and architecture, disciplines involved in cultural nation-building display relatively large shares of dissertations in Danish (above third quartile, Q_3=72.43%). This finding supports our hypothesis about publication language and participation in cultural nation-building. Of course, not all researchers in these disciplines participate in cultural nation-building. But the share of Danish dissertations is significantly larger than in other disciplines. Educational studies and Literature also display relatively large shares of dissertations in Danish (above third quartile), but for reasons different than involvement in the production of national history, culture or language. It falls outside the scope of the paper to discuss this in any detail. The largest share of dissertations written in non-Danish and non-English languages is found in Languages and literature (other), which includes all non-Nordic languages and literatures, for example English, Germanic and Romance. Researchers from these fields usually publish in the language they study.

The longitudinal analysis of dissertation language shows a very clear tendency (figure 3.1). Between 1992 and 2012, the share of dissertations written in Danish decreases from around 70 percent in the beginning of the observed period to around 50 percent by the end of the observed period. There is some fluctuation the first years of observation, but the tendency is consistent over most of the period. The decrease in the share of Danish dissertations is practically proportional to the increase in the share of English dissertations. The share of dissertations written in English increases from around 25 percent in the beginning of the observed period to almost 50 percent by the end of the period. There is some fluctuation the first years of observation, but the tendency is consistent over most of the period. In 2009, English actually replaces Danish as the primary dissertation language in the humanities in Denmark. The share of dissertations in non-Danish and non-English languages decreases slightly over the observed period. However, this could be because of the relatively poor coverage the first years of observation. In summary, the longitudinal analysis of dissertation language shows a clear universalization of English in the Danish humanities in the context of Europeanization in the 1990s and 2000s.

Table 3.2: Dissertation language on discipline (row profiles)

	Danish		English		Other	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Anthropology, ethnography and ethnology	41	33.61%	80	65.57%	1	0.82%
Archeology (Nordic)	16	84.21%	3	15.79%	0	0.00%
Archeology (other)	6	20.69%	23	79.31%	0	0.00%
Art and architecture	93	68.38%	40	29.41%	3	2.21%
Educational studies	241	81.97%	45	15.31%	8	2.72%
Film and media studies	63	54.31%	51	43.97%	2	1.72%
History	117	76.47%	34	22.22%	2	1.31%
Humanities (interdisciplinary)	36	43.37%	45	54.22%	2	2.41%
Humanities (other)	19	63.33%	10	33.33%	1	3.33%
Languages and literature (Nordic)	53	86.89%	8	13.11%	0	0.00%
Languages and literature (other)	91	44.17%	83	40.29%	32	15.53%
Linguistics	35	47.30%	34	45.95%	5	6.76%
Literature	54	77.14%	14	20.00%	2	2.86%
Music and theatre	32	50.00%	27	42.19%	5	7.81%
Organizational studies	58	38.67%	90	60.00%	2	1.33%
Philosophy and history of ideas	27	38.57%	41	58.57%	2	2.86%
Psychology	88	51.16%	84	48.84%	0	0.00%
Religious studies	15	38.46%	24	61.54%	0	0.00%
Theology	45	64.29%	23	32.86%	2	2.86%
Total	1,130	57.71%	759	38.76%	69	3.52%

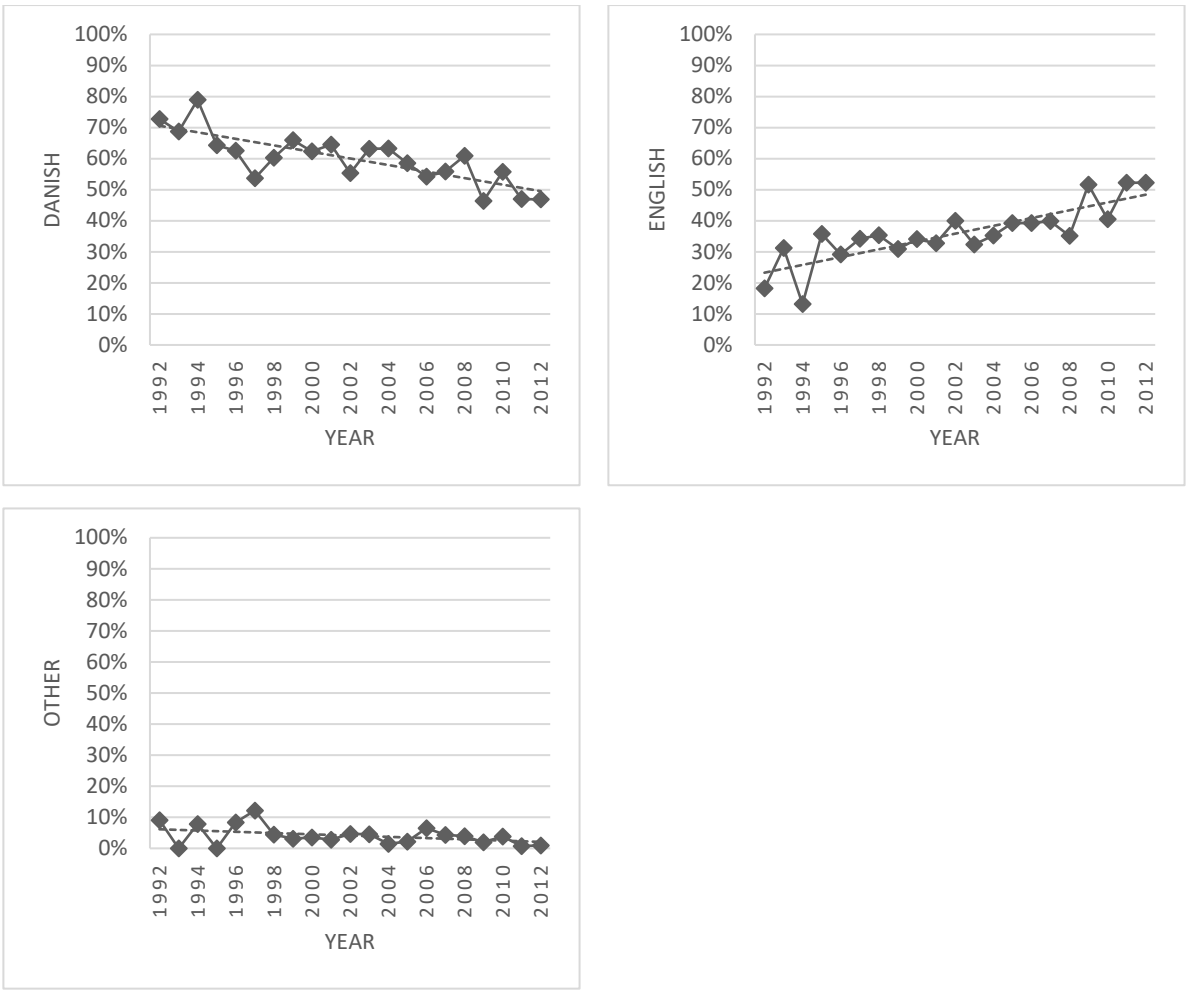

Figure 3.1: Percent of dissertations in Danish, English and other languages, 1992-2012
Notes: 1) The figure is based on table D.2 in appendix. 2) Trend lines are ordinary least squares regression lines.

Publication language across disciplines

Now, the question is if the general tendency reflects changes in individual disciplines or changes in the relative size of disciplines. The general increase could simply reflect increases in the relative size of disciplines where English is relatively common but otherwise constant. We do not have sufficient observations to construct meaningful time series for individual disciplines. Instead, we use a periodization of three 7-year periods: 1992-1998, 1999-2005 and 2006-2012. For every discipline, we compare changes in the share of English dissertations between the first and the second, and between the second and third period. Comparing the first and second period, the share of English dissertations increases in all disciplines except in

Archeology (Nordic), Art and architecture, Humanities (interdisciplinary), Linguistics, Organizational studies and Religious studies (table 3.3). Between the second and the third period, the share increases in all disciplines except in Archeology (Nordic), Archeology (other), Languages and literature (other) and Literature. In other words, the general increase in the share of English dissertations reflects increases in most disciplines.

Increases in the share of English dissertations are more consistent and considerable in some disciplines than in others. In Philosophy and history of ideas, for example, the share increases from 22 to 43 percent between the first and the second, and from 43 to 76 percent between the second and the third period. Disciplines involved in cultural nation-building have responded differently to Europeanization in the 1990s and 2000s. It is only in History that the share of English dissertations increases consistently and considerably, from 14 to 15 percent between the first and second, and from 15 to 35 percent between the second and third period. In Languages and literature (Nordic), the share increases consistently but not considerably. In Art and architecture, the share decreases between the first and the second, and increases between the second and third period. And in Archeology (Nordic), the share actually decreases between all three periods. Overall, these numbers show that researchers from disciplines involved in cultural nation-building have been slower to adopt English. Regardless, the share of English publications did increase in art history, history and Nordic philology in Denmark, especially during the 2000s. Only in Nordic archeology did the share of English dissertations decrease.

Table 3.3: Share of English dissertations on 7-year periods and disciplines

	1992-1998			1999-2005			2006-2012		
	Frequency	Percent	Period total	Frequency	Percent	Period total	Frequency	Percent	Period total
Anthropology, ethnography and ethnology	16	61.54%	26	33	63.46%	52	31	70.45%	44
Archeology (Nordic)	2	33.33%	6	1	20.00%	5	0	0.00%	8
Archeology (other)	1	33.33%	3	12	92.31%	13	10	76.92%	13
Art and architecture	3	30.00%	10	12	26.09%	46	25	31.25%	80
Educational studies	0	0.00%	18	10	9.35%	107	35	20.71%	169
Film and media studies	4	26.67%	15	9	34.62%	26	38	50.67%	75
History	4	13.79%	29	10	14.93%	67	20	35.09%	57
Humanities (interdisciplinary)	7	77.78%	9	12	42.86%	28	26	56.52%	46
Humanities (other)	4	25.00%	16	3	37.50%	8	3	50.00%	6
Languages and literature (Nordic)	2	11.76%	17	3	12.00%	25	3	15.79%	19
Languages and literature (other)	19	38.00%	50	31	46.27%	67	33	37.08%	89
Linguistics	3	60.00%	5	16	40.00%	40	15	51.72%	29
Literature	0	0.00%	5	9	25.00%	36	5	17.24%	29
Music and theatre	1	14.29%	7	5	26.32%	19	21	55.26%	38
Organizational studies	1	50.00%	2	35	46.67%	75	54	73.97%	73
Philosophy and history of ideas	2	22.22%	9	10	43.48%	23	29	76.32%	38
Psychology	3	20.00%	15	39	46.43%	84	42	57.53%	73
Religious studies	2	100.00%	2	12	57.14%	21	10	62.50%	16
Theology	0	0.00%	6	11	28.21%	39	12	48.00%	25
Total	74	29.60%	250	273	34.96%	781	412	44.44%	927

Concluding remarks

Summary

Based on the historical outline of the humanities in Denmark, we showed how researchers from specific humanities disicplines (art history, history, Nordic archeology and Nordic philology) have participated in cultural nation-building, specifically the production of national history, culture and language. We argued that involvement in cultural nation-building is the primary reason why researchers in these disciplines publish in the national language. Basically, they write in the national language because they address a national audience. This goes against the assumption that humanities researchers publish in the national language because of the context dependency of their research objects and methods. Involvement in cultural nation-building explains more accurately the observed differences in publication language between disciplines. As an example, it explains why non-Nordic archeologists publish in English, even though their research objects and methods are no less context dependent than the objects and methods of Nordic archeologists. We do not disagree that context dependency can sometimes make translation complicated. But audience structure explains more accurately variations in publication language across disciplines. Given their interest in publishing nationally, how did humanities researchers respond to the changing conditions of publishing in the context of Europeanization? That is the question we addressed in the longitudinal analysis of publication language in humanities PhD dissertations.

The analysis showed that 1) Danish was the primary publication language in the humanities for most of the period, and that 2) Danish was more common in disciplines involved in cultural nation-building. The first finding shows that, in contrast to the natural sciences, English is not a universal language of interaction in the humanities. The second finding corroborates our hypothesis about publication language and participation in cultural nation-building. It also showed that 3) English gradually replaced Danish as the primary publication language in the humanities in the context of Europeanization. However, 4) researchers from disciplines involved in cultural nation-building continued to publish primarily in Danish. The third finding indicates that Europeanization has, in fact, changed the conditions of publishing in the humanities, making it more practical and profitable (in terms of scientific recognition) to publish in English. The fourth finding corroborates our hypothesis about publication language and involvement in cultural nation-building. Among the disciplines involved in

cultural nation-building, it was only history that displayed a consistent and considerable increase in the share of English dissertations between 1992 and 2012. One possible explanation is increasing international focus in historical research during the observed period. Another possible explanation is increasing participation of historians in the production of European history (Østergård 2017).

Generalizability of the findings

Can the findings of the analysis be generalized to other national contexts? Or are they particular to Denmark? Needless to say, the findings of the longitudinal analysis of publication language cannot be generalized in any mathematical sense. But would we expect humanities researchers in other national contexts to respond in similar ways to Europeanization? And where would we expect them to do so? All things equal, we would expect humanities researchers in other small and peripheral or semi-peripheral national scientific fields to respond in similar ways. In large and central national scientific fields, such as the French and the German, scientific audiences are larger, and the profits (in terms of scientific recognition) of publishing nationally are higher. Therefore, we would expect humanities researchers from France and Germany to show more resistance toward the universalization of English. It is also important to remember that both French and German functioned as languages of international scientific communication until the mid-twentieth century (Ammon 2001). The dominance of English as an international language of scientific communication could give rise to resistance in France and Germany. And in contrast to the Danish government, the French government has actively resisted the use of English in French research and teaching (Truchot 2001).

Considering the generalizability of the findings, it is important to pay attention to particularities related to understandings of nationality. As mentioned, the Danish understanding of nationality is based on the German cultural understanding. According to the cultural understanding, formulated by Johann Gottfried Herder in the late-eighteenth century, nationality is defined by history, culture and language, among other things (Østergård 2018: 87). As a consequence, there has been continuous demand for research on national history, culture and language in the Danish context. In contexts where nationality is defined in political rather than cultural terms, demand is likely to be lower. In such contexts, we would expect humanities researchers to be less likely to publish in the national language. Considering the generalizability of the findings, it is also important to pay attention to particularities related to secondary education. In Denmark, secondary education is public, and the study of national

history, culture and language in secondary education has been supported by the Danish state. In private-education contexts, state support is weaker. In such contexts, we would also expect humanities researchers to be less likely to publish in the national language. That is, of course, all things equal.

Limitations of the analysis

Finally, we want to discuss some of the limitations of the analysis. First of all, Europeanization is not the only reason why humanities researchers publish in English. Europeanization takes place parallel to globalization. It would be extremely difficult to separate the effects of the two processes, let alone their consequences. And that is not the aim of the paper either. What we have done is simply to 1) show how Europeanization contributed to changes in the conditions of publishing in the humanities in Denmark around the turn of the millennium, and 2) show how researchers across humanities disciplines responded to those changes. Second, the interest in producing nationally relevant research is not the only reason why humanities researchers publish in the national language. There can be many other reasons. Researchers in educational studies, for example, do not participate in cultural nation-building, but write in the national language because they respond to a demand for applied research from the Danish field of primary education. As mentioned, the aim of the paper is not to formulate a comprehensive theory of publishing in the humanities. It is simply to contribute to such a theory by pointing to the involvement of specific disciplines in cultural nation-building.

As discussed, the PhD dissertations analyzed in the longitudinal analysis have certain advantages over the international bibliographic databases Web of Science and Scopus. But they also have some of the same limitations. Like journal articles, PhD dissertations represent a specific scientific product, which is not necessarily representative of other products. Monographs and edited volumes, for example, are relatively likely to be written in national languages, and journal articles in international language (English). The question is whether the share of English PhD dissertations is a good estimate of the overall share of English publications in the humanities in Denmark? Comparing the language profile of the PhD dissertations with all humanities publications in the national bibliographic database should give some indication. In 2012, for example, the percentage of Danish, English and other-language dissertations was 47, 52 and 1, respectively. The percentage of Danish, English and other-language publications in the national bibliographic database was 44, 51 and 5, respectively. These numbers suggest that the PhD dissertations estimate the share of English dissertations

very accurately. However, they slightly overestimate the share of Danish publications, and slightly underestimate the share of other-language publications.

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Appendix D

Table D.1: Danish participation in humanities and social science research activities funded by the Framework Programs, 1994-2013

	Activities (N)		Budget (EUR)	
	DK participation	All activities	DK participation	All activities
FP4 (1994-1998)	44	168	NA	NA
FP5 (1998-2002)	127	741	136,362,479	756,564,165
FP6 (2002-2006)	35	144	108,453,733	300,874,718
FP7 (2007-2013)	60	253	273,245,503	783,708,018

Source: European Commission CORDIS data.

Notes: 1) we include activities funded by the sub-program Targeted Socio-economic Research Programme for FP4, Socio-economic Knowledge Base for FP5, Citizens and Governance in a Knowledge Base Society for FP6 and Socio-economic Sciences and Humanities for FP7. 2) Sub-programs and activities are not completely comparable across Framework Programs. 3) Sub-programs include both social science and humanities research activities. 4) Budget for FP4 is not applicable due to missing data. 5) Numbers for FP5 do not correspond to recently published numbers (Schögler and König 2017).

Table D.2: Dissertation language on year (row profiles)

	Danish		English		Other	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
1992	8	73%	2	18%	1	9%
1993	11	69%	5	31%	0	0%
1994	30	79%	5	13%	3	8%
1995	18	64%	10	36%	0	0%
1996	30	63%	14	29%	4	8%
1997	22	54%	14	34%	5	12%
1998	41	60%	24	35%	3	4%
1999	64	66%	30	31%	3	3%
2000	53	62%	29	34%	3	4%
2001	69	64%	35	33%	3	3%
2002	47	55%	34	40%	4	5%
2003	84	63%	43	32%	6	5%
2004	88	63%	49	35%	2	1%
2005	79	59%	53	39%	3	2%
2006	58	54%	42	39%	7	7%
2007	77	56%	55	40%	6	4%
2008	78	61%	45	35%	5	4%
2009	70	46%	78	52%	3	2%
2010	88	56%	64	41%	6	4%
2011	63	47%	70	52%	1	1%
2012	52	47%	58	52%	1	1%
Entire period	1,130	58%	759	39%	69	4%

CONCLUSION: RESEARCH AIMS, FINDINGS, CONTRIBUTIONS, GENERALIZABILITY, LIMITATIONS AND FUTURE RESEARCH

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Abstract

This dissertation explored various practices involved in the production and communication of humanities research in Denmark in the late-twentieth and early-twenty-first century, a period characterized by increasing demand for applied research, on the one hand, and increasing levels of transnational research collaboration, communication and mobility, on the other. The three papers of the dissertation included 1) a cross-sectional analysis of research production and communication, 2) a longitudinal analysis of research production and 3) a longitudinal analysis of research communication. In the conclusion, I restate the overall aim of the dissertation and the aims of the individual papers, summarize the most important findings and contributions, consider the generalizability of the findings, discuss some limitations of the analyses and point to directions for future research on the humanities. The dissertation contributes theoretically as well as empirically to the historical and sociological literature on the humanities. However, it also has important limitations related to the theoretical construction of the research object and the empirical material. Future research should address these limitations and develop theories and methods even further, for example theories of scientific disciplines and methods for studying research production and communication across disciplines in the global scientific field.

Keywords

Sociology of science; major fields of science; humanities; disciplines; research production; research communication

Aim of dissertation and individual papers

Overall aim of dissertation

The overall aim of the dissertation was to study the practices through which research is produced and communicated across humanities disciplines in Denmark in the late-twentieth and early-twenty-first century. You could say that the aim was to provide an answer to the question: what do humanities researchers do? In line with recent developments in the sociology of science, the dissertation focused on research practices rather than research products. It was the ambition to draw systematic comparisons of research practices between disciplines in order to identify general as well as discipline-specific tendencies. Even though the objective of the comparative analysis was not to make causal inference, the analysis did engender a series of hypotheses about the causes of differences in research production and communication practices between humanities disciplines. The temporal scope of the dissertation was limited to the late-twentieth and early-twenty-first century. However, the individual analyses, especially those in paper 1 and 3, were informed by the history of the humanities in Denmark since the early-nineteenth century. The geographical scope of the dissertation was limited to Denmark. However, the individual analyses, especially those in paper 1 and 2, were informed by the global history of the humanities.

Aims of individual papers

The individual papers of the dissertation addressed the question of research production and communication in the humanities from three different perspectives. Paper 1 provided a cross-sectional exploratory analysis of a wide range of practices involved in research production and communication. Based on responses from an e-mail questionnaire survey from 2013, the paper showed how these practices combined into identifiable research styles in the humanities in Denmark in the early-twenty-first century. It also showed how disciplines differed according to research style. Paper 2 provided a longitudinal analysis of practices involved in research production, specifically choices of empirical material and analytical methods. Based on data from a coding of PhD dissertations defended at Danish universities between 1992 and 2012, the paper identified general as well as discipline-specific methodological tendencies in the humanities between the late-twentieth and early-twenty-first century. Finally, paper 3 provided a longitudinal analysis of research communication practices, specifically choices of publication language. Based on data from the coding of PhD dissertations, the paper identified general and

discipline-specific tendencies in publication language between the late-twentieth and early-twenty-first century. Paper 2 and 3, that is, describe the processes leading up to the situation described in paper 1.

Findings and contributions

Summary of most important findings

Paper 1 identified four research styles in the humanities in the early-twenty-first century, including 1) a quantitative, 2) a qualitative, 3) a basic and, more surprisingly perhaps, 4) an applied style, characterized, among other things, by collaboration with and communication to public authorities and private companies. The analysis suggested that the applied style was introduced by new humanities disciplines in the late-twentieth or early-twenty-first century. A defining feature of the applied style of humanities research was the use of observations and qualitative interviews. Paper 2 showed that the use of exactly these types of empirical material increased in multiple humanities disciplines between the late-twentieth and early-twenty-first century. The paper also showed that the increase in the use of anthropological material was correlated with a decrease in the use of different texts, including fictional literature and documentary sources. These and other findings suggest that new styles of humanities research gradually replaced traditional library research as the most common style of humanities research during the late-twentieth and early-twenty-first century. Finally, paper 3 showed that research communication, specifically communication language, changed considerably during the late-twentieth and early-twenty-first century. During that period, English replaced Danish as the primary publication language of humanities researchers in Denmark. However, researchers from disciplines involved in cultural nation building were less likely to adopt English as their language of choice.

Contributions to the literature on the humanities

The dissertation contributes to the literature on the humanities with empirical studies of research production and communication. With a few exceptions, historical and sociological studies of the humanities are case studies of individual researchers, laboratories, disciplines or other relatively small groups of researchers. The survey and the coding of PhD dissertations allowed for studies of research production and communication across disciplines. Research communication could also have been studied using international bibliographic databases.

However, the available databases are biased toward certain languages, and are, consequently not suited for studies of communication language. The dissertation makes several theoretical contributions. Paper 1 shows that the concept of style is particularly useful for describing the distribution of research production and communication practices across disciplines in the humanities. Paper 2 shows how methodological changes take place in the humanities through borrowings of empirical materials and analytical methods from across disciplinary boundaries in the context of competition over recognition. Finally, paper 3 suggests that involvement in cultural nation-building, specifically the production of national history, culture and language, continues to define choices of publication language in the humanities in the late-twentieth and early-twenty-first century.

Generalizability of the findings

Obstacles to making generalizations

There are several obstacles to making generalizations beyond the Danish case. One of them is the varying boundaries of the humanities, that is, the fact that the category of the humanities does not necessarily refer to the same group of disciplines in one national context as it does in another. The dissertation included a series of disciplinary categories that are almost always included in the humanities: Archeology, Art and architecture, Languages and philology, Literature, Music and theatre and Philosophy and history of ideas. It included a series of disciplinary categories that are sometimes included in the humanities: Anthropology, ethnography and ethnology, Educational studies, Film and media studies, History, Linguistics, Psychology and Religious studies. And it included one disciplinary category that is almost never included in the humanities: Theology. The decision to include Theology in the survey and the coding of PhD dissertations was based on the institutional status of the discipline at Danish universities when the survey and coding were carried out. However, in most national contexts, theology is institutionally independent of the humanities. It falls beyond the scope of the dissertation to discuss the relationship between theology and the humanities in the history of Danish and European universities.

Making some generalizations anyway

Denmark does constitute an interesting case for the study of the humanities or any other major field of science. What makes Denmark interesting is its peripheral or semi-peripheral position

in the global scientific field. In peripheral or semi-peripheral national scientific fields, researchers frequently import concepts and methods from the central scientific fields. That is also the case in Denmark. Since the early-nineteenth century, different national fields have occupied the center of the global scientific field, including France, Germany and, since the mid-twentieth century, the United States. Britain has occupied a relatively central position throughout the entire period, and the Soviet Union from the mid to the late-twentieth century. As a consequence, humanities researchers in Denmark have imported concepts and methods from those national contexts. The same goes for humanities researchers in other peripheral or semi-peripheral national scientific fields, at least within the European context. All things equal, one would expect to find similar tendencies in the production and communication of research between the late-twentieth and early-twenty-first century. Of course, all things are not equal, and peripheral and semi-peripheral national scientific fields vary according to many things, including the level of demand for research from public authorities and private companies. In Denmark, for example, the applied style of humanities research developed in the context of increasing demand.

Limitations and future research

Limitations of the analyses

The limitations of the analyses of the dissertation are empirical as well as theoretical. While data from the coding of PhD dissertations cover 75 percent of the estimated total number of dissertations from the observed period, the survey data cover only 32 percent of the estimated total number of researchers active during the year of the survey. The relatively low response rate is an important limitation of the analysis. It means that estimates of population parameters could be biased toward certain styles of research, possible toward more quantitative and applied styles of research. Given the state of the art, however, the analysis does constitute a significant contribution to the literature. An important theoretical limitation of the analyses relates to the categorization of disciplines. The analyses of the dissertation are based on disciplinary categories from national research statistics. However, the categories correspond poorly to the contemporary space of disciplines. As an example, national statistics do not include new interdisciplinary fields of research, such as area studies, cultural studies, gender studies and science and technology studies. My co-authors and I came up with new disciplinary categories

to cover those fields. However, the new categories group very diverse researchers (in paper 1) and PhD dissertations (in paper 2 and 3).

Directions for future research

Future research on the humanities can take many different directions. The individual papers of the dissertation each engender new questions about the production and communication of research in humanities disciplines. Empirically, future research should study the humanities in other national scientific fields or, even better, in the global scientific field. There are some qualitative studies of the humanities in the global scientific field. International bibliographic databases could serve as a starting point for quantitative analysis. As the dissertation showed, humanities research production and communication are increasingly defined by transnational collaboration, communication and mobility. Therefore, it makes more sense to study the humanities in the context of the global scientific field. Theoretically, future research should develop better disciplinary categories. What do we understand by scientific disciplines? How do we construct disciplinary categories? And how do we ascribe researchers or research products to different categories? At the moment, there is not much discussion of these fundamental questions. Another fundamental question is how we deal with the fact that the same researchers or research products can belong to multiple disciplines at the same time? The dissertation has only touched upon these questions, which are of relevance, not just for the history and sociology of the humanities, but for the history and sociology of science.

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