Following the Footnotes

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Following the Footnotes

A Bibliometric Analysis of Citation Patterns
in Literary Studies

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Abstract

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This thesis provides an in-depth study of the possibilities of applying bibliometric methods to the research field of literary studies. The four articles that constitute the backbone of this thesis focus on different aspects of references and citations in literary studies: from the use of references in the text to citation patterns among 34 literature journals. The analysis covers both an Anglo-Saxon context as well as research in Swedish literary studies, and the materials used include *Web of Science* data, references in the Swedish literature journal TFL (*Tidskrift för Litteraturvetenskap*) and applications to the Swedish Research Council (Vetenskapsrådet). A study is also made of the influence of one single publication—Walter Benjamin's *Illuminations*—and its impact in literary studies and in wider academia.

The results from the four articles are elaborated upon using a theoretical framework that focuses on differences in the social and intellectual organization of research fields. According to these theories literary studies can be described as a fragmented, heterogenic, interdisciplinary and 'rural' field with a diverse audience. The fragmented and rural organization of the field is reflected in low citation frequencies as well as in the difficulties in discerning research specialities in co-citation mappings, while the analysis of the intellectual base (highly cited authors) is an example of the heterogenic and interdisciplinary character of the field, as it includes authors from many fields across the humanities and the social sciences.

The thesis emphasizes that bibliometric studies of research fields in the humanities need to incorporate non-English and non-journal publications in order to produce valid and fair results. Moreover, bibliometric methods must be modified in accordance with the organization of research in a particular field, and differences in referencing practices and citation patterns ought to be considered. Consequently, it is advised that bibliometric measures for evaluating research in these fields should, if used at all, be applied with great caution.

Keywords: Bibliometrics, citation analysis, scholarly communication, research practices, literary studies, the humanities, visualization

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List of Papers

I.   Hellqvist [Hammarfelt], Björn (2010). Referencing in the humanities and its implications for citation analysis. *Journal of the American Society for Information Science and Technology*, 61(2), 310-318.

II. Hammarfelt, Björn (2011). Interdisciplinarity and the intellectual base of literature studies: Citation analysis of highly cited monographs. *Scientometrics*, 86(3), 705-725.

III. Hammarfelt, Björn (2011). Citation analysis on the micro-level: The example of Walter Benjamin's Illuminations. *Journal of the American Society for Information Science and Technology*, 62(5), 819-830.

IV. Hammarfelt, Björn (2012). Harvesting footnotes in a rural field: Citation patterns in Swedish literary studies (to appear in *Journal of Documentation*).

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Contents

Acknowledgments

Abbreviations

ACA – Author Co-citation Analysis
A&HCI – Arts and Humanities Citation Index
DDC – Dewey Decimal Classification System
ERIH – European Reference Index for the Humanities
ISI – Institute for Scientific Information
LIS – Library and Information Science
PCA – Page Citation Analysis
RES – Research Evaluation System
SCI – Science Citation Index
SSCI – Social Sciences Citation Index
SSH – Social Sciences and Humanities
STS – Science and Technology Studies
TFL – Tidskrift för Litteraturvetenskap
WoS – Thomson Reuter Web of Science

1. Introduction

"Academic texts are usually more interesting for their footnotes than their main argument—that is, for what they consume rather than what they produce." (Steve Fuller *2005*, *The Intellectual*, p. 131)

Referencing is a highly organized, ritualized, and important practice in academic scholarship. The reference is one of the most familiar symbols of research, and a text without references is hardly seen as scientific or scholarly. The examination of footnotes and references might appear to be a rather esoteric exercise, but for those interested in the flow and exchange of ideas, the coming and going of trends and the impact and dissemination of research the reference is a unit of particular interest. If references are regarded as 'the life blood of academia,' this thesis is interested in one particular part of the 'blood flow' of scholarly literature: the humanities.

The emerging focus on the giving of references in contemporary scholarship coincides with the development of a new culture in science: the citation culture (Wouters, 1999a). This culture is not yet as strong within the social sciences and the humanities, but increasingly these fields are interested not only in giving references but also in receiving citations.[1] Bibliometric studies in general and citation analysis of scholarly fields in particular are increasingly used to study, map, and evaluate academic research. Previous studies have mainly been preoccupied with the natural sciences, but growing interest is directed at the social sciences and the humanities. Citation counts are not yet widely used to evaluate fields in the humanities, foremost due to the limitations of existing databases, but several bibliometric approaches for evaluating the humanities have been proposed (Moed, Luwel & Nederhof, 2002, Torres-Salinas & Moed, 2009; Linmans, 2010). Obviously, the evaluation of research using bibliometric methods is a controversial issue that cannot be resolved within a study of this kind. Instead, this thesis aims to contribute to a critically informed and balanced debate.

This project is fueled by an interest in research practices, communication patterns, and the visualization of information structures. Several attempts have been made to map disciplines and the macrostructure of science—see Börner (2010) for an illustrative overview—and the aim of these maps is

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[1] The distinction between a reference (given in a document) and a citation (received by a document) is used in this study when it serves the argument to make a difference between the two.

often to capture the 'landscape' of research and its development. However, few mappings cover the humanities or research fields in the humanities; this often due to a belief that neither the material used nor the bibliometric methods applied could accurately depict these fields. This project tests this assumption in four studies that in an explorative way investigate how bibliometric methods can be applied to a research field—in this case literary studies—in the humanities.

This dissertation is driven by an effort not only to perform bibliometric analysis *on* the humanities, but also to use, and to critically study, bibliometric methods *from* the perspective of the humanities. In this effort it tries to develop an approach where theories and methods are adapted to the structure and epistemology of the humanities. This is important, as most bibliometric methods have been developed for the analysis of disciplines and fields that differ from the humanities in both intellectual organization and publication patterns. Thus, the limits of existing approaches warrant the development of a bibliometrics *for* the humanities, and approaches and methods have been modified and further developed in order to make them applicable to the arts and humanities.

The choice of bibliometrics for studying knowledge structures in the field of literary studies is motivated by an assumption that quantitative studies on an aggregated level can produce knowledge that would not be attainable using other methods. Interviews, surveys and ethnographical methods are important approaches for studying communication patterns and structures but "[t]he bibliometric analysis may, on the other hand, reveal regularities and patterns in scientific communication which are not consciously available to the actors involved—and therefore should not be asked of them—yet structure their behavior." (Leydesdorff, 2001, p. 20). Hence, bibliometrics is used to study the actions and artifacts—references and publications—of communication rather than accounts about these actions made by the actors involved. The results of the analysis can then be contextualized using qualitative accounts and theoretical tools, with the aim of giving a more accurate view of communication structures within a discipline or a field.

The title of the thesis—"Following the footnotes: A bibliometric analysis of citation patterns in literary studies"—has several connotations. First, and most important, it means 'to follow' the footnotes in the sense of mapping references on their journey through the disciplinary landscape. Second, it points to the question of 'what will follow' after the footnote. The footnote in its traditional sense has been described as an endangered species (Zerby, 2003), and there is no doubt that referencing practices in the humanities will change in the meeting with the citation culture of science and the digital culture in which a growing share of knowledge is disseminated. This dissertation deals with the referencing practices and citation patterns of today, but the intention is also to give some insights to that which might 'follow.' Finally, the title alludes to the heightened awareness and importance of the

reference and its transaction into citations, which through the use of bibliometric methods for research evaluation is 'followed' by rewards such as academic positions or research grants.

Rationale and Aim of the Thesis

Although the social sciences and the humanities have attracted the interest of bibliometricians in recent years, communication structures, intellectual networks, and citation patterns within these fields are still largely unexplored. Sociologists of science have preferred to study the writing of texts and the use of references in the natural sciences, whereas writing and citing in the humanities has received less attention. This could be due to scholars in the humanities and social scientists focusing on the more prestigious scientific text, but as MacDonald (1994, p. 10) states: "[…] humanist and social scientists stand to gain from monitoring their own practices." Thus, knowledge about publication and referencing practices, intellectual networks, and distribution of citations is valuable not only for researchers interested in scholarly communication, the sociology of science, and bibliometrics, but also for scholars in the humanities who are interested in structures and developments in their own fields.

This thesis depicts the possibilities and complexities of studying a research field such as literary studies using bibliometric methods. Literary studies was chosen because of its long history as one of the major research fields in the humanities. A further reason for studying citation structures in literary studies is that research and publication practices in this field differ to a large degree from those in fields closer to the social and natural sciences.

The study focuses on how the social and intellectual organization of a research field influences the practice of referencing as well as citation patterns and structures. In this it builds on the notion that: "[…] citations are a way of ritualistically affirming group goals and norms, of demonstrating group membership and identity (Whitley, 2000, p. 28). Thus, it is assumed that the organization of research fields influences how references are given and distributed.

The project has a twofold aim: first, to study how the social and intellectual organization influences citation patterns and structures in the research field of literary studies, and second, to investigate what the use—as well as the outcome—of bibliometric analysis says about the limits of these methods. An additional purpose of the thesis is to provide a comprehensive account and a critical overview of bibliometric research on the humanities, something that so far has been lacking.

The overarching research questions constitute a background from which the more specific studies were formulated and designed. These questions are formulated below:

I.   How can citation patterns and referencing practices in literary studies be explained by the social and intellectual organization of the field?
II. How can bibliometric methods be modified in order to be applicable to the research field of literary studies?
III. What conclusions regarding the evaluation of research in the humanities using bibliometric methods can be drawn on the basis of referencing practices and citation patterns in literary studies?

These questions should be seen as guidelines for the project as such, and more detailed aims and questions are found in each of the four articles. The open aim and the deliberately wide and general questions emphasize the explorative thrust of the thesis. In the concluding discussion, the three main research questions will be evaluated, and implications for further research on the humanities using bibliometric methods will be outlined.

Structure of the Thesis

This dissertation is organized in eight chapters, four of which are journal articles that have been published or are about to be published. The first chapter provides an introduction to bibliometrics as a field of research and its position within library and information science (LIS) as well as a discussion regarding definitions of the humanities and literary studies. An overview of previous research on scholarly communication and bibliometric in the humanities is given in the second chapter, while the third chapter presents the theoretical framework together with an introduction to visualization of research fields and the techniques of bibliometric mapping. Then follow four analyses that are conducted on different levels of aggregation, using a range of materials and applying various perspectives on the results gained. However, they are also intertwined with and build on each other, both implicitly and explicitly.

The first study (chapter four) focuses on how references are given and motivated in the text. It discusses the implications that referencing practices within the humanities have for the use of bibliometric methods, and the principal unit of analysis is the reference/citation. The first study is an attempt to theoretically understand referencing practices in the humanities and how these affect citation patterns and structures. The second study (chapter five) is broad: both in time and in the inclusion of journals, taking a bird's eye view on literary research in the English language. It analyzes the formation of an intellectual base ('canon') and the interdisciplinary import of ideas to literary studies using a selection of literature journals. The third article (chapter six) is directly derived from previous findings as it focuses on one particular publication that was highly cited in the analysis of the intellectual base. This study illustrates the impact of one single publication—Walter

Benjamin's *Illuminations*—and its dissemination within literary studies as well as in wider academia. Hence, it can be understood as an attempt to understand why a certain publication becomes widely cited. The last analysis (chapter seven) focuses on Swedish language material in the form of the Swedish literary journal *Tidskrift för Litteraturvetenskap* (TFL) as well as grant applications to the Swedish Research Council (Vetenskapsrådet). This study highlights the importance of going beyond English-language materials, and it compares citation characteristics and patterns in Swedish literary studies with findings from the previous articles.

These studies cover different layers of scholarly communication—from a single reference to a large selection of journals, and in doing so they provide a multitude of perspectives on literary studies as a research field. The findings from the four studies are analyzed using a joint theoretical framework that combines theories on the 'social and intellectual organization of research fields' (Whitley, 2000) and 'academic tribes' (Becher & Trowler, 2001) with concepts such as 'mode 2' (Gibbons et al., 1994) and 'interdisciplinarity' (Klein, 1996). The fundamental unit of analysis in all studies—although the four articles focus on different materials and uses various methods—is the reference. Each of the four chapters provides a unique perspective on referencing practices and citation patterns in literary studies, with the intention that these studies together will answer or at least provide further insights into the main questions addressed in this thesis.[2]

How the findings of the four articles can be summarized and integrated is shown in a final chapter, where the main research questions are discussed and implications for the future are outlined. A few reflections on the attempts of evaluating the humanities with bibliometric methods are also given. Last, the reader will find a summary of the thesis in Swedish.

Bibliometrics as an Research Area

Since the 1960s, scholars have introduced several terms and concepts for the study of communication patterns using statistical methods. All these 'metrics' have in common that they analyze information structures on an aggregated level in order to describe distributions and identify patterns. Alan Pritchard coined the term 'bibliometrics' in 1969 as a replacement of the previously used 'statistical bibliography' thereby defining bibliometrics as: "[…] the application of mathematical and statistical methods to books and other media of communication." (Pritchard, 1969, p. 349).[3] In the same year

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[2] The four articles that constitute the backbone of this thesis have been formatted in accordance with the design of the thesis as a whole, and they are reproduced as chapters and not as attached articles. This design was adopted in order to enhance coherence and readability.

[3] The term was used by Paul Otlet as early as 1934 in the chapter "Le Livre et la mesure – Bibliometrie" in *Traiteé de documentation* but then in another context (de Bellis, 2009, p. 9).

the term 'scientometrics' was introduced by Nalimov and Mulchenko and defined as: "[…] the application of those quantitative methods which are dealing with the analysis of science viewed as an information process." (Nalimov & Mulchenko, 1969: cited from Glänzel, 2003). As already implied by these definitions, the two concepts overlap: scientometric research can deal with units other than publications, and bibliometrics can be applied to non-scholarly publications (Broadus 1987a).[4]

It is difficult to establish when the first bibliometric study was conducted; however, the development of a more advanced bibliometrics can be situated in time to the 1920s and 1930s when three important bibliometric laws were introduced: Lotka's law (1926), the Bradford distribution (1934) and Zipf's law (1936) (de Bellis, 2009, p. 75). The formulation of these laws is an important part of the history of modern bibliometrics, as the use of these measures allowed scientists to discover patterns within scholarly communication that simple counting could not reveal.[5]

Another crucial event in the history of bibliometrics is the establishment of the Science Citation Index (SCI), first published by the Institute of Scientific Information (ISI) in 1960. The *Science Citation Index* was later followed by the *Social Sciences Citation Index* (1970) and the *Arts & Humanities Citation Index* (1975) and these databases are today challenged by *Sciverse Scopus* (2004) and the web-based *Google Scholar* (2004). The creator of SCI, Eugene Garfield, imagined that the index would profoundly change the way research was done, but the result was not what he initially envisioned. At first the index was seen as a tool for information retrieval, but quite soon its potential for science studies and science evaluation was recognized. The creation of the index was associated with problems that were both technical and economic in nature, but it became a success, and over time it would help to establish bibliometrics as a research field (Wouters 1999b).

The history of bibliometrics is often described as a gradual development of methods and available materials, but bibliometrics also shares a common history with qualitative and critical studies of science. The birth of science studies can be placed at different occasions, authors and contexts. The writings of Ludwig Fleck (1992 [1935]) and Thomas Kuhn (1996) [1962] as well as the contributions made by Robert K. Merton (1973) can be considered as central for the establishment of the sociology of science. However, from the perspective of bibliometrics, a passage from Derek de Solla Price and his *Little Science, Big Science* (Price, 1963, vii) seems a suitable point of departure. In the preface to his famous essay he frames the questions: "Why

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[4] A broader concept is that of informetrics: "[…] the study of quantitative aspects of information in any form, not just records or bibliographies, and in any social group, not just scientists." (Tague-Sutcliffe, 1992, p. 1). The wider term informetrics incorporates other 'metrics' such as bibliometrics, scientometrics, cybermetrics and webometrics.
[5] For a more thorough account of the history of bibliometrics the reader could turn to de Bellis (2009), Godin (2006; 2007) or Broadus (1987b).

should we not turn the tools of science on science itself? Why not measure and generalize, make hypotheses, and derive conclusions?" This has been the credo of science studies, although the tools of 'the science of science' in the case of the contemporary science and technology studies (STS) are quite different from those used by Price. Nevertheless, the idea of studying science like any other phenomenon, with the use of the same methods and with the presumption that science in many regards does not differ from other human activities is something that sociologists of science—from quantitative bibliometricians to qualitative STS-scholars—share.

Today, the sociology of science is divided into at least two branches: a qualitative one that tends to have a social perspective on science, and a quantitative one that primarily focuses on statistical methods for depicting the structure and development of science. A similar divide is seen in the discussion about the theoretical foundation of bibliometrics—a debate that is illustrated by the call for a citation theory, where some argue for a theoretically informed model for explaining the role of citations (e.g. Luukkonen, 1997), while others suggest that a theory of citations is of limited use in explaining bibliometric distributions (e.g. Van Raan, 1998).

It has been suggested that science studies has reached maturity at the price of a division between quantitative studies and qualitative theories (Leydesdorff, 1989, p. 334). The significant theoretical and methodological difference between science and technology studies (STS) and bibliometrics is one reason for this, as bibliometrics often takes the organizational unit as a point of departure of the analysis, while STS focuses on the conceptual and cognitive aspects of science (Leydesdorff, 1989, p. 337). This disagreement limits the possible integration of theories, but the different perspectives and the combination of quantitative methods and qualitative theorizing, on the other hand, could open up for innovative studies of research fields and communication structures.[6]

The debate regarding the theoretical foundations of bibliometrics is fueled by its application in the evaluation of research. Verification, surveillance, governance, and evaluation are all intrinsic features of modern society. In an influential work, Powers (1999) has framed the term 'the audit society,' a society that spends more and more time and resources on evaluation and monitoring. Bibliometrics has emerged as a promising method in the efforts to efficiently evaluate universities and research fields. Bibliometrics is inexpensive, it can appear to be more objective than peer review and seems accessible to managers and politicians. Still bibliometric data needs interpretation and knowledge about methods and context in order to be understood and evaluated. Researchers in the specialty of bibliometrics are often fully aware

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[6] Science studies or the sociology of science are here viewed as larger fields of research that incorporate both STS and bibliometrics. However, this is not the only possible definition, as science studies, STS, and sociology of science often are used interchangeably.

that they do not measure quality and that experts from the field studied must validate the results gained, but this is often ignored when the data are used in decision-making or referred to in political discussions. The notion that bibliometrics is simple and easy to use and that it provides objective data is a major problem for bibliometric research—as Gläser and Laudel (2007, p. 119) put it: "Bibliometrics thus confronts the ghost it called." The main challenge for bibliometrics is therefore to remain critical towards its own assumptions and theories at a time when bibliometric methods are increasingly used to evaluate research. Theories and critique from science studies at large play an important role in this endeavor.

Scholarly communication, as well as bibliometrics, is an established and recognized research area in library and information science (LIS), and at the same time a strong specialty of its own that stretches beyond LIS departments into other social sciences, statistics, and mathematics. The position of bibliometrics within the field of LIS has, not surprisingly, been analyzed using citation data. The results of these studies vary according to the analytical level, the selection of journals, and the chosen methods, as is illustrated by the different results achieved by White and McCain (1998), Moya-Anegon, Herrero-Solana, Jiménez-Contreras (2006) and Åström (2007; 2010). A common delineation—which is given in the name of the discipline as such—is the one between 'library science' and 'information science,' and bibliometrics is considered a part of the latter branch.

Bibliometric approaches are also directly associated with library practices such as acquisition and collection development. Bibliometric methods are used to identify and select journals and books for inclusion in research libraries (Edwards 1999; Enger 2009). University libraries are also to an increasing extent becoming a common setting for establishing local bibliometric expertise at university institutions. Thus, bibliometrics is to a growing degree a part of the functions of research libraries (Åström & Hansson, forthcoming). This furthers the importance of bibliometrics not only in information science but also in library science. Thus, bibliometrics is an interdisciplinary research field that is rooted in the practical application of bibliometric methods as well as in a more theoretically oriented sociology of science. It is an important and growing field within LIS, and it seems that knowledge concerning, as well as skills in, bibliometric methods are increasingly important for libraries and librarians.

The Humanities and Literary studies: Definition, Delineation, and Operationalization

The 'humanities' and 'literary studies' are broad concepts that can be defined in various ways depending on the context in which they are used. Thus,

a description of how these concepts are defined and operationalized in the context of this study is necessary. The term 'humanities' is understood here as a group of disciplines rather than as an ideal or an idea. The term 'humanities' can be compared to the German *Geistenwissenschaften* or the French *sciences humaines,* which are broader concepts in the terms of disciplines included but narrower in the sense that they are limited to the scholarly (scientific) sphere. The origin of the word and its use as a term for a range of disciplines can be traced back to ancient Roman times when "[h]umanistic inquiry became associated with exploring the meaning and purpose of human existence expressed in particular symbolic modes." (Klein, 2005, p. 15). Renaissance scholars carried on the tradition of the humanities, and were also the first to be called humanists. The division of knowledge that resulted in a particular set of disciplines being labeled the humanities occurred much later. Especially Wilhelm Dilthey's separation between *Naturwissenschaften* (natural sciences) and *Geisteswissenschaften* ('spiritual' or human sciences) was an important step in this direction. The humanities was long defined as the study of Greek and Latin, and it was not until the 20th century that it came to represent a group of disciplines interested in human expressions and artifacts (Klein, 2005, p. 22-23).

The lists of fields that are defined as the humanities differ between contexts and countries. The Organization for Economic Co-operation and Development (OECD*)* lists history, archaeology, genealogy, literature, languages, philosophy, arts, history of arts, religion, and theology (OECD, 2002, p. 68), while *The European Reference Index for the Humanities* (ERIH) distinguishes fifteen fields in the humanities (including educational research as well as gender studies and psychology). In the U.S. on the other hand the *Humanities Resources Center* include eleven fields (Leydesdorff, Hammarfelt & Salah, 2011).[7] Thus, the definition of fields either as social science fields or humanist fields is dependent on the context and purpose of the categorization. An example of a discipline in which researchers disagree on whether they belong to the social sciences or the humanities is history (Katz, 1995). On a local level, the definition of a research field as belonging either to the social sciences or the humanities can be decided by institutional arrangements. Thus, the definition of research fields as either social science or humanities is governed by institutional as well as epistemological considerations, which further depend on the organization of research in countries or regions. Due to the blurry boundaries of the humanities and the ever-changing disciplinary landscape, no definite list of fields in the humanities can be given. However, a core of fields—that are on all 'lists'—can be dis-

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[7] These fields are English language and literature, foreign languages and literature, history, philosophy, religion, ethnic-, gender- and cultural studies, American studies and area studies, archeology, jurisprudence, selected arts, and selected interdisciplinary studies.

tilled: art, philosophy, music, language, literary studies, and religious studies.

Thus, the term 'humanities' is used in this thesis to point to a particular set of research fields that differs from the natural sciences and the social sciences in intellectual organization and in publication practices. The conclusions drawn regarding the possibilities of bibliometric methods are therefore more directed towards fields where monographs are an important publication channel and where a national audience plays an important role. Thus, linguistics, archeology, and to some extent philosophy, which to a larger degree publish in international English-language journals, are somewhat exceptional in this regard.

Literary Studies as a Research Field

One reason for focusing on literary studies in this thesis is that the field of literature—especially English literature—has been the backbone of the humanities since the start of the 20th century. Literature was recognized as a subject at English-language universities during the late seventeenth and early eighteenth century (Klein, 2005, p. 84). Before then the classics—Latin and Greek—was the fundamental discipline of the humanities (Klein, 2005, p. 25). The role of literary studies within the humanities is also emphasized by its central position in the macrostructure of the arts and humanities as it emerges in analyses of citation and faculty data (Leydesdorff, Hammarfelt & Salah, 2011).

Research fields can be defined by their epistemological foundation, the subject matter, and the goal and purpose of the field. However, defining the purpose of a field soon turns into a disciplinary quarrel, as different scholars and branches have their own views on the identity of the field. In his ethnographical study of 'English people'—students, teachers, and researchers in English literature—Evans (1993) proposes that knowledge about the core of the discipline (group) is essential for understanding the boundaries of a discipline. However, the existence of a core of literary studies is an issue of constant debate: "The core can be generically various. It can be the *material*: rocks for the geologist, literature for English people. But it can also be a question of *technique*: crystallography, close reading or statistical analysis. And it could be *theory*: Marxist or Structuralist." (Evans, 1993, p. 161). Many would agree that 'literary studies' is a field occupied with the study of literature, but then other questions emerge: What is literature? What is a text? And what is the difference between the two? Klein (1996, p. 172) sees these discussions as central for the field: "[…] in literary studies, differences over canon, object, interpretation, and practice lie at the heart of disputes about the identity of discipline."

Research fields and scholarly disciplines are inherently fluid entities that, depending on vantage point, perspective, and approach, may be defined in

numerous ways.[8] Boundaries are redrawn, new fields or research specialties emerge while others disappear. Research fields are also renamed either as a result of political reforms, as in Sweden when literary history became comparative literature in the early seventies (Helgesson, 2005, p. 307f), or because of theoretical movements within a field e.g. women studies becoming gender studies (Stromquist, 2001).

Literary studies can partly be regarded as a discipline—with shared publication outlets and associations—and partly as a conglomerate of different disciplines with their own infrastructure and disciplinary culture. The concept of a discipline is less straightforward and well defined than one might think. Disciplines could be viewed as systems that produce statements about the world, but disciplines are limited and restricted while the 'discursive formation' in which they are constituted goes far beyond disciplinary boundaries (Foucault, 1971, p. 179). Thus, disciplines are not to be confused with topics, discourses, subjects or interests; rather they should be understood as knowledge institutions or knowledge systems. A discipline is partly defined by institutional structures within departments, but "[…] international currency is an important criterion, as is a general though not sharply defined set of notions of academic credibility." (Becher & Trowler, 2001, p. 41). Publication outlets, academic conferences, and associations can be regarded as other important features of a discipline. A further defining trait of an academic discipline is the existence of undergraduate and graduate education as well as textbooks and a core of canonical publications. The control over how knowledge is disseminated and acknowledged is an important trait of a discipline. Lenoir (1997, p. 47) points to this function when writing that: "Disciplines are the institutional mechanisms for regulating the market relations between consumers and producers of knowledge." In regulating the market of knowledge, disciplines also distributes status and rewards. Thus, there is a strong connection between discipline and power, and authors such as Foucault (1971) and Bourdieu (2001[1984]) have asserted this connection.

The important point is that disciplines are social and foremost organizational units rather than epistemological ones. To be defined as a discipline requires that a particular area of research is recognized and acknowledged, not only by researchers themselves but also by outsiders. As Turner (2000, p. 47) suggests: "Disciplinary identity is just that, a name or an understood identity that is realized in degree-granting bodies, such as departments, using the distinguishing mark both to identify its degree holders and at least occa-

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[8] The fluidity of literary studies is illustrated by the different terms that are used to define it, here and elsewhere. Literature studies and literary studies are both used in the dissertation, and they should be read as synonyms. The choice of literary studies as the main term used in the title should not be regarded as a statement regarding the purpose of the discipline (e.g. the study of literary texts). Rather it is chosen because it is a commonly used term in the literature on disciplines and research fields (see for example MacDonald 1994; Klein 1996; Whitley 2000).

sionally by employing holders of degrees from other institutions with the same identity." Hence, an important feature of a discipline is that it awards degrees and provides a job market for those having the degree. This is partly true for literary studies, but language and cultural differences limit the integration of literary studies as a discipline in the sense of a common job market. Or rather: no single discipline incorporates literary studies as a whole; it consists of a range of disciplines and research specialties. Among them we find: comparative literature, literature in specific languages such as English, French, German, and Spanish, or literature in specific regions such as Latin America or Scandinavia. Furthermore, studies of 'literature' are conducted in research specializations that are focused on a specific time period: ancient studies, medieval studies, renaissance studies or eighteenth-century studies, to mention a few. Literary studies is also carried out within the context of research areas focusing on a specific topic or perspective such as cultural studies, postcolonial studies, and gender studies.

Here literary studies is understood as a research field that is inhabited by several disciplines that to a great extent share common ground in their practices, concepts, and canonical texts. The joint communication structure of this research field warrants a wide definition when selecting material for analysis. Whitley (2000 p. 7) defines an intellectual field as:

> A broader and more general social unit of knowledge production and co-ordination is the intellectual field. These fields are conceived here as relatively well-bounded and distinct social organizations which control and direct the conduct of research on particular topics in different ways through the ability of their leaders to allocate rewards according to the merits of intellectual contributions.

Although one could question whether literary studies is 'well-bounded,' it can be regarded as a specific field of research. The control of communication (literary journals) and the joint allocation of rewards and resources are the main arguments for this. Thus, although researchers may work in different disciplines, they communicate through joint channels and are judged by the same criteria. Another feature of an intellectual field is that scholars within the same field share research interests, as formulated by Åström (2006, p. 12): "Research fields on the other hand, are basically areas of common research interests." Research fields, or intellectual fields, can be regarded as broader concepts than disciplines, yet they both share a connection to social and organizational structure within academia.

In this thesis literary studies is viewed as an organizational unit, and special focus is placed on the formal communication within this organization. Thus, articles published in literary journals and grant applications submitted to the category of 'literature' are included in this study by dint of their role in the formal communication of this organization. The broad inclusion of sources in the thesis—English language journals, citations to Walter Benja-

min in *WoS*, a Swedish language journal, and grant applications—should not be seen as an attempt to cover the field as a whole; rather this study provides examples that can be used to draw conclusions regarding a larger structure.

2. Scholarly Communication, Research Practices, and Citation Patterns in the Humanities

The purpose of this chapter is to provide an overview of studies on scholarly communication, research practices, and citation patterns in the humanities. Logically special emphasis is given to the application of bibliometric methods on literary studies and closely related fields. The research covered here should be seen as a background to the project as such, while more detailed and focused accounts of previous findings are found in each study. For a summary of bibliometric research conducted on the humanities the reader is referred to the bibliography compiled by Hérubel and Buchanan (1994) as well as Nederhof's (2006) review of bibliometric evaluation of the social sciences and the humanities.

Scholarly communication is a common term for describing the processes in which research is shared and published. Scholars participate in the communication process in different roles, not only as authors or readers. Borgman and Furner (2002) discern four different roles of researchers: (1) as *writers*, (2) as *linkers* (e.g. to cite), (3) as *submitters* (chooser of publication channel), and as (4) as *collaborators*. In addition one could add the role of (5) *gatekeepers* or *reviewers*. These roles and their importance vary across scholarly fields and academic cultures. This chapter follows the outline indicated above, with a special emphasis on the role of 'the linker,' as referencing practices and citation patterns is the main topic of the thesis. The roles covered here are often inseparable, as the reader will soon discover, and the practices connected to one role (e.g. linker or citer) can only be understood in connection with another (e.g. writer).

Research on disciplinary practices, such as writing, searching, and citing, has been a growing theme in LIS (Palmer & Cragin, 2008). Practice is a term used in many contexts, and there is no single practice theory, although some general ideas are associated with the concept. Practices are in the view of many practice theorists: "[…] embodied, materially mediated arrays of human activity centrally organized around shared practical understanding" (Schatzki, 2001, p. 2). Furthermore, the practice approach is associated with specific contexts and the use of skills and activities within these settings. The

definition of 'practice' as a collective action is important for understanding the perspective of practice theory. Barnes (2001, p. 18) propose that practices should be seen as: "[…] socially recognized forms of activity, done on the basis of what members learn from others, and capable of being done well or badly, correctly or incorrectly." Thus, the use, searching, and citing of literature can be seen as practices that are learned within a collective such as a scholarly field.

Searching and Writing

The search for literature in scholarly fields is a common topic in LIS research. One of the first studies focusing on the 'habits' of scholars in the humanities was Stone (1982). Her study covers many of the characteristics that reappear throughout the literature: humanists tend to work alone, search for literature on their own, and use monographs rather than journals. Stone's study emphasizes the central role of the library and the use of browsing for locating relevant materials.

That researchers make little use of online searching is a common finding in studies of scholars in the humanities (Watson-Boone 1994; Bates 1996). Instead chaining—following references in books and articles—and getting recommendations from colleagues were the most common techniques for locating sources. Later findings have also indicated that chaining is the preferred technique among literary scholars, while browsing is popular among historians (Talja & Maula, 2003). However, a move towards using keyword searching was detected in a follow up study, a tendency that might be explained by the influence of the digital environment on the research practices of scholars in the humanities (Vakkari & Talja, 2006).

A literature scholar interviewed by Talja and Maula (2003, p. 680) explains why 'direct searching' is less frequent in his field: "This field is not based on technical searching. It is not the nature of this field that you have to read each source that has been written on your topic." In fact it could even be so that literary scholars have to be selective and thus overlook a majority of topically relevant sources in order to have an efficient information strategy (Talja & Maula, 2003, p. 681). Chu's (1999) study of the work process of literary scholars suggests that researchers rarely use literature searches when formulating new projects. Instead new venues of research originate from former projects or an already established knowledge base. Furthermore, the analysis of sources could rarely be separated from the writing process. Thus, the wide definition of topic as well as the search techniques used demand that scholars in the humanities search for literature themselves, and the searching for sources is an intrinsic part of the research process.

In her study of writing styles in the social sciences and the humanities MacDonald (1994) suggest that writing in literary studies can be character-

ized as epideictic—celebrating the complexity of literature and affirming the shared values of a particular group—rather than epistemic (establishing knowledge claims). She even suggests that writing in these fields has shifted from a focus on the contributions made to the field to the performance of the scholar. Thus, a further emphasis on the rhetoric of the text can be seen as "[…] scholars display prowess, privilege originality, and amplify on paradoxical themes" (MacDonald, 1994, p. 142). Her findings indicate that articles in literary studies are least epistemic and most particularistic among the fields she studied. Scholars in literary studies are less inclined to make generalizable conclusions, and particular arguments made in an article cannot always be evaluated on their own. Rather the reader must evaluate the whole article: "Contributions to interpreting Shakespeare may be more holistic, less able to be broken down into discrete bits of cumulative insight" (MacDonald, 1994, p. 175). Consequently, references are not only used for affirming a specific claim in the text—as is often the case in the rhetoric of scientific articles—but to support and contextualize the article as a whole.

Studies of how academic texts are constructed show that authors from research fields in the humanities are more visible in the text. This is illustrated through the use of hedging and in the amount of self-mentions in the text. In the natural sciences self-mentions are unusual, and a personal stance towards the arguments made is seldom visible. In the humanities, on the other hand, the credibility of the author, as well as explicitly taking a point of view, plays a greater part in "[…] creating a convincing discourse, enabling writers to emphasize their own contribution to the field and to seek agreement for it." (Hyland, 2006, p. 32). Hence, claims are often inseparable from the author that makes them, and they can only be evaluated in the context in which they are made.

In summary, chaining and browsing are important techniques for locating sources in literary studies, although there are indications that this might be changing due to the rapid development of online databases. Nonetheless, full coverage of a specific topic is not always desirable, and the search for sources is an integrated part of the research process. Furthermore, the rhetoric of the academic text in the humanities aims not only at achieving epistemological goals but stylistic (epideictic) purposes as well, and specific claims can only be evaluated in relation to the overall purpose of the text.

Submitting and Publishing

The preferred publication channel differs across disciplines and fields, and the choice of output is dependent on variables such as the material under study, the methods used, and the intended audience. The publication practices of scholars in the humanities can be discussed from an epistemological point of view where the length of output is due to the type of problems that

is addressed in research. Scholars in the humanities accentuate that the monograph allows for the development of complex ideas, as it gives more room for deep analysis and comparisons (Williams et al., 2009).

The monograph serves a key function in many fields in the humanities, and the publication of a monograph is often a prerequisite for tenure (Donoghue, 2008, p. 41-49). Nonetheless articles in journals and books are publication channels often used by researchers in the humanities. Kyvik (2003) did a survey among scholars in Norway and found that articles—in books or in periodicals—are the most common output. Articles or chapters in books are also frequent in the social science and the humanities, and a small increase of international (English) and co-authored publications was detected. However, the level of co-authorship in the humanities is still small, only 14 percent compared to the natural sciences (72 percent) and the social sciences (43 percent).

A recent analysis of publications in the social sciences and humanities in Flanders (Belgium) shows that journal publishing is increasing in the social sciences, but declining in the humanities. A general increase in the production of publications and especially English language publications could also be detected, but no major shift towards publishing in journals could be discerned (Engels, Ossenblock & Spruyt, forthcoming). A similar study of publication output at the University of Helsinki did not indicate a growth in journal article publications; rather the publication of both articles and monographs was decreasing (Puuska, 2010). Articles in books (e.g. anthologies), on the other hand, were increasing, from 56 percent in 1997-1998 to 72 percent in 2007-2008. At the same time researchers and administrators had the perception that journal publications were more frequent than before. Thus, a change in publication practices towards journals was perceived, but it was not confirmed by empirical findings.

Hicks (2004) connects the various outputs of research in the humanities to the concept of a 'new mode of producing knowledge' (mode 2).[9] In this mode, research is transdisciplinary, contextualized, and oriented towards application. Of special interest in the context of new modes of knowledge production is the category of literature that is directed to non-specialists and a general public. The function of non-scholarly publications can be described as follows: "Where national literatures can develop knowledge in the context of application, publishing in non-scholarly journals moves knowledge into application. The literature therefore performs a function similar to patenting for scientist" (Hicks, 2002, p. 489). While patent databases have been used to study the 'application impact' in technology and the natural sciences, the public dissemination of research in the social sciences and the humanities is a phenomenon that has not been measured or quantified to any great extent so far.

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[9] For a longer and critical discussion regarding mode 2 see p. 54-56.

A study that looked at the percentage of publications directed to a general public was Nederhof et al. (1989). They found that the percentage of publications directed to a non-scholarly audience was large in Dutch literary studies (30-43 percent), and a huge majority of publications were written for a national audience (95 percent) and in Dutch. General (comparative) literature, on the other hand, was more internationally oriented, with almost half of the publications directed to an international audience, and here the percentage of publications directed to non-scholarly readers was also lower (10-21%). Thus, the publication patterns in literary studies are dependent on the focus of research, and the degree to which publications are focused on a national and non-scholarly audience differs considerably.

Research in the humanities is directed to three different groups: scholars on the international 'research frontier,' scholars on the national or regional level, and a non-scholarly public (Nederhof, 2006, p. 96). The monograph does reach all three audiences to greater extent than the journal article, and it is especially efficient in targeting non-scholarly readers. English-language journals are foremost used to reach international scholars, while national journals play a role in the dissemination and discussion of research with national or local foci. Thus, publication patterns in the humanities are ascribable to the diverse audience of many research fields, and important contributions can be found in journal articles, book articles as well as in monographs. Publications directed to a popular audience play an important role, and the writing of monographs can be seen as an effort to target both a scholarly and a popular audience.

Linking or Citing

A range of studies have looked at the citation characteristics of research fields in the humanities. The type of sources, the language of sources, and the age of sources in different publications and research fields are often analyzed. A majority of studies use references form English-language journals, but there are also analyses of French, German, and Spanish sources. In general it has been claimed that scholars in the humanities often cite books and older sources. However, there are important differences within the humanities in the citing of sources, and the percentage of references to books varies from 88 percent in religion to only 49 percent in linguistics (Fig. 1).
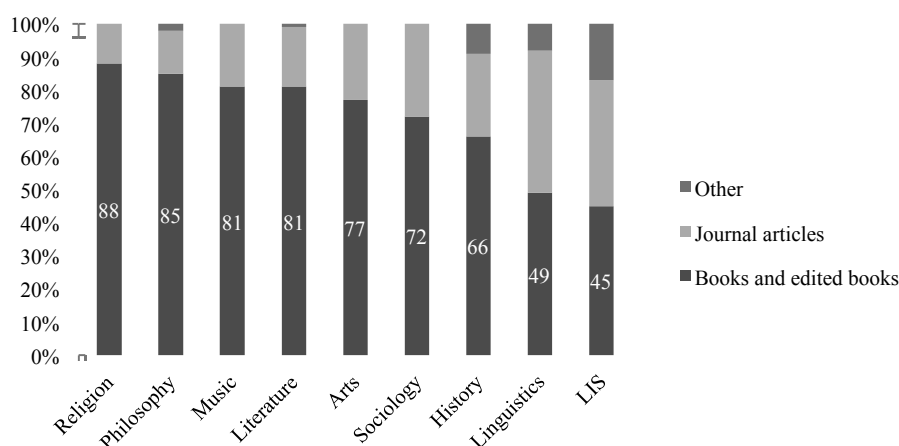
Fig. 1. Percentage of cited books and journal articles in selected fields in the human-
ities and the social sciences (data from 1995 to 2005). [10]

Disciplines like religion, philosophy, and literature can be regarded as book-
based disciplines, while journals play an important role in history and lin-
guistics. As a comparison, two fields in the social sciences—sociology and
LIS—were included, and books play an important role in these fields as
well.[11] A field such as sociology also relies heavily on books, but as always
one must be aware that the choice of material influences the result. An anal-
ysis of qualitative research published in monographs would show high rates
of references to books, while the opposite would be true for quantitative
research published in articles. Hence, in the case of sociology, the high per-
centage of references to books might be partly a result of studying references
in 'outstanding academic books' rather than journal articles (Lindholm-
Romantschuk & Warner, 1996, p. 391).

Differences on the subdisciplinary level also influences how references
are used. A detailed study of a few articles in the subfield of "Renaissance
New Historicism" found that scholars almost solely cited primary materials
and publications from outside their own discipline. The anecdotal style used
by the authors is "[…] not explicitly focused on disciplinary knowledge
making, and more liable to cite primary sources than sources within the dis-

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[10] Data gathered from: religion (Knievel & Kellsey, 2005), philosophy (Cullars, 1998), music
(Knievel & Kellsey, 2005), literature (Thompson, 2002), arts (Knievel & Kellsey, 2005),
history (Lowe, 2003), sociology (Lindholm-Romantschuk & Warner, 1996), LIS (Chung,
1995) and linguistics (Georgas & Cullars, 2005).
[11] The precentage of journal articles varies considerably across specializations in LIS. The
study cited here focused on sources cited in the specialty of classification, and the number of
cited journal articles would be considerably higher in the subfield of bibliometrics, for ex-
ample.

ciplinary community" (MacDonald, 1994, p. 140). Thus, there seems to be little communication—at least in the practice of referencing each other—between researchers in this particular subdiscipline. The interdisciplinary use of sources was also observed by Talja et al. (2007), who found that scholars in the humanities were more prone to use literature outside their own field when compared to scholars in the social sciences and the natural sciences.

The referencing practices of literary scholars are also discussed by Crane (1972) in her study of 'invisible colleges.' She suggests that literary scholars are "[…] not concerned with creating a common body of knowledge of their subject" (Crane, 1972, p. 95). This would explain the reluctance to cite the work of colleagues. Referencing practices are thus a reflection of a field where there is more room for disagreement and were fewer researchers are engaged on each topic. Consequently, the invisible college of likeminded scholars—if existent at all—would be small compared to fields in the natural sciences.

There is no doubt that the most frequently cited sources in literary studies are books in the form of monographs and anthologies. The referencing practices of scholars in literary studies have been studied in a range of articles, but the results are not always comparable due to variations in the definition of books or monographs and differences in the methods used. The rate of citations to books within literary studies varies between 63 and 87 percent, depending on the material used.[12] The results from these studies, covering a period from 1980-2010, give no indication that referencing patterns are changing over time. Books are the most cited publication form, and although the percentage of citations to journals varies considerably between studies no trend towards increased citing of journals can be discerned.

The extent to which fields in the humanities are adopting referencing practices from the natural sciences has been debated. Larivière et al. (2006) did a comparison between the humanities, the social sciences, engineering and the natural science when it comes to journal publication. They found a general increase in citations to journals between the years 1981-2000, and this applied both to the natural sciences and engineering as well as to the social sciences and the humanities. Though, when looking in detail at fields such as history, law and literary studies a decline in citations to journals during the period could be detected.

The Language and Age of Cited Sources

The language of cited sources is rarely an issue in the natural sciences were English is the established language of communication. The situation in the social sciences and especially in the humanities is rather different. Many

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[12] Data from Heinzkill (1980), Stern (1983), Cullars (1985), Budd (1986), Cullars (1988), Cullars (1989), Cullars (1990), Thompson (2002), Knievel & Kellsey (2005), Ardanuy, Urbano & Quintana (2009), Uçak & Al, (2009) and Nolen (2010).

fields in the social sciences and the humanities have a strong regional or national orientation, and this is the case especially in fields such as literary studies, sociology, political science and public administration (Nederhof 2006 citing Luwel et al. 1999). Databases that foremost index English-language sources cannot adequately cover these fields, and this is one of the major issues when using established databases such as *WoS* or *Scopus* to study research fields in the humanities.

Studies of the language of cited sources in German literature and French literature shows that the influence of English-language sources is moderate in these fields. Less than 15 percent of the cited sources in German literature and only 9 percent of the cited sources in French literature are in English (Cullars, 1989). The same pattern was discerned in the field of literary studies in Italian (8 percent) and Spanish (9 percent) (Cullars, 1990). Consequently, studies of these fields would need to incorporate sources in the national language rather than English-language ones, and the same applies to many other countries and research fields.

The citing of recent sources has been seen as an indication of the existence of a 'research front' in a specific field. A measure of the age of sources in a field is the 'Price index' (named after the inventor Derek J. de Solla Price). The Price index, also called 'the immediacy factor,' calculates the percentage of recent sources in a field (Price, 1965). A high Price index—the number of cited sources which are five years or younger—suggest that researchers predominately cite recent literature while the age span of sources is broader in a field with low Price index. An analysis of 154 journals in the humanities, the natural sciences and the social sciences showed considerable differences; in physics and chemistry the percentage of recent sources was 60-70 percent, in the social sciences 40-50 percent, and in the humanities only 10 percent (Price, 1970). Price explains the difference in the 'consumption' of sources as follows: "With a low index one has a humanistic type of metabolism in which the scholar has to digest all that has gone before, let it mature gently in the cellar of wisdom, and then distill forth new words of wisdom about the same sort of questions" (Price, 1970, p. 15). This characterization disregards the diversity of research in the humanities, although the metaphor of digestion is illustrative. Furthermore, Price overlooked that many sources in the humanities are primary sources, which considerably increases the median age of references. However, even after taking this into account, the Price index for literary studies was only 13-21 percent (Cole, 1983). This corresponds well with more recent analyses of the age of sources in literary studies where a Price index between 10-17 percent was found (Budd, 1986; Cullars, 1990; Thompson, 2002; Nolen, 2010). Thus, many fields in the humanities—including literary studies—use sources covering a wide age span. The age of sources used in research is related to the search for sources. The pressure to keep up with current research is less pronounced in fields such as literary studies, and searches here are focused on a specific

project rather than on following the latest developments in the field (Ileperuma, 2002). This limits the possibilities of discerning a research front, and it warrants long time windows when conducting bibliometric analyses.

Contrary to the results recapitulated above, Nederhof and Noyons (1992, p. 254) found that articles in literary studies and linguistics reached their 'citation peak' within three or four years, which is equivalent with results from the natural sciences. However, although the peak of citations seems to occur roughly at same time across research fields, it might be so that the distribution of citations over time looks rather different depending on the discipline and type of publication. Consequently, bibliometric analyses of the humanities must take into account differences between disciplines and fields in the age of sources cited. The importance of tailoring the methods for each field analyzed is emphasized, as major differences exist between such close related fields as linguistics and literary studies.

A phenomenon related to the frequency of citations is self-citation. Snyder and Bonzi (1998) studied the giving of self-citations in six disciplines and found that the practice of self-citation was much more common in natural science fields. The occurrence of self-citations was 15 percent in the natural sciences, 6 percent in the social sciences and 3 percent in the humanities (Snyder & Bonzi, 1998, p. 433). The main explanation for this is, according to Snyder and Bonzi (1998), the 'non-incremental' nature of research in the humanities, but also aspects such as the speed and length of publications as well as the number of collaborators influence the level of self-citation. Furthermore, natural scientists publish more frequent and shorter items than many scholars in the humanities, and therefore there are simply fewer sources for scholars in the humanities to self-cite.

Studies of citation characteristics in the humanities show that the type of publication that is most frequently cited is the monograph, the age span of cited sources is broad, the rate of obsolescence is low, languages other than English play an important role, and self-citations are rare. These are the characteristics that could be agreed upon, but there are still a few issues that have not been resolved. One matter is if the publication and referencing practices of scholars in the humanities are adapting to the practices that prevail in the natural sciences. A few studies (Butler, 2003; Kyvik, 2003) suggest that this might be the case, while others emphasize the constancy of cited and published material (Larvieré et. al, 2006; Puuska, 2010). Furthermore, the organization of research in the humanities differs greatly between countries, and results gained in one context are not always applicable in another (Nederhof, 2006).

Citation Structures

Few attempts have been made to study communication structures in particular disciplines, fields, or specialties in the humanities using bibliometric methods. Citation frequencies or networks have seldom been analyzed, and

visualizations of citation patterns in the humanities are rare. However, a few notable examples of attempts using databases, journals, and topics to study structures of research fields in the humanities are covered below.

A forerunner to the well-established bibliometric method of co-citation analysis was employed to analyze the literary climate of Sweden as early as 1968. The literature sociologist Karl Erik Rosengren listed authors that were mentioned together in literary reviews and used these co-occurrences to create maps of the 'literary field'. These maps, constructed without the aid of computers, are early examples of attempts to visualize knowledge structures in the humanities using informetric methods (fig. 2).
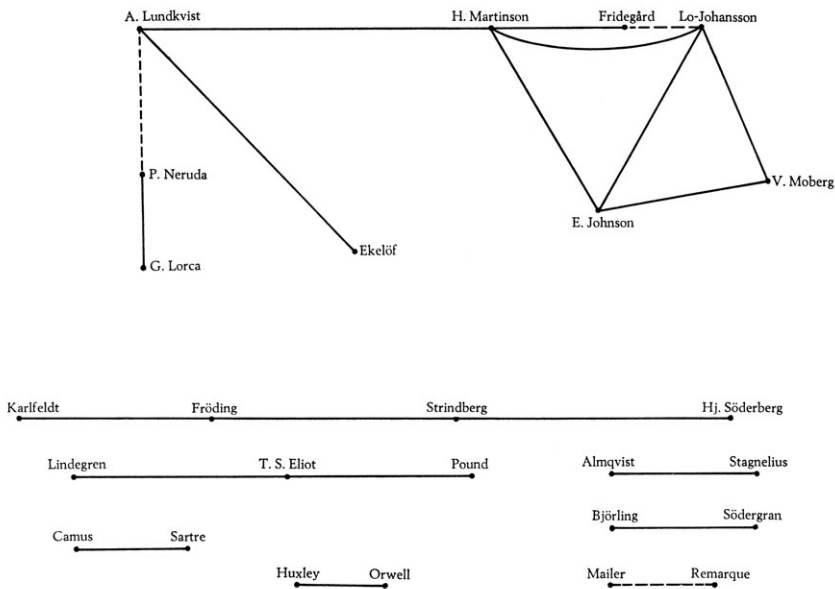
Fig. 7: 16. Structures in the mentions during the period 1954–56.

Fig. 2. An example of Rosengren's co-mention maps. "Structures in the mentions during the period 1954-56" (Rosengren, 1968, p. 135).

These maps build upon the idea that the influence or 'impact' of a writer could be measured by the number of times the writer is mentioned in reviews of other authors. Mentions in this sense are used as references in bibliometric studies: "The particular co-mentions are produced by individual reviewers, but their pattern or structure is social by nature. It is a product of the literary system" (Rosengren, 1968, p. 143). This map—portraying how authors have been co-mentioned in literary reviews in 1954-56—shows, among other things, that Swedish working-class writers such as Ivar-Lo Johansson, Vilhelm Moberg, and Eyvind Johnson often are mentioned in the same reviews.

A few authors—such as the French existentialist writers Albert Camus and Jean-Paul Sartre or Finnish modernist poets—are also grouped together on the basis of co-mentions. Ultimately, several maps of this kind covering different time periods could be used to depict changes in the 'literary climate.'

An approach to combine information retrieval, relevance theory, and bibliometrics was introduced by White (2007). This technique was tested through visualizations of sources related to Moby Dick and August Strindberg (White, 2007; White, 2009). The method uses a seed source—in these cases the classic novel by Herman Melville and the famous Swedish playwright—and visualizes how related sources position themselves in relation to this source. Two axes depict the ease of processing (abstraction level) and the cognitive effects (how closely related the sources are). Ideally these diagrams can be used for distinguishing between sources that serve different purposes. The age of sources also influences their placement on the map as indicated by terms related to Strindberg (Fig. 3).
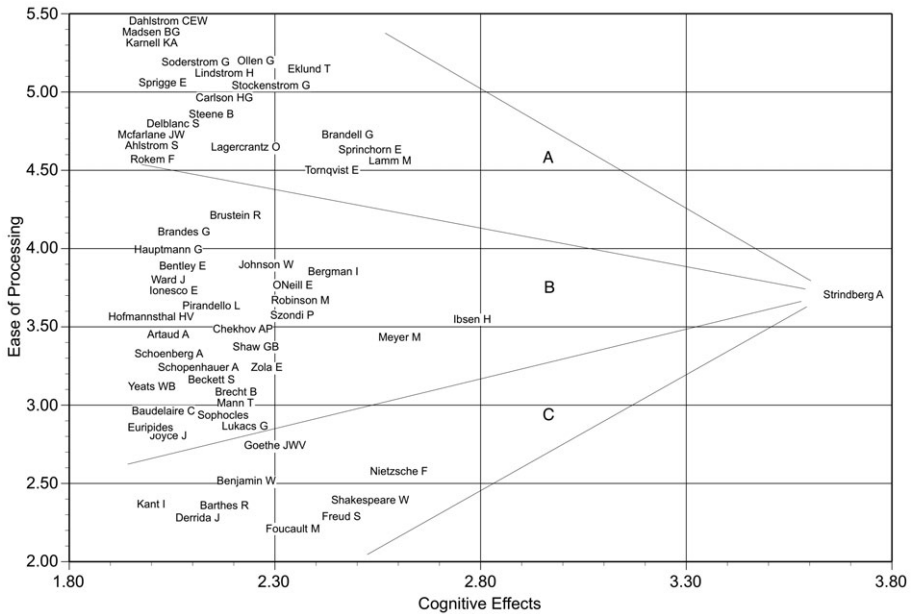
Fig. 3. Pennant diagram of terms related to August Strindberg (White 2009, p. 73).

Background, theoreticians, and older authors are found in the lower part of the map (e.g. Nietzsche, Derrida, and Shakespeare), contemporaries or related authors such as Ibsen in the middle and commentaries (scholars studying Strindberg) in the upper part of the map. The idea is that users interested in a

specific work or author could benefit from maps like these. However, this approach presupposes that the topic/author in question is well covered in citation databases.

Leydesdorff and Salah (2010) employed mapping techniques on *WoS* data to map the art journals: *Leonardo* and *Art Journal* as well as the topic 'digital humanities.' The findings indicate that articles on digital humanities are predominately cited in two different types of journals: journals dealing with computer-aided research in the humanities and library and information science journals. Thus, these mappings can help us to locate journals were a specific topic is discussed, and this could in turn be a tool for researchers in the search for literature. Their conclusion was that topics seem to be a better option than journals for depicting intellectual structure in the humanities. In a follow-up study the journal structure of the A&HCI for the year 2008 was mapped (Leydesdorff, Hammarfelt & Salah, 2011). Twelve subsets of journals were identified, with the largest of these focused on 'literature,' and this corresponds well with data on the number of PhD's in different fields. The analysis shows that journals, on an aggregated level, can be used to discern disciplinary structures in the humanities.[13]

Studies of citation patterns and structures in the humanities are so far limited. The availability of materials and methods for analysis is one reason, and another might be that few scholars in fields such as literary studies or art are interested in bibliometric methods, while many social scientists are familiar with and accustomed to statistical analysis. Thus, few scholars in the humanities have studied their own field using bibliometric methods.[14] However, the availability of data and the development of user-friendly software for doing citation analysis might lead to an increase in bibliometric studies directed towards fields and specialties in the humanities.

Collaboration and the Growth of Knowledge

The practice of writing and disseminating research in the humanities is closely related to the notion of the independent and single author, and co-authorship is rather uncommon. However, the level of collaboration is dependent on both publication channel and the methods used. Larivière, Gingras and Archambault (2006) studied co-authorship in Canadian publications indexed in *WoS*. Papers from the humanities, the social sciences and natural sciences were analyzed, and not surprisingly large differences were detected. A majority of papers in the social sciences are co-authored, and the

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[13] A visualization of citation networks of journals using the data employed in this article can be found on the front page of this thesis.
[14] One of few examples of scholars in the humanities using bibliometric methods to study the intellectual structure of their own discipline is Kreuzman (2001), who mapped the discipline of philosophy using a co-citation of authors.

most 'collaborative' discipline is psychology, with 82 percent of papers written by two authors or more. In the humanities, on the other hand, only 10 percent of the studied publications are co-authored, and literary studies is the discipline with the fewest co-authored publications, only 4 percent. A sharp increase in collaboration in the social sciences was detected in the period 1980-2002, although the same pattern could not be found in the humanities. In conclusion, co-authorship seems to be more common in disciplines where journal articles are the main publication channel and in research fields where quantitative methods are common (Larivière, Gingras & Archambault, 2006, p. 531).

Bibliometric studies often use co-authorship as a measure for quantifying and analyzing collaboration between authors, departments, disciplines, or countries. However, there are other means of expressing collaboration and interaction, and one of these that is common in the social sciences and the humanities is the acknowledgment. Cronin, Shaw and La Barre (2003) explored the use of acknowledgments as a measure of collaboration between scholars. They found a sharp increase in the giving of acknowledgments in the discipline of philosophy, a discipline where 98 percent of the papers are single-authored. However, it is unclear if this can be interpreted as an indication of further collaboration or as a sign that scholars "[…] have become more attuned to the etiquette of acknowledgment, in part, at least, as a result of the growing amount of public debate on subjects such as credit, attribution, and plagiarism in contemporary research and scholarship" (Cronin, Shaw & La Barre, 2003, p. 869). Nevertheless, the fact that co-authorship is uncommon does not suggest that there is no co-operation. In fact there are quite a few collaborative practices in the humanities: "Circulation of drafts, presentation of papers at conferences, and sharing of citations and ideas, however, are collaborative enterprises that give a social and collegial dimension to the solitary activity of writing" (Brockman et al., 2001, p. 11).

Since de Solla Price's (1963) seminal study bibliometric studies have been used as a method for determining the growth of science and research. Usually these studies focus on the natural sciences and the number of journals or articles produced annually. The growth of research in the humanities has not yielded the same amount of interest, and this is not only due to limitations in methods and available materials for analysis. One reason for this is that research in the humanities is often seen as less connected to technological development and economic growth. Another is that the resources invested in the humanities are small compared to the natural sciences, and it has therefore not been seen as important to track its development.

The various publication channels used by scholars in the humanities make it difficult to quantify the growth of research. A possible solution to this problem is to study the number of people active within a specific research field (e.g. the workforce). An option for doing this is to study the growth of PhD's within a discipline. Wood (1988) adopted this approach and looked at

the growth of dissertations in the natural sciences, the social sciences, and the humanities. A rapid increase could be detected in all fields during 1880-1984 with the exception of a decline—often explained by the oil crisis—in the 1970s. A later study using a similar approach looked at the annual production of dissertations in eight fields for the period 1950–2007, and significant differences in the growth profiles were detected (Andersen & Hammarfelt, 2011). The field of literature showed a sharp increase during the 1960s and the early 1970s with a dip during the late seventies and early eighties. Then the growth seems to flatten out during the 1990s and 2000s. Thus, literature does not show the strong growth observed in fields such as biomedicine and engineering, yet it is evident that differences in growth are not simply determined by the field being in the natural sciences or in the humanities (Andersen & Hammarfelt, 2011, p. 381). The dynamics of research in the social sciences and the humanities is a still an underdeveloped research area, and comparisons using other data sources could contribute to a further understanding of the growth and development of research fields in the humanities.

Reviewing and Evaluating

Little is known about how scholars in the humanities evaluate scholarly texts, as much of the research about the review process is directed towards the natural sciences. An exception in this regard is a study by Guetzkow, Lamont and Mallard (2004) on the notion of originality in the humanities and the social sciences. They found that scholars in the humanities value originality in terms of the approach used, as well as in the choice of data source. Researchers in the social sciences, on the other hand, value originality foremost in the use of method. Both social scientists and humanities scholars often make a connection between originality and the moral character of the applicant. Thus, the author of a research proposal judged as original is characterized as 'brave' and 'authentic,' while those lacking this quality were seen as 'lazy' or 'trendy' (Guetzkow, Lamont & Mallard, 2004, p. 203-204). The overarching conclusion of the study is that the view of originality—which strongly influences the view of quality—differs considerably between disciplines.

An in-depth study of the process of judging research proposals was conducted by Lamont (2010). She found that literary scholars have a problem in claiming their territory when competing with other fields (such as history), and this problem is related to the heterogeneous nature of the field: "The disciplinary broadening and diversification of criteria of evaluation may have led to a deprofessionalization that puts literary scholars in a vulnerable position when competing on theoretical or historical grounds with scholars whose disciplines 'own' such terrains" (Lamont, 2010, p. 73). Thus, the

broadening of literary studies in terms of subjects and theories might be a disadvantage when competing for grants and resources with more homogeneous fields.

Besides peer-review procedures for journal articles and monographs, a common form of pre-publication reviewing in fields such as literary studies is the selection of chapters in edited monographs, where often a distinguished scholar selects chapters for inclusion. However, also post-publication reviewing is an important method for gatekeeping in the humanities that is commonly expressed through review articles in journals. Book reviewing can also be judged as a merit for the scholar writing the review, and it has been proposed as a measure of scholarly influence (Zuccala & Van Leeuwen, 2011). Furthermore, book reviews in journals have been studied to depict the flow of communication between research fields in the social sciences and the humanities (Lindholm-Romantschuk, 1998). The results showed that there was quite a lot of interaction between disciplines, and the 'flow' of knowledge was primarily directed from the social sciences towards the humanities.

The studies recapitulated above discuss the most common type of approach used for evaluating scholarship: peer review. However, the growth of scholarship, questions regarding the 'objectiveness' and fairness of peer review (Wennerås & Wold, 1997), and the time consuming nature of peer-review processes have resulted in attempts at finding more effective methods for evaluating research. In this effort bibliometrics has emerged as a promising alternative (Gläser & Laudel, 2007). Bibliometric evaluation is still more commonly used on the natural sciences, but bibliometric frameworks for evaluating the humanities have been implemented. The skepticism towards these measures—as articulated by deans and researchers in Swedish academia (Geschwind, 2010)—seems justified, as several and significant limitations remain.

The insufficient coverage of publications in languages other than English is often seen as one of the major obstacles for evaluating the humanities using bibliometric methods. Archambault et al (2006) investigated the coverage of journals in *Thomson Reuters WoS* depending on the country of origin (country of the editor), and a 20–25 percent bias towards journals in English-speaking countries was found. Subsequently, journals in languages like French, Spanish, and German are less likely to be included in the database with the consequence that research in English is overvalued while the 'impact' of other languages and countries is underestimated. The use of *WoS* is particularly worrisome in the case of major European languages such as Spanish, French, or German as these are predominately focusing on a national audience. An illustrative example is that German research in the social sciences is ranked last out of seventeen countries when measuring impact using the *SSCI* (Ingwersen, 2000). Similar results were gained by Godin who found that Canada and Australia produced more papers than Germany in the

social sciences and humanities (Godin 2002: cited by Archambault et al. 2005). These findings can be explained by the *WoS* bias towards English-language sources, or as Archambault et al. 2005 (p. 154) state: "Intuitively, it seems very improbable that Canada and Australia would produce more papers in SSH (Social Science and Humanities) than a country like Germany with its much larger population and its long traditions of prolific authors such as Kant, Weber, Habermas and so forth."

The coverage of the *WoS* for publications in many fields in the humanities is indeed very low. Sivertsen (2009) compared registered publications in Norwegian higher education and matched these with the *WoS* database. Of all publications in the humanities 9 percent were indexed in *WoS* (10 percent for literary studies) while 97 percent of all publications in biomedicine could be retrieved. Similar indications of the poor coverage of the humanities were given in a recent evaluation of research at Uppsala University. Here, only 6 percent of the publications within the 'Arts' and 1 percent of publications registered by the department of literature were indexed in *WoS* (*Quality and Renewal* 2007, p. 485).

An alternative to citation databases, which has limited coverage of the humanities, is search engines such a *Google Book Search*. This approach was explored by Kousha and Thelwall (2009), who found that book citations could be an appropriate source for research evaluation in fields where *Thomson Reuters WoS* or *Elsevier Scopus* data is less applicable. A subsequent study compared citation scores from *Google Books*, *Google Scholar*, and *Scopus* with peer evaluations from the British Research Evaluation Exercise (RAE) and a weak but significant relationship between the RAE ranking and citations from *Google Books* was found (Koshua, Thelwall and Rezaie, 2011). Hence, book citations could be a useful indicator for supporting the peer-review process in book-based disciplines. Yet, retaining citations to books on a larger scale remains a problem—only citation data for individual books or list of books can be gained, and manual checking is needed—that has to be solved before the method can be used on a larger scale. The coverage of books in languages other than English is also an issue of concern.

Linmans (2010) suggests a three-level approach using citation data, library holdings, and productivity for overcoming the problems of insufficient coverage. Using these three methods on a sample of 292 researchers he could show that evaluation of the humanities using bibliometric methods is feasible. Especially interesting is the strong correlation between book publishing (in English) and citation rates for articles, which suggests that authors that publish extensively in international monographs also tend to be cited often (Linmans, 2010, p. 351).

The use of library catalogues for the evaluation of research in the humanities and the social sciences has also been proposed by Torras-Salinas and Moed (2009) as well as by White et al. (2009). They suggest that library catalogues could be used in a similar way as citation indexes are used today,

where books equal papers and inclusion in a library catalogue equals a citation. Thus, the book that is indexed in most libraries is considered the most influential. However, they also discern several shortcomings as: national biases, problems with field delimitation, the variety of libraries and how to account for different types of books (Torras-Salinas & Moed, 2009, p. 24-25). Furthermore, one could reflect over the consequences that a wide adoption of 'library catalogue analysis' would have for decisions about acquisitions at libraries, and how it would affect the role of the librarian making these decisions.

Finkenstaedt (1990) made a survey of how literature scholars rate different publication forms in terms of reputation and impact. Not surprisingly the scholarly monograph was singled out as the most important publication channel with over 90 percent of the respondents rating it as 'very important.' Therefore a weighted system of evaluation—where monographs counts as 50 and an article as 10—was suggested. This proposal has a few similarities with the approach that is used in the Norwegian system for research evaluation. This alternative system for evaluating the humanities uses 'soft metrics' that count publications rather than citations of publications in major citation databases as *Scopus* and *WoS*. A system of this kind has been used since 2006 for the allocation of research funds in Norway. It has also been adopted locally at universities in Sweden and has been proposed for use in Flanders (Sivertsen, 2010). 'The Norwegian system' makes a qualitative difference between publication outlets in order to measure performance, not only production. The importance of having a quality component in the system is illustrated by the implementation of a research evaluation system (RES) in Australia. Here, the consequence of allocating founds on the basis of publication counts was higher productivity but the increased quantity was not accompanied by an increase in quality; rather, a decrease in quality could be detected (Butler, 2004). The Norwegian system tries to avoid this by using a differentiated scale for the allocation of points in the system. The model for allocating points incorporates both monographs and articles (Table 1).

Table 1. Allocation of points in the Norwegian model for research evaluation

	Level 1	Level 2
Scholarly articles in journals	1	3
Scholarly articles in anthologies	0.7	1
Monographs	5	8

The model is based on a division between level one and level two (the most selective and prestigious channels), and at any given time only 20 percent of the world's gathered publications can be ranked as level two. This is to make

the division dynamic and responsive to changes in publication practices among scholars. The Norwegian model has an advantage in that it includes different type of publications in the evaluation, and it seems that the unintended effects of the Australian system have been avoided (Schneider, 2009). Another advantage is that the trust in the system by scholars themselves is enhanced by their inclusion in the process of selecting high quality publishers, and a recent study suggest that the transparency, coverage, and legitimacy of the Norwegian system makes it preferable to evaluation systems that use *WoS* data (Ahlgren, Colliander & Persson, forthcoming). The major drawback is that publication counts are a crude measure of quality as they measure output rather than impact. Furthermore, it could be questioned if a book article in an anthology from an esteemed publisher is only worth one third of a journal article. Little motivation for submitting book articles to prestigious publishers is given in this system, although the overarching goal is to promote publication in high-quality channels. The definition of scholarly publications might be another matter of discussion in some humanities fields. As an example, only 372 publications in the field of literature were indexed in the Norwegian database between 2005–2009, and only four percent of these were books. As a comparison, 526 publications were indexed in the category of linguistics, out of which three percent were books (Sivertsen & Larsen, 2011). The low number of publications for such a large field as literary studies as well as the remarkably low percentage of books suggests that many publications in the field of literature are judged as non-scholarly in this system. In summary, the Norwegian model must be regarded as much more promising and transparent than the approach that was employed in Sweden using 'normalized' citation data from *WoS* (Sandström & Sandström, 2008), although serious questions and challenges remain.[15]

An attempt to establish a ranking list of humanities journals on the European level, similar to the one used in Norway, was initiated by the *European Science Foundation*. The initial purpose of this list was to provide an additional tool for research evaluation in fields where established bibliometric methods were less applicable. Thus, the *European Reference Index for the Humanities* (i.e. the *ERIH* list) was complied with the help of national panels and scientific committees. These lists, which were published in 2007 and 2008, ranked journals in *A*- A-*, *B-* and *C-*journals. These categories described the 'quality' of the journals: *A** (one of the best in the field), *A* (high ranking with very strong reputation), *B* (standard international journals) and *C* (important local journals). Scholars and publishers criticized the list heavily, as it failed to acknowledge the political and cognitive nature of all rankings and categorizations (Pontille & Torny, 2010). The critique directed at the project did eventually result in a new ranking of journals, and concepts

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[15] The current evaluation system used in Swedish higher education is now being revised, and a new model, partly inspired by the Norweigan system, is proposed (Flodström, 2011).

such as 'ranking' and 'impact' were replaced by 'visibility' and 'recognition.' In the new ranking a distinction is initially made between national journals and international journals, followed by a further division between international journals with high visibility and international journals with significant visibility.[16] However, substantial criticism against the project persists.

In summary all models for the evaluation of research fields in the humanities, with few exceptions, points to the importance of incorporating sources that are not indexed in the major citation databases. The coverage of these databases is basically too low to provide accurate and reliable data. The establishment of broader more inclusive databases—*Thomson Reuter Book Citation Index* is one example, and *Google Scholar* might be another—could change this but currently the possibilities of using citation data for evaluation are limited. More promising is the method of using weighted publication output, but the categorization of publication channels is a delicate matter, and the definition of 'scholarly' might disadvantage the traditional publication practices of scholarship in the humanities.

Scholarship in Literary Studies: Research Practices in Transition?

The findings above show that scholarly practices in fields such as literary studies remain stable. Literary scholars usually *write* and search for sources alone, they *submit* their research for publication in many different types of channels (journal, anthologies and monographs), and their *collaborations* are usually not manifested through co-authorship. Furthermore, literary scholars act as *gatekeepers* and reviewers but the quality criteria used differs from the social sciences and the natural sciences. Finally, literary scholars foremost *link* to (cite) monographs, the time span of sources cited is broad, and non-English publications play an important role in the field. The question, however, is if these characteristics of scholarship in literary studies will persist when a majority of research is communicated in digital form, and in a time when open access publishing is encouraged.

The emergence of the web as the major tool for searching for information seems already to have changed the practice of searching, and the possibilities of publishing in the digital domain are now, slowly, being explored by scholars in the humanities (Borgman, 2009). The advantages that digital dissemination provides—faster publication, linking to primary materials or data (e.g. enhanced publications) and possibly a larger audience—are in-

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[16] Journal lists and descriptions of categories are available at: http://www.esf.org/research-areas/humanities/erih-european-reference-index-for-the-humanities.html [accessed: 2011-10-17]

creasingly relevant in a time when the dependence on monograph publishing in disciplines such as literary studies appears to be problematic (Donoghue, 2008, p. 48-49).

The call for open access is another factor that is bound to influence the publication practices of scholars in the humanities. Open access publishing is not yet as common in the humanities as in the life sciences, where large granting bodies (such as the *National Institute of Health*) demand open dissemination of results. However, the access to research is still a major issue—not the least due to the decrease in monograph purchases by academic libraries (Ferwerda, 2010). Thus, although the importance of books in literary studies and other similar fields in the humanities seems to prevail, there are several challenges that have to be addressed if this is to be true in the future. The crisis in academic publishing, the open access movement, and the acquisition policies of academic libraries are all developments that question the status of the monograph.

The wide application of research evaluation systems (RES) that count publications or citations to publications is another factor that influences how research is conducted and published. The effect of such a system is dependent on its design, and the degree to which it redistributes resources between research fields. Research evaluation systems usually provide incentives for publishing in international journals, and journals indexed in commercial citation databases such as *WoS* and *Scopus* are often those that give the highest rewards. The implementation of research evaluation systems is bound to have diverse results depending on the organization of the research field. It has been suggested that the degree of coordination will increase in research fields such as literary studies if a strong RES is employed, and it might also result in changes in the publication and referencing practices of scholars (Whitley, 2007).

These challenges against the traditional model of scholarship in the humanities are bound to influence the practices of researchers. However, previous research suggests that 'older' research fields are less prone to adapt new techniques (Sukovic, 2009), and new digital practices are shaped by the disciplinary culture of the field. A telling example from the study by Collins, Bulger and Meyer (2012, p. 81-82) is that of scholars in the humanities who find a quote using an easily searchable digital edition, but they cite the printed version. Researchers appreciate the availability and the searchability of the digital edition, but the higher status of the printed version is evident when a formal reference is given. Hence, a fast transformation of the research practices in fields such as literary studies is not to be expected. Rather a gradual development driven by the interaction between techniques and disciplinary culture can be anticipated.

This chapter has canvased the practices of scholars in literary studies and related fields, but a theoretical framework is needed in order to understand how these practices are formed and transformed. The next chapter introduces

theories on how research fields are organized, and it establishes a conceptual framework that can be used to explain publication patterns, referencing practices, and the distribution of citations in research fields.

3. Theoretical Framework

The theoretical framework of this thesis is based on the assumptions that science and research can be studied like any other human activity, and that both qualitative and quantitative methods can be used in this effort. The study could therefore be incorporated in the broad and interdisciplinary field of science studies. However, the aim is not to study researchers, institutions, 'the construction of facts' or knowledge claims, but rather to study the communication between researchers. This dissertation focuses on how research is communicated, and in doing so it views research mainly as a shared practice, although a practice that is shaped by epistemological beliefs and arguments. It assumes that disciplines, fields, and institutions are socially constructed entities or, as elaborated by Leydesdorff (2001, p. 339): "Indeed, the sciences have been socially constructed. But this is a meta-theoretical insight: it is true by definition." Thus, this dissertation views research fields as entities that are defined by institutional, organizational, financial, and epistemological characteristics. Therefore it employs theories that highlight differences between scientific fields as well as more general developments in contemporary knowledge production.

The following chapter aims to discuss the theoretical underpinnings of the dissertation in a way not possible in the individual articles. The chapter introduces two frameworks—Whitley (2000) [1984] and Becher and Trowler (2001)—that can be used to compare, describe, and explain disciplinary differences. This is followed by a definition and discussion of two interrelated concepts: 'mode 2' knowledge production and interdisciplinarity. Then, an effort is made to integrate the different theoretical concepts and theories into a joint framework, or in other words to combine them in a theoretical toolbox designed for the analysis of referencing practices and citation patterns. The metaphor of a 'toolbox' illustrates that different theories and concepts have been emphasized in each study. The choice of using several concepts and theories is motivated by an effort to provide a multilayered view on citation patterns in literary studies. Finally, the role of visualizations and maps is highlighted, methods for creating co-citation maps are explained, and the use of topographical metaphors is discussed.

The Social and Intellectual Organization of Research Fields

A theoretical framework is needed in order to put the results from bibliometric studies of publications in relation to the research practices of specific scholarly fields. Such a framework is introduced by Richard Whitley, formerly in the field of organizational management, in *The intellectual and social organization of the sciences* (2000[1984]). The aim of the book is to contribute to an understanding of research fields "[…] as particular kinds of work organizations which construct knowledges in different ways in different contexts" (Whitley, 2000, p. 6). A key feature of these work organizations is the focus on producing novelty and innovations, a feature that separates them from other organizations. Scientific fields—Whitley uses a continental definition of 'science' and incorporates the social sciences and the humanities in the concept of 'science'—are the context in which researchers develop specific competencies and skills. Thus, intellectual fields are seen as organizations rather than as epistemological entities:

> Intellectual fields are here seen as the major form of intellectual organizations which structure the framework in which day-to-day decisions, actions, and interpretations are carried out by groups of scientists primarily oriented to public intellectual goals. (Whitley, 2000, p. 8-9).

Whitley's theory is based on two main axes that can be used to describe intellectual fields. These are *mutual dependency* and *task uncertainty*. Mutual dependency is a measure of how much the individual researcher is dependent on colleagues in his research. Whitley identifies two types of dependency: *functional dependency* and *strategic dependency*. Functional dependency measures the degree to which researchers rely on the results and methods of other researchers in order to make valid knowledge claims. Strategic dependency, on the other hand, reflects how important it is for researchers to persuade their colleagues that their research is important for the field (Whitley, 2000, p. 88). Whitley illustrates with historical and contemporary examples how these axes can be combined to characterize research fields. The description of fields that are low on both functional and strategic dependency fits well with the humanities in general. He describes these 'low-low' fields as weakly bound with great variation of goals and procedures and with a low degree of division of labor between researchers.

As contextual factors that influence the degree of mutual dependency Whitley points to the plurality and diversity of audiences. He suggests that where the audience is limited and specialized, mutual dependency will be high, whereas when audiences are diverse and where different, equally important target groups exist it will be low. In accordance with the humanities as a field with a diverse audience Whitley (2000, p. 111) comes to the con-

clusion that "[…] the existence of the educated lay public as a legitimate audience in many of the human sciences has restricted their development of separate languages and standardized research procedures." Terms and concepts used in many research fields in the humanities are close to everyday language, and competing groups hinder the development of standardized usage of concepts.

Research differs from other work activities in that the outcomes are uncertain. The second axis in Whitley's theory is therefore *the degree of task uncertainty*. The degree of task uncertainty depends on the intellectual organization of a research field. The 'Kuhnian view' would be that "[…] the more paradigm bound a field is, the more predictable, visible, and replicable are research results and the more limited is permissible novelty" (Whitley, 2000, p. 119). This implies that researchers in the humanities have greater freedom in choosing research topics and methods, but, on the other hand, they risk being ignored because their results are not accessible and replicable for other researchers. This is true even though originality can increase the visibility of research, as 'new approaches' are a highly valued form of originality in the social sciences and the humanities (Guetzkow, Lamont & Mallard, 2004, p. 206).

Whitley introduces two kinds of uncertainty: technical and strategic. A high *technical task uncertainty* suggests that conflicts concerning the interpretation of results are common, and that the choice of method and the success of methods are debated. The degree of *strategic task uncertainty* depicts the level of consensus on intellectual priorities and the goals of research. It concerns the choice of problem and research topic. The variability of research problems and topics is high in a field with high strategic task uncertainty, and also the 'value' of these research topics in the view of the audience is shifting, while the hierarchy of problems and goals of research is clear in a field with low strategic task uncertainty, which in turn leads to stability and uniformity.

As with mutual dependency, these two aspects can be combined. An example of a field that has both high strategic and technical task uncertainty is modern sociology, and the same applies to many fields in the humanities. Economics has high technical task uncertainty but low strategic task uncertainty; the goals of research are clear but not the methods. Modern biology is, on the contrary, characterized by high strategic task uncertainty and low technical task uncertainty, while modern physics has low strategic as well as low technical task uncertainty.

A consequence of high technical task uncertainty is the difficulty of evaluating the performance of the field. This is especially relevant for the humanities as "[r]eputations for particular accomplishments vary across employers and national boundaries as the precise nature of results and their implications are difficult to establish and communicate formally" (Whitley 2000, p. 131–132). Being aware of the particular context where the research

has been conducted thus becomes vital for evaluating the results. International co-ordination, control of results, and reputations are therefore limited in fields with high technical task uncertainty such as philosophy or literary studies. Instead, the control over and co-ordination of research is achieved through personal contacts and knowledge. The ambiguity of results and their value does in turn influence how research is communicated. This is the case because the presentation of findings has to be more elaborate in order to justify a specific interpretation. Hence, articles in fields with high technical task uncertainty are long and books are a common method for communicating research, while a low technical uncertainty "[…] enables research to be effectively communicated in a short space through esoteric and standardized symbol systems." (Whitley, 2000, p. 134).

A majority of disciplines within the humanities are in Whitley's characterization defined as *fragmented adhocracies*. These fields are intellectual varied and heterogenic. Literary studies is an example of a field where research is personal, weakly coordinated, and the degree of specialization is limited. The characterization of fields that have a low degree of functional dependence shows how the different axes can be combined (Table 2).

Table 2. Characterization of scientific fields with low functional dependence (Whitley, p. 158)

	Degree of strategic dependence: low	*Degree of strategic dependence: high*
High technical and high strategic task uncertainty	Fragmented adhocracy; diffuse results, discursive knowledge of commonsense objects. e.g. British sociology, political studies and literary studies.	Polycentric oligarchy; diffuse results and locally co-ordinated knowledge e.g. German philosophy and British social anthropology.
High technical and low strategic task uncertainty	Unstable	Partitioned bureaucracy; analytical specific knowledge and ambiguous empirical knowledge e.g. Anglo-Saxan economics.

Literary studies fits in the category of fragmented adhocracies. The dominant attribute of these fields is that they are intellectually varied and fluid; they lack a stable configuration; tasks are not specialized; co-ordination is weak, and when it occurs it is highly personal. Subgroups form around objects of study and distinct methodological approaches. Audiences are varied and so are the research strategies. Individuals and groups disagree on the topics that should be studied as well as on the methods used, and the lack of standards makes it difficult to reach a resolution of disputes. The intensity of conflicts is low and originality is an important variable in judging the quality of research in these fields: "Rather than co-coordinating their research with one

another, or combating the ideas and results of opponents, practitioners in these fields develop highly individual research strategies around distinct topics and problems often with idiosyncratic methods—or at least highly tacit and non-comparable ones—in order to obtain high reputations for originality" (Whitley, 2000, p. 174). Attempts to create a coherent theoretical structure in these fields are often dismissed as attempts for a 'grand theory.'

The collective reputational control over individuals is low in fragmented adhocracies, which suggests that the condition of employment is more important here than in other fields. The variety of goals of research is high because the individual is not dependent on one particular group of colleagues for rewards. The result is a high degree of intellectual freedom for the individual researcher but, on the other hand, intellectual fragmentation within the field as a whole. Thus, as little consensus exists on the goals of research the terms of employment are instrumental for defining literary studies as a research field.

The strong focus on the organization of work and the practices of researchers is one of the advantages with Whitley's framework. The significance given to these aspects partly explains its common use in studies of differences in scholarly communication between fields (Talja et al., 2007) as well as of the development and institutionalization of research fields (Åström, 2004). However, it could be argued that disciplines and research fields are more than work organizations, and that Whitley's theory focuses too strongly on organizational aspects. Thus, Leydesdorff (2001, p. 26) argues that: "Whitley (1984) has mistakenly drawn the methodological conclusion that the intellectual organization of the sciences can be analyzed sufficiently in terms of the fine-structure of their social and historical organization." The main problem is then the conclusion that 'the social organization' and 'the intellectual organization' (or cognitive organization) of research fields are dependent upon each other. Consequently, Whitley's theory can be regarded as a theory of social organization, but the question remains if it can explain 'intellectual organization.' However, the social and the intellectual cannot easily be separated; the choice of problem, the way in which knowledge claims are made in the text, and the evaluation of research are practices governed both by epistemological and intellectual considerations as well as social ones. Thus, the view of science as a type of 'work organization' might not be sufficient for explaining the distinctiveness of scientific reasoning across disciplines, but it provides an analytical position from which differences in communication structures between research fields can be studied. Nonetheless, research fields can also be described using an anthropological and sociological perspective, as the framework developed by Becher and Trowler (2001) exemplifies. This framework provides an alternative perspective on how research fields can be described, but, as is shown below, it has also much in common with the theory provided by Whitley.

Academic Tribes

An effort to take a broad look at research and higher education is made by Tony Becher and Martin Trowler in *Academic tribes and territories: Intellectual enquiry and the culture of disciplines* (2001). Their analysis includes twelve different disciplines (tribes) that have been explored through interviews with researchers. These interviews are structured using a conceptual framework outlined in Becher (1989). Disciplinary borders, community life, scholarly communication, and academic careers are among the topics covered, and their analysis focus on an epistemological and cognitive level as well as a social and organizational one.

Becher and Trowler build upon differences between research fields that can partly be explained by categorizations such as *soft/hard* and *pure/applied* research. These characteristics were identified in a questionnaire study of 36 research fields conducted by Biglan (1973), who in turn partly based his categorization on the concept of 'a paradigm' (Kuhn 1970[1962]).[17] The second categorization concerns the use of results: are the findings used by other sciences (pure) or in a context outside the academy (applied). Pure science is in general self-regulating, whereas applied science is open for influence from other fields. In this categorization natural sciences as physics and mathematics are regarded as hard-pure, engineering is hard-applied, social professions (teaching, social work, and law) are soft-applied, and the humanities and the social sciences are soft-pure (Table 3).

Table 3. The dichotomies of research fields (Becher & Trowler 2001, p. 35–39).

	Pure	*Applied*
Hard	Physics	Computer science
Soft	Literary studies	Library and information science

Becher and Trowler also found differences between *urban* and *rural* sciences and between sciences that are *convergent* as opposed to *divergent*. The distinction between rural and urban reflects how densely inhibited a discipline or a research area is; if many researchers are focused on the same problem, then the research area can be categorized as urban, while the opposite is true for a rural one. A (ongoing) 'fight' can be observed between highly competitive researchers about positions and resources in an urban research area (for example biomedicine), whereas there is less competition in rural fields such as literary studies. However, the variations within disciplines can

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[17] By paradigms Kuhn means that "[…] some accepted examples of actual scientific practice—examples which include law, theory, application, and instrumentation together—provide models from which spring particular coherent traditions of scientific research." (Kuhn, 1970, p. 10).

be as large as differences between them, and it can also be so that certain specialties within a discipline are urban and applied while others are pure and rural. These variables must also be seen on a scale from more applied to less applied or from more urban to less urban and so forth. Convergence indicates the degree to which standards and procedures are agreed upon. A convergent discipline is guided by a controlling élite of researchers. Becher and Towler describe fields lacking a controlling élite as divergent and state that the individual author in these fields has a greater freedom in choosing problems and methods (Becher & Trowler, 2001, p. 184-185).

The style and language differs between disciplines and research areas. One important variable is to what degree a controlled and specific language is used. Generally the hard (natural) sciences develop a more specialized language where terms are fixed to one meaning, whereas softer areas to a larger extent use everyday language. Becher and Trowler (2001, p. 117) suggest that disciplines where amateurs have been active and important—such as astronomy, history, and biology—have a more public and accessible style.

The communication practice within different research fields is governed by the overall organization of the field. One explanation for the use of articles in the natural sciences is the need for fast publication of important findings. In the humanities, on the other hand, the effort is rather to be thorough, and style is important and highly valued. Generally, books are a common publication form in fields that are rural and soft, while articles in journals are typical for fields that are urban and hard.

Becher and Trowler (2001) propose an accessible theory in which commonly used metaphors describe the characteristics of research fields. Literary studies is described as soft, pure, rural, and divergent, while a discipline such as physics can be characterized as hard, pure, urban, and convergent. These dichotomies describe differences between sciences fairly well, and many concepts resemble those used by Whitley. However, the concepts used by Becher and Trowler are fetched from different theories and are therefore not part of a unified system, unlike Whitley's framework. The concepts are independent of each other and thus less usable as a theoretical foundation. The terms used to describe the different categorizations hard/soft, pure/applied and urban/rural are first of all not specialized, and secondly they are value laden. Usually something 'pure' is regarded as better than the 'applied' and 'urban' is connected to the modern while 'rural' could be associated with the past. It may be that these concepts convey how we usually perceive differences between research fields and research specialties, but the use of these metaphors may be deceiving and normative rather than enlightening. Thus, the categorization used by Becher and Trowler does not lend itself to building a coherent theoretical framework. Still, some of their concepts—especially the difference between urban and rural fields—provide a

graspable and important characterization that is helpful in analyzing citation patterns and communication structures.

The theories described above form a framework for understanding how research fields are organized, but recent transformations in how academic research is produced could question these categorizations. In the next section some of these proposed changes will be discussed and scrutinized.

New Modes of Knowledge Production

It has been claimed that contemporary research differs to a large degree from previous forms of knowledge production. The changes include a further contextualization of research, an emphasis on application, and a commercialization of outcomes. These are developments most visible and discussed in relation to the natural sciences—especially the life sciences—and several concepts such as, 'academic capitalism' (Slaughter & Leslie, 1997), 'triple helix' (Etzkowitz & Leydesdorff, 1998) and 'post-academic science' (Ziman 2000) have been used to describe this phenomenon. Most influential as well as most debated, however, is the concept of *mode 2 knowledge production*. This concept was introduced by Gibbons and colleagues (1994) and later extended and elaborated upon by Nowotny, Scott and Gibbons (2001).

In *The new production of knowledge: The dynamics of science and research in contemporary societies* (1994) Gibbons and colleagues make a distinction between older forms of knowledge creation, *mode 1*, and the contemporary production of knowledge, *mode 2*. Typical for mode 2 is that knowledge is produced in the *context of application*, it is *transdisciplinary* and *heterogenic*. Furthermore, contemporary science is described as *reflexive*, *socially accountable*, and *commercialized*. The differences between 'mode 1' and 'mode 2' are outlined below (Table 4).

Table 4. Characteristics of Mode 1 and Mode 2

	Mode 1	Mode 2
Organization	Disciplinary and hierarchical	Transdisciplinary and heterarchial
Context	Academic; specific community	Public; application based
Quality control	Academic	Social accountability; reflexive
Setting	The university	The university and non-university institutions

Mode 2 is usually referred to when describing changes in the natural sciences, but the new production of knowledge is also visible in the humanities.

Some of the features of mode 2 are and have always been a part of human-istic research: *heterogeneity*, *reflexivity*, and *transdisciplinarity*, while others—such as *instrumentation* and *rising costs*—are less prevalent in these fields (Gibbons et al., 1994, p. 90-110).

The notion of a new mode 2 of science is as influential as it is criticized, and the perceived change has been questioned on several grounds. First of all the very assumption that earlier mode 1 science was disconnected from society can be challenged. It may be true that contemporary science is an integrated part of society—and it could be that this integration is more apparent today than before—but has not science always been an integrated part of society? Historical studies of science—like Fleck (1979/1935) or Shapin (2008) to mention but a few—often show how science is intrinsically bound up in its historical context. Hence, one could ask if there has ever been a mode 1, a de-contextualized science. Another important critique is that mode 2 concerns phenomena on the surface and does not depict the 'inner workings of science' (Weingart, 1997). Moreover, several claims—like the change of quality criteria—are not confirmed by empirical findings (Hessels & van Lente, 2008). Furthermore, it can be argued that mode 2 describes phenomenona that are representative for few research fields (such as biomedicine) and applies them to fields and contexts where changes in the production of knowledge are less apparent.

Commercialization and commodification are seen as parts of the transfer to mode 2, but these concepts can at the same time be said to legitimize the developments they aim to describe (Radder, 2010, p. 11). Claiming that research is becoming more commercial becomes a self-fulfilling prophecy rather than a tool for analysis and informed action. Hence, mode 2 is a debated concept not least because of its 'normative' and legitimizing effects.

Research fields in the humanities share some of the features—transdiciplinarity, heterogeneity, and social accountability—associated with mode 2 knowledge production. At the same time many fields in the humanities are less influenced by other features of mode 2, such as instrumentation and rising costs. Furthermore, it has been suggested that phenomenona connected to mode 2 are better studied separately rather as an aggregate of attributes (Hessels & Van Lente, 2008, p. 758). Consequently, two features of the mode 2 framework are focused upon in this study: increased social accountability/reflexivity and increased transdisciplinarity.

The contextualization of knowledge is equally if not more persistent in the humanities. A good example is the debate about the literary canon and the feminist protest against the 'dead, white, male' dominance in literary studies (Robinson, 1983). In this regard the humanities and the social sciences are forerunners: "Rather than the humanities being pre-scientific, it is the natural sciences which until very recently have been pre-social." (Gibbons et al., 1994, p. 99). The turn towards social accountability suggests that the quality of contemporary science is not determined by academic criteria alone

but by a broader contextualization of knowledge. Reflexivity has always been a characteristic of research in the humanities: history, literary studies, and philosophy are all fields in which self-reflection is a prominent feature.

Interdisciplinary interaction is also common in the humanities. Fields such as literary studies and philosophy are loosely organized microcultures that are marked by conflicting communities. An example is the research concerned with the classical world, which is inhabited by archaeologists, philologists, historians, and specialists in Greek and Latin to mention a few (Gibbons et al., 1994, p. 100). The intellectual borders of fields in the humanities have always been blurred, and the amount of interdisciplinary interaction in these fields is high.

Interdisciplinarity

Boundary crossing is an intrinsic part of contemporary academic research and the boundaries that are crossed are drawn between academic and popular knowledge, science, and non-science, hard and soft knowledge, basic and applied research, explanation and interpretation, qualitative and quantitative methods, and so forth. But mostly when boundary crossing is discussed in the sociology of science, it is disciplinary boundaries that are referred to (Klein, 1996).

The emphasis on *interdisciplinarity* can be somewhat contradictory in a time of further and further specialization. As Weingart (2000, p. 30) notices "[…] it reveals the seemingly paradoxical mechanism that the more differentiation of knowledge production the more intense will be the call for interdisciplinarity." Interdisciplinarity could in this sense be seen as an influential concept in the debate about how academic research should be organized.

The concept of interdisciplinarity is operationalized in this study as a measure of the interaction between disciplines and fields. An inherent contradiction in this approach is that in order to study 'border crossing,' borders must be drawn. A conventional delineation of fields must first be made before the blurring of categorizations can be studied (Van den Besslar & Heimeriks, 2001). A recent example of a study that uses joint authorship as an indication of interdisciplinarity is Levitt, Thelwall and Oppenheim (2011). They found an increase of interdisciplinarity in the social sciences in the period 1980-2000, but the results vary greatly between disciplines and the categorization of publications may influence the result. Gringas and Larivière (2010) conducted a longitudinal study (1900-2010) of references and found no increase of interdisciplinary citing in the humanities until the beginning of the 21st century, when significant growth occurred.

Interdisciplinary citing was used as a measure in this study as well. Thus, the more a paper cites publications from other research fields, the more interdisciplinary it is (Small, 2010, p. 836). This simplified notion of interdis-

ciplinarity suits bibliometric methods well. At the same time, however, it fails to identify and differentiate between different 'degrees' of interdisciplinarity and the diverse forms it can take. Usually one distinguishes between *multi-, inter-*, and *transdisciplinarity*. A definition of these concepts is given by Wagner et al. (2010, p. 16):

> *Multidisciplinary* approaches juxtapose disciplinary/professional perspectives adding breadth and available knowledge, information and methods. […] In short, the multidisciplinary research product is no more and no less than the simple sum of its parts.
>
> *Interdisciplinary* approaches integrate disciplinary data, methods, tools, concepts, and theories in order to create a holistic view or common understanding of a complex issue, question or problem. […] the integrative synthesis is different from, and greater than, the sum of its parts.
>
> *Transdisciplinary* approaches are comprehensive frameworks that transcend the narrow scope of disciplinary world views through an overarching synthesis, such as general systems, policy sciences, feminisms, sustainability, […].

The level of integration constitutes the main difference between these three concepts. Methods and theories from different disciplines are used in multidisciplinary research, but there is little integration between them, while interdisciplinary research aims for an integrated approach that goes beyond disciplinary contributions. According to the given definition, transdisciplinary research differs from the other concepts by suggesting a perspective—such as 'gender' or the 'environment'—that supersedes the traditional labeling of knowledge in disciplines. When using these concepts in bibliometric research, it is at times hard to distinguish between the different levels of 'border crossing.' Thus, interdisciplinarity is used in this thesis as a general concept for describing the degree of disciplinary border crossing, as an in-depth qualitative study of the actual use of theories and concepts is required in order to understand the nature of these 'border crossings' more thoroughly.

   Interdisciplinary interaction can be an indication of the status of a discipline—is it an exporter or an importer?—and Klein (1996, p. 47) mentions literary studies, which through the current elevated status of literary theory has gained a high social capital in other fields of research. Theoretical trends and concepts influence the degree of 'crossing' going on and the import of 'critical' theories from Europe—in particular the influential authors labeled as 'French theory'—has contributed to interaction between humanistic disciplines and disciplines within the social sciences.

   The identity of a discipline is a factor that determines how and if it interacts with other disciplines. Disciplines having a *synoptic* or *synthetic* identity are supposed to have a loose aggregation of interest, which makes them open for influences from other research fields. This is typical for disciplines such

as anthropology, history, philosophy, geography, and literary studies (Klein, 1996, p. 40). The synthetic identity of the humanities and in particular literary studies influences not only the collaboration practice of scholars but also more importantly for this project the referencing practices within these disciplines.

A Theoretical Toolbox for the Study of Citation Patterns

Whitley's focus on organizational structure and Becher's and Trowler's characterization of disciplinary differences are in this study used to understand scholarly communication in general and referencing practices in particular. This does not suggest that epistemological differences are neglected; rather they are, in Whitley's theory, integrated with organizational differences. An overview of how the two different frameworks as well as the concepts of 'mode 2' and interdisciplinarity describe research in the field of literary studies is given below (Table 5):

Table 5. Characterization of literary studies: A 'theoretical toolbox'

Whitley (2000)	Becher & Trowler (2001)	Gibbons (1994)	Klein (1996)
Intellectually varied and fluid; high task uncertainty and low degree of task specialization; less standardized communication and mixed audience; research seldom coordinated.	Divergent: lacking a central core of theory; rural: covers a broad territory; pure: research not directed towards application.	Transdisciplinary; socially accountable; reflexive.	'Synoptic' or 'synthetic' identity: less of a core and interested in the knowledge of other fields.

The theories outlined in Whitley (2000) and Becher and Trowler (2001) are employed in the analysis of communication structures and citation patterns in literary studies. The theoretical tools developed by Whitley come foremost from an organizational perspective, while Becher and Trowler have an ethnological and sociological approach. The two theories are well in line with each other, as is indicated by several overlapping concepts. The main difference is that in Whitley's framework an effort is made to explain how and why these features are interrelated: a low degree of task specialization is related to the 'mixed audience,' which in turn influences how research is communicated. The framework used by Becher and Trowler, on the other hand, is empirically derived. In fact, the simplicity of their model is an advantage when explaining differences between fields.

In order to explain changes in scholarly communication concepts as 'mode 2' (Gibbons et al., 1994) and 'interdisciplinarity' (Klein, 1996) are

utilized. The concepts used by these authors are also incorporated in the theoretical toolbox. The openness to influences from other contexts is one such feature, and the heterogenic nature of many research fields in the humanities is mentioned in all accounts, although the concepts used differ: 'intellectually varied and fluid,' 'divergent,' 'transdiciplinary,'and 'synoptic'. Thus, the theories outlined above have a lot of common features although the foci—organizational (Whitley), ethnological or sociological (Becher & Trowler), and change (Gibbons)—are rather diverse. All these theories have drawbacks as well as strengths, and no single theory or conceptual framework could cover all the features that characterize a research field. Consequently, the theories and concepts outlined above together form an integrated theoretical setting used to explain, compare, criticize, and synthesize the results of the four studies.

The theoretical toolbox formed in this chapter has been developed in order to explain and discuss the connection between the social and intellectual organization of fields and citation patterns. This study builds upon the assumption that referencing practices and citation patterns can be explained by the characteristics of a research field. These characteristics are related to boundaries and the intellectual integration of research fields: a weakly bounded field lacking a central core would be influenced by other research fields and could therefore be more interdisciplinary in its referencing practices, while a field with clear boundaries and a low task uncertainty would be more inclined to intradisciplinary citing.

Citation patterns are also determined by the number of researchers engaged with a certain topic: in an urban field it is important always to keep up with the 'research front' and cite recent sources, while the age of sources plays a minor role in a rural field. This is also connected to the speed of publication, which is much higher in an urban field (biomedicine) than in a rural one (literary studies).

Another variable that influences citation patterns is the audience: in disciplines where a non-academic audience plays an important role, scholars may choose a referencing style—the footnote is a typical example—which serves both an academic and a public audience. The degree of dependence between researchers and the view of originality are further factors that influence how references are given: it is important to cite one's peers in a field where researchers are dependent on each other for reputation and rewards, but in fields were originality is highly valued, referencing serves other purposes as well.

Important characteristics of research fields and how these affect citation patterns have been discussed in the theoretical overview. A more thorough analysis of referencing practices in the humanities is conducted in the first study (chapter 4), which should be seen as a continuation and development of the theoretical framework of the thesis.

Visualizations, Mapping Techniques, and Topographical Metaphors

This dissertation uses visualizations in order to portray relations and structures in scholarly communication. Visualizations, in this case bibliometric maps based on citation data, are utilized to depict complex structures. The appearance of these structures in maps is dependent on the methods and techniques employed. Thus, a short introduction to the use of maps, knowledge visualization, and methods for constructing co-citation maps is necessary.

The inherent contradiction of all map-making, including bibliometric maps, is that in order to depict a phenomenon we need knowledge about it, but the goal of mapping is to reach new insights. Furthermore, the lack of prior knowledge can hinder the mapping as such: "If we attempt to map the world of a story before we explore it, we are likely either to (a) prematurely limit our exploration, so as to reduce the amount of material we need to consider, or (b) explore at length but, recognizing the impossibility of taking notes of everything, and having no sound basis for choosing what to include, arbitrarily omit entire realms of information" (Turci, 2004, p. 14). The balancing of 'preconceptions' and 'arbitrary decisions' is a delicate matter, but a partial solution is to be as open and explicit as possible when describing the choice of materials and methods.

Maps and other diagrams serve persuasive functions in scholarly texts, and the 'objectivity' of maps, both geographical and conceptual, has been questioned on several grounds. Also, the idea that new techniques and methods create 'better' maps must be scrutinized, and as MacEachern (2004, p. 10) puts it: "This perspective suggests that maps are as much a reflection of (or a metaphor for) the culture that produces them as they are a representation of a section of the earth or activities on it." Depending on the design of a map, it can be placed on a scale of abstraction: from images that are less abstract to diagrams that are generally more abstract (MacEachern, 2004, p. 161). Bibliometrics visualizations usually bear resemblance to diagrams, and are thus in a sense abstract. Consequently, a bibliometric map demands prior knowledge or (at times lengthy) explanations in order to be understood by the viewer.

The use of maps reflects the need to reduce complexities and present them in a two-dimensional space. Maps or other visualizations allow researchers to grasp and capture a phenomenon. In this sense they serve as inscriptions that allow scientists to, in the words of Latour (1999, p. 29), "[…] master the world, but only if the world comes to them in the form of two-dimensional, superposable, combinable inscriptions." Hence, bibliometric maps are tools for reducing complexities that allow researchers to interpret their data.

Visualization of Knowledge Structures

The first attempts of using visualizations based on citation data for depicting knowledge structures were conducted in the early sixties. Visualization techniques have both been used to map science as whole as well as specific areas of research. The aim of these techniques is to "[…] reveal realms of scientific communication as reflected in the scientific literature and the citation paths woven between researchers" (Börner, Chen & Boyack, 2003, p. 183). Several methods are used for mapping semantic and citation networks, and among the ones covered by Börner, Chen and Boyack (2003) are *eigenvalue*, *factor analysis*, *multidimensional scaling*, *latent semantic analysis*, *pathfinder network scaling*, *self-organizing maps*, and *cluster analysis*. These all have benefits and drawbacks depending on the goal of the study and the material used. The type of matrix generation and the inclusion of all authors or only first authors is yet another parameter that influences the results. Schneider, Larsen and Ingwersen (2009) compared the all-author co-citation (ACA) versus first author co-citation and found that the all-author approach results in more distinct groupings of authors while first-ACA is better in depicting specialties. Another reoccurring question in the creation of citation matrices is the use of correlation measures. Ahlgren, Jarneving and Rousseau (2003) scrutinized the use of correlation measures when creating matrixes and concluded that Pearson correlation might not be the best choice for co-citation mapping, since co-citation frequencies are measured on an ordinal scale rather than on an absolute scale.

There are a wide variety of methods for doing co-occurrence mapping, and a growing number of software programs for visualization are available, and no particular one can be regarded as the best or leading one (Cobo et al., 2011). Furthermore, there is no consensus on how maps should be created or validated. The approach used in this study is not inventive or elaborated but rather follows a straightforward approach for constructing bibliometric maps. An advantage of this method is that scholars in the humanities who are not specialized in bibliometric methods can easily adopt it.

The procedure used in this thesis can be described in a few steps. [18] Initially, citation data were selected and downloaded from *Thomson Reuter Web of Science*. The retrieved dataset was then converted to *Dialog* format using the *Bibexcel* software.[19] The reference strings were cleaned and duplicate author names were standardized (e.g. Edward Said could be written either as 'Said, E' or 'Said EW'). Then citation frequencies were calculated and the co-occurrence of items was produced. Detailed instructions for this procedure can be found in Persson, Danell and Schneider (2009). Next, the

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[18] An account on methods adopted and the software used in the specific studies is found in chapters 6 and 7.

[19] The latest version of the software and several tutorials can be found at: [http://www8.umu.se/inforsk/Bibexcel/] accessed: 2011-10-25.

result of the co-occurrence analysis was visualized using two different programs and methods. The third study used the *Pajek* software (de Nooy, Mrvar & Batagelj, 2005) together with a clustering routine proposed by Persson (1994). In the case of analyzing Swedish literary studies the *Mapequation* software and a 'pathfinder' approach for visualizing relational data were employed (Rosvall, Axelsson & Bergstrom, 2009). The latter approach was chosen because it provides clearer structures in a small dataset, and it has been stated that this approach "[…] provides a more accurate representation of local relationships than techniques such as MDS" (Börner, Chen & Boyack, 2005, p. 201). Finally, it should be noted that several techniques and software programs have been tested on the datasets in this thesis, and although the difference in visual appearance between programs such as *Pajek* and *Mapequation* is great, the basic structures remain unaltered.[20]

Topographical Metaphors

The increasing use of visualizations for depicting the structure and dynamics of scientific fields is linked to "[…] a rapid growth in the use of spatial concepts to explain phenomena that previously had been viewed in aspatial terms" (Skupin, 2009, p. 233). Both the interest in visualization and the use of topographical metaphors can be linked to a broad movement known as 'the spatial turn' (Skupin, 2009, p. 233-234). Topographical metaphors are often used to describe scientific disciplines and research specialties. Research directed at a specific topic is described as a 'field' with 'boundaries' to other neighboring fields. Concepts such as a 'research front' are employed for describing the dynamics of science. Scholars are portrayed in the 'disciplinary landscape' and disciplines have been described as 'urban' or 'rural' in their intellectual organization (Becher & Trowler, 2001, 106-108). These metaphors are used in this thesis as well, sometimes extensively, and they can hardly be avoided when trying to describe the social and intellectual organization of research. In fact metaphors in general are fundamental for our understanding, and our conceptual system is built upon on metaphorical thinking (Lakoff & Johnson, 2003, p. 3). Metaphors are beneficial for understanding complex phenomena, but they can also be misleading and evoke unintended or problematic associations. An example is the characterization of fields either as 'urban' or 'rural,' and the common description of novel research being at the 'research front.' These concepts are useful for describing the dynamics of research fields, but one must be aware of the connotations that the use of these particular metaphors might evoke. As stated above, 'rural' could unintentionally be associated with something old and backward. The concept of a 'research front,' on the other hand, relates to images of battle, revolutions, and exploration, activities often perceived as

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[20] Among the software tested during the work with this dissertation are *Netdraw*, *The Network Workbench* and *Gephi*.

male domains. The use of metaphors might in this case reinforce and cement stereotypes rather than improve our understanding of science. Thus, metaphors are a necessity for understanding and explaining, but an awareness of how the use of particular metaphors influences and governs our thinking is warranted.

8. Summary and Discussion

This thesis has followed the scholarly reference through its use in the text, across disciplinary borders, and into the machinery of bibliometric analysis. The current chapter summarizes some of the insights gained, highlights a few conclusions, and reflects on the methods and materials used. It outlines the potential of bibliometric studies on the humanities and discusses the problems associated with the use of bibliometric measures in research evaluation. The findings from the four studies are summarized in the first part of the chapter, followed by reflections on the methodology used, and the chapter ends with a discussion regarding the evaluation of research in the humanities using bibliometric methods.

Citation Patterns in Literary Studies

Sociologists of science and information scientists have foremost focused on how science is communicated, and humanist scholars have been successful in analyzing the 'practices' and 'cultures' of the natural sciences while analyses of their own fields have been rare. However, such studies are beneficial not only for reflecting on the assumptions regarding the characteristics of scholarship in the humanities but also in order to assess the originality and value of research in these fields.

References are used in all academic fields in order to acknowledge previous research, to develop the arguments made, and to frame the context in which research is situated. However, referencing practices and citation patterns differ depending on the social and intellectual organization of the research field. Literary studies can be described as a fragmented, divergent, interdisciplinary, and rural field, and, as I show below, are these characteristics important for understanding referencing practices and citation patterns.

The first article (*chapter four*) outlines the implications that referencing practices in the humanities have for the use of bibliometric methods. In this study I show how the search for and the use of sources in the humanities influences referencing practices and citation patterns.

The search for sources is intrinsically bound up with the topics and problems addressed in research. Previous studies have found that literature scholars often browse through library shelves and that chaining (following references) is a common method for locating literature. This is partly due to

searches being focused not only on 'topical relevance' (e.g. sources on a specific period, author or context) but also towards 'paradigmatic relevance' (e.g. offering a perspective on a topic). The variety and the combination of sources used by literature scholars can be further explained by the concept of 'bisociation,' Bisociation, a concept introduced by Koestler, describes how novelty in research can be gained through the mix of two sources that at first can be seen as unrelated. The skillful 'remixing' of sources—connecting seemingly disparate texts and creating new insights from these—is valued as an act of creativity and originality by many scholars. The methods for searching, the focus on both topical as well as paradigmatic relevance and the remixing of sources suggest that a variety of sources from different fields and contexts are used in research.

The choice of annotation system may appear to be a mere technical issue, but the use of footnotes, endnotes, or references in brackets also have epistemological consequences. An example is the choice of using integral references where the author's name is given in the main text or a non-integral one (where author's name is given in a parentheses or a footnote/endnote). A system using integral references that includes both the first and family name in the text entails that claims and references are tied more closely to the person making a specific claim. The use of integral references is common in the humanities and, as previous research has shown, they are often accompanied by hedging, evoking a discussion such as 'say,' 'suggest,' and 'argue.' Also, negative or contrastive references (references that go against the conclusions drawn in the text) are common in the humanities. Furthermore, analyses of hedgings that are used in scholarly texts show that researchers in the humanities are given a great deal of autonomy when evaluating the statements of other scholars. Thus, references are often used for evoking a discussion or for setting the context in which research is placed. Obviously, references are given to support 'knowledge claims' and to acknowledge previous research, but the mix of sources is also used to create one's own unique intellectual identity. The author is given considerable freedom in evaluating sources in the humanities, and the meaning of a reference is ambiguous when separated from the text in which it is given.

Citation analysis as it is commonly used today presupposes a strong topical coherence between citing and cited sources. Also, the popular method of co-citation analysis implies that sources cited by a document are somewhat focused on the same area of research. However, the degree of topical coherence among sources cited can be low in research fields such as literary studies. Thus, I suggest that citation patterns and structures in literary studies can only be understood in relation to referencing practices in the field.

In the second article (*chapter five*) I use a large selection of English-language journals to analyze the intellectual base (highly cited texts) and the interdisciplinarity of literary studies. In order to gain an historical understanding of developments in the field two time periods (1978–1987) and

(1998–2007) were selected for analysis. The intellectual base of literary studies could be identified through an analysis of citations in 34 literature journals. A majority of the 200 most cited publications was single-authored monographs, and a stable canon was identified, including authors such as: Aristotle, Barthes, Benjamin, Derrida, Foucault, Frye, Genette, Lacan, Ovid, Joyce, and Wittgenstein. A few recent authors—such as Fredric Jameson, Homi Bhabha, and Judith Butler—were included among the highly cited sources, but the dominance of 'dead white males' is still evident. The findings show that the 'vocational' level (literary works) will intermingle with the 'epistemological level' (scholarly works) when doing citation analysis on literary studies. The citation analyst can make a decision to exclude non-scholarly sources, although this can be difficult and time consuming, or one can, as I have practiced in this study, make a point of including all cited sources. In fact, the interplay between the material studied (vocational) and scholarly works (epistemological) in fields such as literary studies or history is an interesting venue of research in itself.

In order to study the interdisciplinarity of the field I compared the classification of the 200 most often cited monographs in the two periods. An increase in the interdisciplinarity of the field during the last 20 years—at least when looking at monographs that are highly cited in literature journals—was found. Publications indexed in the category of 'literature' are less frequently cited, and influences from other disciplines (such as sociology, art history and history) have increased. The citing of literary works (novels, poetry, drama) is also decreasing, which could be a sign of a broadening and diversification of the field to other materials besides the literary text.

The relatively high share of interdisciplinary citations found in both periods can be explained by literary studies being a weakly bound, divergent field that lacks a central core. The degree to which colleagues are dependent on their peers for recognition is another important factor for understanding citation patterns; the more dependent the individual researcher is on a distinct group of scholars for recognition, the more concentrated to a core group of researchers will citations be. Literary studies is a field characterized by low mutual dependency between researchers, and accordingly the citation frequencies—even for highly cited authors—is low.

However, the organization of the research field does not explain the increase in interdisciplinary citing, and the tendency of citing sources from the social sciences. The findings of this study supports the notion of a 'social turn' in contemporary literary studies, and the results can be interpreted as a move from the 'rhetorical' to the 'social.' This development can be explained by a general focus on the social across research fields in the humanities, and the emergence of fields such as cultural, postcolonial, and gender studies. A further focus on emergent social issues connected to gender issues and postcolonial perspectives can also be interpreted as an adherence to calls for more reflexive and 'useable' research. The turn towards the social can

thus be viewed against the background of 'a new production of knowledge' where the social context and the usability of research is in focus. Rather than pointing to one of these explanations in general, I propose that these trends together are plausible explanations for the increased citing of sources from the social sciences. A general emphasis on interdisciplinary research in academia must also be considered.

The interdisciplinarity of many fields in the humanities is illustrated by publications that are highly cited across several research fields. Such an interdisciplinary giant is the German writer and literary critic Walter Benjamin. As I show in chapter six, the anthology of his essays titled *Illuminations* has been cited over four thousand times across the humanities and the social sciences. The number of citations to the publication has grown almost every year since it was published in 1968. The growth of citations to *Illuminations* is partly due to the growth of citing items (e.g. journals and journal articles); however, significant growth can be discerned even when limited to a fixed set of journals.

The growth of citations to *Illuminations* is connected to its interdisciplinary reach. The many 'subject categories' in which journals citing *Illuminations* are indexed is an indication of this, and the sheer number of different journals in which *Illuminations* is cited is another. Obviously Benjamin's essays are being cited in subject categories such as 'literature' or 'literary theory' but categories such as 'sociology,' 'anthropology,' and 'communication' are also common. More surprising is that *Illuminations* is quite often cited by journals categorized as being on the border to the natural sciences (e.g. 'geography'). There are even some citations coming from fields such as 'computer science' and 'physics.'

The extensive citing of Benjamin is not only an indication of the applicability of his works but also an example of how theories in the social sciences and the humanities are adopted in various contexts. The growth of citations can also be viewed in relation to the 'age of theory' and a growing interest in new media forms. However, one must keep in mind that concepts and theories are adjusted when exported to new fields. Thus, a potential for translation, adaptation, and transformation is needed in order to become an interdisciplinary classic.

In the fourth study, references in the Swedish literary journal *Tidskrift för Litteraturvetenskap*, as well as references in applications for research grants to the Swedish research council, are analyzed. The findings show that monographs followed by anthologies and journal articles are the most frequently cited publications, the most common language of cited publications is English and Swedish, and the time span of publications is broad.

The low citation frequencies of individual authors and the difficulty of discerning research specialties in the co-citation maps of highly cited authors in Swedish literary studies can be explained by the research field being characterized as a 'rural.' Rural suggests that the concentration of researchers

and publications on each topic or research specialty is low. The low dependency on other researchers is also a key aspect when describing a field as rural in its organization. The rural character of literary studies has consequences for the communication of research. As there is little competition between researchers and few scholars are engaged in research on the same topic, the need for fast publication is low. The slow pace—the absence of a research front—make scholars less prone to cite recent research, and their colleagues. Thus, the local and national focus of much research in literary studies is a further factor that limits the possibilities of being cited.

A further issue—which might be of concern for literary studies in Sweden—is the language discrepancy between citing and cited material. Thus, although almost all articles in *TFL* are in Swedish, a majority of the material that these articles cite are in English. This is partly an effect of being a small country, and the same pattern is not evident in studies of German literature or French literature. However, the findings are still worrisome for the field as the frequent citing of foreign sources while publishing in Swedish limits the possibility of an effective communication between researchers. Further studies—with a historical view—could possibly show if referencing practices and publication patterns of Swedish literary scholars slowly are becoming more internationally oriented or if a local focus persists.

Three main characteristics that influence referencing practice and citation patterns can be discerned from the studies recapitulated above: *the low dependence on colleagues*, the *rural organization*, and *the diverse audience* of the field. The heterogeneous audience, the rural organization, and the low dependence on colleagues are interrelated. The diverse audience makes it possible for individual researchers to find readers outside there own specialty, with the consequence that researchers are less dependent on colleagues for recognition. The high task uncertainty of literary studies and the low dependence on colleagues gives the individual scholar great freedom in developing a unique research profile, which results in researchers being dispersed across many different topics with little communication between them. Thus, scholars in the humanities enjoy many possibilities when choosing topic, publication channel, and whom to cite, but this in turn limits the potential of getting 'rewards' in the form of citations.

Material and Methodology Revisited

The use of references and citation patterns in literary studies requires that bibliometric methods be modified in order to be applicable. The type of sources cited in different disciplines has been dealt with in several studies, and this study adds to the conclusions reached there. However, few have discussed the implications that differences in referencing practices between fields have for bibliometric analyses. The research questions addressed and

the goals of research differ considerably across fields, and the level varies to which scholars have to relate to previous research. Long time frames for selecting materials is also often mentioned as important when analyzing fields in the humanities. The necessity of adapting for type and age of materials is discussed here as well, but there are other issues that also have to be dealt with, such as the definition of fields and the transaction of references into citations.

The definition of fields or disciplines is a major issue when conducting bibliometric research. The most common method is to choose a selection of journals to represent a discipline or a field. However, this approach—although convenient—has several drawbacks: first, it presupposes that journals are based on research fields, which is not always the case; rather a journal could be representative of a specialty within a discipline, or it could be a multidisciplinary journal. Furthermore, the actual selection of journals can be made in several steps or ways—it could be based on interviews with researchers, on 'categories' in a database (e.g. *WoS* subject categories), or on independent lists of journals compiled by researchers or librarians. In the study of the intellectual base (chapter five) the selection was based on a service for researchers at Lund University designed to be an aid in the choice of journal for publication. Together with the 'Norwegian list' of highly rated journals, this allowed for a selection based on the judgments of scholars and librarians. This resulted in a broad and inclusive collection of journals that was motivated by the wide definition of literary studies used in the study. However, due to the interdisciplinarity and heterogeneity of many fields in the humanities, it could even be questioned if research fields or journals are proper units for citation analysis. Topics, authors, or publications—as in the case of *Illuminations*—are alternatives that are well worth exploring.

The problem of defining fields and research areas also applies to the theories used in this thesis. Whitley's characterization of research fields and the concepts used by Becher and Trowler presuppose that fields and research areas can be clearly demarcated and separated. This becomes evident in a research field such as literary studies that is loosely organized and challenged by 'new' interdisciplinary fields such as cultural studies and gender studies. The influential and critized concept of *mode 2* is more sensitive towards these changes, but, on the other hand, it connects developments in contemporary research that are not nessecarily interrelated. Thus, the changing and fluent disciplinary landscape cannot be fully understood using either of these models. Combining them—as practiced in this thesis—is one step toward a better understanding of how research is organized, but it seems that the technical and methodological development in this area needs to be accompanied by theoretical refinement as well.

Given the importance of the monograph in literary studies, it can be suggested that books would be the obvious choice of material for citation analysis. Yet, monographs are problematic as material for bibliometric studies, as

they target a diverse audience, they vary in length, and they are published inconsistently. An alternative option—utilized in the study of Swedish literary studies—is to use the field delineation employed by granting bodies such as the Swedish Research Council. The categories used by the research council are based on the traditional demarcation between disciplines, but the benefit of using such an approach is that the applications to the research council are judged by the same epistemological merits (they are seen as equal and comparable competitors). Research applications follow a given and limited format and they are produced annually, and this makes them exploitable for bibliometric analysis. Furthermore, the writing and reviewing of research grant applications is an important scholarly practice that so far has received little attention in studies of science.

The application of bibliometric methods on the humanities also warrants methodological modifications. The combination of using citation databases and library classification of books is an option for incorporating citations to books that I utilized in the analysis of the intellectual base of literary studies (chapter five). Another approach explored in the study of *Illuminations* is to focus on a specific publication, and specific pages in this publication, using 'cited reference search.' This method makes it possible to study the 'impact' of specific parts of a publication, which could be valuable in the case of anthologies. The manual indexing of citations is time consuming but also necessary in fields where database coverage is low. Such studies are important in order to depict structures outside the '*WoS/Scopus* universe,' a universe that only covers a small part of all published research.

The referencing practices of literature scholars are diverse—footnotes, endnotes, and references in brackets are all used—and in my analysis of journal articles and research applications in Swedish literary studies several documents did not include formal references at all. Thus, the definition of what formally should count as a citation is not as straightforward as one might think. This is especially the case in fields that are directed to a diverse audience. Both direct and indirect referencing can be counted, and a formal definition of a reference is needed; especially when different types of referencing systems are used. The need for a formal definition of a reference indicates that the transformation of references to citations—explicit as well as implicit—is sometimes a complicated procedure. Citations are not given: they are constructed by the hands of the indexer.

The conclusions regarding bibliometric methods concern three different issues that have to be addressed when using bibliometric analyses on the humanities: the first issue—and the one discussed in many previous studies—is the problem of data coverage. Citation databases cover only a small part of research in the humanities, as non-journal and non-English-language material is excluded. The second issue—which is pronounced throughout my study—is that referencing practices affect the distribution and structures of citations. It has been claimed that individual differences in referencing be-

havior between researchers are irrelevant on the aggregated level of citation analysis; however, when discussing referencing practices in a field or area, these difference cannot be ignored. The third issue—which especially the fourth study emphasizes—is that the the citation frequencies for researchers in rural fields like literary studies might be so low that citation analysis in its current form is inapplicable.

The methodology used in this thesis has been adopted in order to study citation patterns in literary studies, with the expectation that similar approaches could be fruitful in studying comparable research fields in the humanities and the social sciences. The methods applied in this study should be seen as an example of how bibliometric methods can be customized to be applicable to a field in the humanities; however, much research is still required in order to develop a 'bibliometrics for the humanities.'

The Politics of Bibliometrics: Measures of Research Quality in the Humanities

The current emphasis on assessment is not limited to the academic sphere; rather it is ubiquitous in modern society. Large resources are invested by state and private enterprises into research every year. Taxpayers, politicians, stockowners and investors want to know how these resources are used and if they are used wisely. Thus, with a further focus on assessment throughout society, scholars cannot avoid the annoyance of being evaluated. What researchers can do is to be a part of the process of establishing standards of how they want to be judged. Scholars in the humanities have been rather absent from the discussion regarding how their research should be valued and evaluated. One reason for this could be that it is hard to reach a consensus regarding research quality within divergent fields with high technical task uncertainty such as literary studies. In this matter bibliometric studies of research fields might serve an important function in making quality standards visible. Hence, bibliometrics makes implicit value systems explicit, and in doing so it stimulates a debate about research goals and research quality in a specific field.

Although bibliometric approaches for evaluating research have been properly criticized for cementing structures, their potential for questioning these structures must be emphasized as well. Bibliometric studies have put the focus on gender bias, problems with peer review, and the undervaluation of interdisciplinary research. The further development of a critical bibliometrics that investigates issues that go beyond rankings and evaluations appears to be increasingly important—not least for the future of bibliometrics as a research field.

The bibliometric community has rightly discouraged the use of traditional citation analysis of journals indexed in citation databases to evaluate the humanities. This conclusion is firmly based on numerous studies showing that the coverage of the humanities in databases such as *Web of Science* or *Scopus* is meager and not representative for the field as a whole. Research evaluation systems, such as the Norwegian one, amend this by incorporating all scholarly publications. The publications included are then awarded points depending on publication channel (monograph, anthology, or journal) and the 'quality' of the journal or the publisher. However, the definition of what should count as a 'scholarly publication' still remains problematic. There is no consensus on what an important research output is in the humanities; a peer-reviewed journal article, a book chapter in an anthology edited by a renowned scholar, or a monograph at a prestigious non-academic publisher could all be seen as important outputs, and publications directed to a popular audience are in some instances highly rated. The coverage of the Norwegian system suggest that there is a discrepancy between what is considered as a scholarly publication by literary researchers and what is considered a scholarly item by the evaluation system.

The humanities have always played a role both in academia and in culture and society at large, and prominent scholars have often been public figures (e.g. intellectuals) that take part in the cultural and political debate. Furthermore, the boundary between scholarly and popular publications is elusive, as cultural journals or monthly magazines might be considered possible outlets of research. Literary studies is diverse and heterogenic in its organization, but, on the other hand, it can be seen as well integrated in society as a whole. However, publications directed to a public audience are seldom counted in research assessment exercises, although the communication of research to all parts of society is deemed as important. Consequently, the choice of publications that should be counted in evaluating a research field like literary studies is dependent on our view of the humanities, its purpose in academia and in society at large.

A reccurrent problem of evaluating the humanities is the long time span needed for measuring the impact of research. The lifetime, as well as the distribution of citations to a publication over time, is something that has to be considered. The example of *Illuminations*—although exceptional in many respects—is telling. Research by humanities scholars may be relevant in twenty, fifty or even a hundred years, but obviously this aspect cannot be measured today. Hence, some research in the humanities—such as the preservation and translation of cultural heritage—might be of great value for future generations, but it is invisible in the short perspective of research evaluation.

This study, like many others, emphasizes that bibliometric studies of fields such as literary studies need to incorporate non-English and non-journal publications in order to produce valid and fair results. It is also im-

portant to distinguish between scholarly and non-scholarly publications, and it is obvious that a simple adaptation of definitions from the natural sciences would not solve this matter in a satisfactory manner. Instead, evaluations of the humanities must incorporate a wide range of sources, and make these comparable. Ultimately, the choice of an evaluation system is a political one, but bibliometricians and the researchers involved should articulate the implications and consequences that the adoption of a specific system might have.

The appeal of a research evaluation system encompassing all research fields might be strong, but it is my firm belief that a diversity of evaluation methods is the best possible option. Three reasons can be given for this: first, a range of evaluation methods would be in accordance with the diverse organization of research across scholarly fields; second, it is likely that an all encompassing system such as the Norwegian one will have an initial positive effect on the production of research, but as scholars adopt this effect will wear off; and third, it is much more difficult for researchers to 'play the system' if a range of evaluation methods are used.

That the advent of research evaluation systems using publication and citation counts will influence the practice of writing and publishing research is evident. It can be assumed that the wide applications of such measures will change publication and referencing practices of scholars in all fields, but how and to what extent is still largely unexplored. The consequences of evaluation schemes are also bound to have diverse effects depending on how research fields are organized. A rural field might adapt in another manner than an urban field, where researchers are highly dependent on each other. It has been suggested that implementation of research evaluation systems might have negative effects—especially in weakly bound fields such as literary studies. It is noteworthy that evaluation systems are implemented with very little research on how they will influence the practices of scholars and the quality of research. Thus, both large quantitative studies and detailed qualitative studies of the implementation of such systems are needed.

Knowledge about referencing practices and citation patterns in different disciplines becomes increasingly important when citations are used as indicators of impact and research quality. This study has shown that the 'consumption' of references is a matter of intellectual deliberation, disciplinary tradition, and a practice involved in the writing of academic texts. The study of how researchers cite conveys a great deal about the everyday practices of scholars, while citation patterns and structures reveal much about research focus, theoretical trends, and interdisciplinary interactions. Thus, citations can provide valuable knowledge regarding the organization of scholarly fields and the communication of research, even in fields where the terrain is uneven, the paths less traveled, and where maps are scarce.

9. Sammanfattning

Inledning

Bibliometrin – statistiska analyser av publikationer och deras egenskaper – är ett växande forskningsområde. En bidragande orsak till intresset är det ökade användandet bibliometriska mått i forskningsevaluering. Bibliometriska metoder har tidigare främst applicerats på naturvetenskapliga och samhällsvetenskapliga forskningsfält, men med ett ökat fokus på "citeringar" som ett mått på inflytande och kvalité är kunskap om hur forskare inom humaniora citerar och citeras nödvändig.[41] Denna avhandling studerar citeringspraktiker och citeringsmönster inom litteraturvetenskapen och diskuterar resultaten med utgångspunkt i hur olika vetenskapsområden är organiserade. Förhoppningen är att kunskap om hur vetenskaperna skiljer sig åt i detta hänseende kan förklara om och hur bibliometriska metoder kan användas på humaniora. Syftet avhandlingen är således att undersöka hur litteraturvetenskapen som forskningsfält kan studeras med hjälp av bibliometriska metoder. Ett mål med studien är också att visa hur bibliometriska metoder måste modifieras för att passa ett forskningsfält inom humaniora.

Referenser är en viktig del av den vetenskapliga texten, och genom att studera citeringsmönster kan forskare få kunskap om strukturer och trender inom ett forskningsfält. Denna avhandling analyserar citeringspraktiker och citeringsmönster inom litteraturvetenskapen ur ett vetenskapssociologiskt perspektiv, med fokus på hur forskning kommuniceras. För att studera detta har fyra delstudier utförts där den första analyserar citeringspraktiker inom humaniora, den andra studerar hur den "intellektuella basen" eller med andra ord den "vetenskapliga kanon" ser ut inom ämnet litteraturvetenskap, den tredje studien analyserar hur en specifik publikation – Walter Benjamins *Illuminations* – har citerats över tid och över disciplinära gränser. Den avslutande delstudien tar sig an ett svenskt material genom att indexera och analysera referenser i litteraturtidskriften *Tidskrift för Litteraturvetenskap* (TFL) och referenser i ansökningar till Vetenskapsrådet (VR).

Resultaten från dessa analyser diskuteras med hjälp av ett teoretiskt ramverk från vetenskapssociologin. Richard Whitleys (1984) teori om vetenskapens sociala och intellektuella organisation har använts för att förstå cit-

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[41] Citering är här en översättning av engelskans (citation) och betyder inte "citering" i betydelsen att ordagrant återge ett specifikt textstycke.

eringspraktiker och citeringsmönster inom litteraturvetenskapen. Whitleys teori tar sin utgångspunkt i skillnader i den grad av frihet som den individuella forskaren har i att välja sitt forskningsämne och de metoder som används. Litteraturvetenskapen karaktäriseras enligt denna teori som "fragmenterad" då de enskilda forskarna har stor frihet att själva bestämma forskningens inriktning och mål samt de metoder som används för att nå dessa mål. Även den tilltänkta publiken – som i litteraturvetenskapen består av både forskare och en intresserad allmänhet – påverkar hur forskare publicerar och refererar.

Förutom Whitleys teori har även skillnader mellan vetenskaperna som framhålls av Becher och Trowler (2001) använts. De skiljer mellan hårda och mjuka vetenskaper, grundforskning och tillämpad forskning samt mellan discipliner som är "urbana" (många forskare som fokuserar på samma ämne) eller "rurala" (få forskare som fokuserar på samma ämnesområde) i sin organisation. Vidare har teorier om förändringar i hur vetenskapen organiseras ("mode 2") samt teorier om interdisciplinaritet inkluderats i det teoretiska ramverket. Mode 2 är ett begrepp som används för att beskriva samtida förändringar i hur forskningen bedrivs. Ökad interdisciplinaritet, fokus på användbar forskning, kontextualisering, ökade kostnader och instrumentalisering är några av de fenomen som ingår i begreppet 'mode 2'. Denna beskrivning av nutida forskning har dock blivit ifrågasatt, och frågan är om dessa förändringar verkligen är relaterade till varandra. Därför fokuserar avhandlingen främst på två aspekter av 'mode 2': kontextualisering och interdisciplinaritet.

Literaturvetenskapen betraktas i denna studie som ett forskningsfält snarare än som en disciplin eftersom litteraturvetare är aktiva inom många olika discipliner och språk. Det finns också en ständigt pågående diskussion kring vad som är litteraturvetenskapens kärna och uppdrag. Trots fältets heterogenitet kan ändå vissa gemensamma drag identifieras. Litteraturvetenskapen karaktäriseras enligt tidigare forskning på följande sätt: forskaren söker efter information själv (ofta genom att följa referenser eller genom att 'browsa'), och författandet av vetenskapliga texter sker individuellt. Samarbete med andra forskare är vanliga, men de manifesteras sällan i samförfattarskap. Litteraturvetare refererar främst till monografier, och åldern på källan är oväsentlig för dess användning. Vidare spelar publikationer på andra språk än engelska en viktig roll i forskningen.

Huruvida publiceringsmönster och citeringspraktiker inom humaniora är under förändring är en omdebatterad fråga. En del forskning pekar emot att så är fallet, men i stort verkar det som att forskningspraktiker inom humaniora är oförändrade. Troligtvis kan flera trender inom samtida forskning: digitalisering, open access och användandet av bibliometriska mått för fördelning av resurser påverka hur humanister publicerar och citerar. Dock är många discipliner inom humaniora traditionstyngda vilket innebär att snabba omvälvande förändringar knappast är troliga.

Delstudier

Refereringspraktiker inom humaniora och deras konsekvenser för bibliometriska analyser

Den första delstudien studerar vilka konsekvenser citeringspraktiker inom humaniora har för användandet av bibliometriska metoder. Studien är främst teoretisk men bygger också på tidigare forskning inom sociologin, biblioteks- och informationsvetenskapen och lingvistiken. Ett särskilt fokus ligger på hur referensen används i texten, den kontext som den ges i, samt den form som referensen har.

Den vetenskapliga referensen som sådan har en lång historia, och det organiserade användandet av referenser började redan i det antika Grekland. Utvecklandet av ett modernt annoteringsystem inom vetenskapen skedde under sextonhundra- och sjuttonhundratalet, och snart sågs refererandet som en viktig del av den vetenskapliga praktiken. Inom humaniora utvecklades en tradition av att använda fotnoter vilket möjliggjorde för forskaren att både kommentera och referera.

Referenser fungerar som retoriska verktyg i en text och beroende på hur referensen är skriven kan den vara mer eller mindre övertygande. Generellt är referenser inom humaniora mer diskuterande och negerande snarare än övertygande. Forskaren ges därmed stor frihet när det gäller att modifiera innehållet i en referens, och ofta är påståendena som görs starkt kopplade till en person. Det har också visat sig att referenser, som emotsäger innehållet i meningen som de ingår i, är vanliga inom humaniora. Sammantaget gör detta att referenser inom humaniora är beroende av den kontext där de är givna, och en stor del av betydelsen försvinner när de skiljs från denna.

Citeringsmönster kan kopplas till hur ett forskningsfält är organiserat. I ett forskningsfält, som litteraturvetenskapen, där en fast kärna saknas krävs fler referenser för att beskriva den kontext i vilken forskningen placeras. Den utsträckning som forskare är beroende av varandra för erkännande är också en viktig aspekt för att förstå citeringsmönster. Behovet av att förankra sin forskning hos kolleger är inom litteraturvetenskapen relativt litet. Detta gör att den enskilda forskaren åtnjuter stor frihet när det gäller att välja ämne, metod och teori men det gör också att möjligheterna att bli citerad minskar.

Vidare kan citeringspraktiker kopplas till hur man söker litteratur och hur man ser på originalitet och kreativitet. Humanistiska forskare söker inte enbart efter källor om ett specifikt ämne – exempelvis Shakespeares dramatik – utan också efter litteratur som kan bringa nytt ljus över ett gammalt problem. Själva kombinationen av källor och forskningslitteratur – av Koestler benämnt "bisociation" – blir en viktig del av att skapa originalitet. Sammantaget innebär detta att citeringspraktiker inom forskningsfält som litteraturvetenskapen ser annorlunda ut än inom naturvetenskapen, och slutsaten

blir att bibliometriska studier av humaniora måste ta detta i beaktande vid utformandet av metoder och i val av material.

Interdisciplinaritet och den intellektuella basen: citeringsmönster i engelskpråkiga litteraturtidskrifter

I den andra artikeln studeras högt citerade monografier inom litteraturvetenskapen. Två tidsperioder, 1978–187 samt 1998–2007, jämförs för att upptäcka förändringar i citeringsmönster. Referenser i artiklar från 34 litteraturtidskrifter analyserades och ur dessa togs en lista på de 200 mest citerade verken fram. En överväldigande majoritet av dessa är monografier, och bland de högt citerade verken återfinns *Grammatology* (Jacques Derrida), *S/Z* (Roland Barthes), *Illuminations* (Walter Benjamin) och *Dialogic Imagination: Four Essays* (Mikhail Bakhtin). Den mest refererade texten under den senare perioden, *Illuminations* (173 cit.), är ofta citerad men i jämförelse med högt citerade texter inom naturvetenskapen är citeringarna få. Vidare kan en interdisciplinär (och internationell) kanon som är relativt stabil under perioden identifieras. Tydligt är också att publikationens ålder har liten påverkan på hur välciterad den är. Intressant är att även skönlitterära texter som exempelvis *Ulysses* av James Joyce och *Metamorfoser* av Ovidius återfinns bland publikationer som ofta citeras.

Referenser till publikationer indexerade inom andra discipliner kan ses som en indikation på hur pass interdisciplinärt ett forskningsfält är. I denna delstudie analyserades under vilken ämneskategori de tvåhundra mest citerade monografierna är indexerade, och det är tydligt att referenser till verk inom andra forskningsfält än litteraturvetenskap har ökat mellan perioderna. Främst är det citerandet av samhällsvetenskapliga monografier som ökat under den senare perioden. Flera förklaringar till detta mönster kan urskiljas: ett ökat fokus på teori, framhållandet av kulturvetenskapliga, genusvetenskapliga och postkoloniala perspektiv, samt en generell trend inom vetenskapen där forskningen kopplas till sociala frågor som går utanför en akademisk kontext. Sammanfattningsvis kan konstateras att litteraturvetenskapen blivit alltmer interdisciplinär, mer social engagerad men samtidigt kan inga större förändringar påvisas gällande vilken typ av publikationer som citeras.

Bibliometri på mikronivån: exemplet Walter Benjamin

Den tredje delstudien bygger vidare på resultaten från analysen av högt citerade monografier inom litteraturvetenskapen. Den gör detta genom en detaljerad och djupgående analys av hur Walter Benjamins essäsamling *Illuminations* har citeras över tid och inom olika fält. En sökning i citeringsdatabasen *Web of Science* visar att Benjamins antologi citerats i mer än 4000 publikationer under en period på 30 år. Tydligt är hur antalet citeringar ökat konstant under hela perioden, ett resultat som inte enbart kan förklaras av att antalet tidskrifter och artiklar generellt har ökat. Snarare är det så att essäer-

nas förmåga att vara användbara i många olika sammanhang och ämnen har bidragit till att Benjamins inflytande ökat över tid. Kartorna över de forskningsfält där *Illuminations* citeras bekräftar denna slutsats, då hans verk har haft stort inflytande även i många samhällsvetenskapliga discipliner. Det är till och med så att Benjamins texter citeras – om än sporadiskt – inom naturvetenskapliga forskningsfält.

Illuminations är en antologi bestående av flera inflytelserika essäer som representerar skilda delar av Benjamins tänkande. För att studera de enskilda essäernas inflytande och spridning användes en ny metod i avhandlingen – sidciteringsanalys – vilken gör det möjlighet att följa hur delar av en publikation citeras. Analysen visar att främst två essäer, "Historiefilosofiska teser" samt "Konstverket i reproduktionsåldern" står för Benjamins interdisciplinära inflytande samtidigt som andra texter är mer specifikt litteraturvetenskapliga. Studien av *Illuminations* tyder på att en publikations förmåga att vara användbar och anpassbar för olika kontexter och forskningsfält är en viktig egenskap för att bli högt citerad. Vidare visar studien – om än genom bara ett specifikt exempel – på hur humanistisk forskning har ett inflytande även i samhällsvetenskap och naturvetenskap. Avslutningsvis illustrerar analysen hur en forskare med hjälp av bibliometriska metoder kan följa ett enskilt verks inflytande över tid och inom olika discipliner.

Citeringsmönster inom svensk litteraturvetenskap: en analys av Tidskrift för Litteraturvetenskap och ansökningar till Vetenskapsrådet.

I den avslutande delstudien studeras citeringsmönster inom svensk litteraturvetenskap genom en analys av referenser från två olika källor: *Tidskrift för Litteraturvetenskap* (TFL) 2000–2009 samt ansökningar till Vetenskaprådet (VR) inom kategorin "litteraturvetenskap" 2006–2009. Analysen visar att monografier är den mest citerade publikationsformen, och kapitel i antologier är den näst vanligaste följt av artiklar i tidskrifter. Dessa resultat stämmer väl med tidigare forskning kring citeringsmönster inom litteraturvetenskapen. Litteraturvetare refererar främst till verk skrivna på engelska tätt följt av svenska, men även tyska och franska publikationer är vanligt förekommande. En del skillnader i vad som citeras kunde urskiljas mellan de två källorna, men detta beror huvudsakligen på att TFL främst publicerar artiklar inom svensk litteraturvetenskap samtidigt som ansökningar till VR kommer från forskare inom olika språkområden såsom engelska, tyska och franska.

Den "intellektuella basen" eller med andra ord den "vetenskapliga kanon" inom svensk litteraturvetenskap illustrerades sedan med hjälp av cociteringskartor över högt citerade författare. I dessa kan specialiseringar inriktade på genus, medialitet och postkolonialism urskiljas, och flera av de högt citerade författarna återfinns också i en engelskspråkig kontext. De högt citerade författarna inom svensk litteraturvetenskap bestod av två grupper:

internationella, interdisciplinära klassiker samt en inhemsk kanon av litteraturvetare.

Svensk litteraturvetenskap uppvisar likartade citeringsmönster vad gäller typ av publikation och ålder på de publikationer som påvisats i analyser av anglosaxiskt material. Samtidigt skiljde sig resultaten åt såtillvida att det svenska språket, tillsammans med tyska och franska, fortfarande spelar en viktigt roll i svensk litteraturvetenskap. Slutsaten blir att den lokala och rurala karaktären som många vetenskapsfält inom humaniora har måste beaktas vid val av material och metod för bibliometriska analyser.

Avslutande Reflektioner

Denna studie av litteraturvetenskapen visar att citeringspraktiker inom humaniora kan kopplas till hur forskare söker information och till hur originalitet skapas inom olika forskningsfält. Vidare konstateras att litteraturvetenskapen har blivit alltmer interdisciplinär under de senaste 30 åren. Speciellt är det citeringar till samhällsvetenskaperna som har ökat, och här kan en allmän interdisciplinär trend inom vetenskapen liksom ett ökat fokus på samhällstillvänd forskning vara delförklaringar. En generell trend – ibland kallad "den sociala vändingen" – samt framväxten av interdisciplinära vetenskapsområden som fokuserar på genus och postkoloniala frågor har också bidragit till ett ökat inflytande från samhällssvetenskaperna.

Generellt är citeringsfrekvenserna för enskilda författare låga inom litteraturvetenskapen, och detta beror inte enbart på forskningsfältets "rurala" karaktär, utan också på att forskare inom litteraturvetenskapen är mindre beroende av sina kolleger för att få erkännade. Den relativa frihet som den enskilda forskaren har i att bestämma forskningens inriktning gör att litteraturvetenskapen är "fragmenterad", interdisciplinär och heterogen.

Litteraturvetenskapliga forskare är också mindre specialiserade än sina naturvetenskapliga kollegor, då de mycket väl kan ha bidragit med viktiga forskningsrön inom flera olika områden. Detta, samt generellt låga citeringsfrekvenser, gör det svårt att urskilja forskningsspecialiteter med hjälp av bibliometriska kartor. Sammantaget innebär detta att citeringsfrekvenser och mönster måste förstås utifrån vetenskapsociologiska insikter om hur forskningsfält är organiserade. Bibliometriska studier kan bara förstås i relation till den "disciplinära kultur" som finns inom ett specifikt forskningsfält.

Bibliometriska metoder måste modifieras och anpassas för att vara användbara på forskningsfält inom humaniora. Ett problem är att humanistiska forskare i mindre utsträckning använder sig av tidskrifter för att sprida sin forskning. Istället spelar monografier och antologier en viktig roll, och detta bör beaktas vid val av material för bibliometriska analyser. En metod som användes i delstudie två och tre är att spåra citeringar till monografier genom att följa referenser i artiklar. Den fjärde artikeln analyserar istället referenser

som inte är indexerade i etablerade citeringsdatabaser. Detta innebär en begränsning av materialets storlek, men i gengäld kan slutsatser kring trender och strukturer i svenskspråkig forskning dras, och det framstår som särskilt viktigt att denna typ av material indexeras för att forskningsfält med en "lokal" karaktär ska kunna analyseras.

Ett alternativ till citeringsanalyser av tidskrifter är att studera referenser i forskningsansökningar. Till skillnad från monografier – som annars vore ett naturligt val – följer ansökningar ett bestämt format, de produceras årligen vilket möjliggör jämförelser mellan forskningsområden och över tid. Författandet av ansökningar är dessutom en allt viktigare del av en forskares arbete. Bibliometriska analyser kombinerade med kvalitativa studier kan bidra till en förståelse för hur forskningsansökningar utformas, och vad som gör dem mer eller mindre lyckosamma.

Kunskap om citeringspraktiker och citeringsmönster inom humaniora framstår som speciellt viktigt i en tid då bibliometriska indikatorer allt oftare används för att utvärdera forskningen. Denna studie, liksom många tidigare, fastslår att etablerade kommersiella databaser som *Thomson Reuter Web of Science* och *Elsevier Scopus* inte kan användas för att utvärdera humaniora. Deras nästan obefintliga täckning av icke-engelskspråkig litteratur samt att de nästan enbart indexerar tidskrifter är oöverstigliga hinder för en rättvis och heltäckande utvärdering av humaniora. Istället framstår alternativ som den "norska modellen" – där produktionen av publikationer står i fokus och där även monografier och antologier räknas – som mer lovande. Dock kvarstår frågan hur olika typer av publikationer skall vägas gentemot varandra, och likaså måste en definition av vad som är en "vetenskaplig publikation" fastslås. Detta är komplicerat i ett forskningsfält som litteraturvetenskapen där det anses som viktigt och eftersträvansvärt att delta i en allmän kulturell debatt. Hur humaniora skall värderas och utvärderas är i förlängningen en politisk fråga, men bibliometriker likväl som de berörda forskarna bör framhålla vilka konsekvenser som ett specifikt utvärderingssystem får.

Studiet av citeringar må framstå som en knappologisk verksamhet, men denna studie visar hur citeringar kan ge kunskap om forskningspraktiker, interdisciplinära interaktioner och forskningstrender. Detta gäller även litteraturvetenskapen även om publikationsmönster och citeringsstrukturer här på många sätt skiljer sig från dem som återfinns inom andra, mer utforskade, forskningsfält.

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