III: Contextualization
10: The Vocations of the Novel: Distant-Reading Occupational Change in Nineteenth-Century German Literature

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Within the field of German studies as it has come to being in the United States, narrative prose fiction of the period from 1848 to 1914 has always presented a special disciplinary challenge. Unlike Gustave Flaubert and Émile Zola, Leo Tolstoy and Fyodor Dostoevsky, writers like Gottfried Keller and Berthold Auerbach, Conrad Ferdinand Meyer and Wilhelm Raabe, Adalbert Stifter, and even Theodor Fontane have never become household names in America, and their works are now rarely taught outside of survey courses. Nevertheless, academic critics long ago recognized that narrative prose plays an important role in shaping the collective consciousness of a nation, and over the last thirty years they have developed increasingly sophisticated models to describe the process by which this happens.¹ The early stages of this new period of theoretical sophistication, furthermore, coincided exactly with the “historians’ quarrel” of the 1980s, a frequently acrimonious debate about whether the social and political circumstances in Germany during the late nineteenth century had resulted in a so-called Sonderweg, or “separate path into modernity,” that ultimately led to two world wars and the Holocaust. It only made sense, then, to cast particular scrutiny on the narrative fiction produced during the years separating the failed liberal revolution of 1848 from the catastrophic autumn of 1914, when German students marched into Flanders full of conviction that they were fighting to protect a culturally superior national community from the aggression of Western materialism.

Given this unusual circumstance of a literary corpus that most scholars recognize as historically important (yet which fewer and fewer people actually read), distant-reading approaches acquire an appeal that they do not always possess in other areas of literary study. Critics of distant reading often express discomfort with what Heather Love has called the “turn away from the singularity and richness of individual texts and [the] concomitant refusal of the ethical charisma of the literary translator or
messenger.” In the case of late nineteenth-century German fiction, however, these fears are surely diminished—for in the United States there is hardly anyone left to enjoy this “singularity and richness” to begin with. And there are other reasons why we might welcome the advent of distant reading—the truth is that more than a century of traditional literary scholarship, in which broad hypotheses about social dynamics were justified with close formal analysis of individual texts, has produced less than satisfactory results. The most powerful formalist argument that has been advanced to support the hypothesis of a German Sonderweg stipulates the existence of a distinctively “national” genre, the Bildungsroman. The problem, however, is that scholars continue to be of two minds as to whether such a genre actually exists and, if it does, whether it was influential enough to bring about a fundamental deviation in the collective character of the German people.

Distant reading would thus seem to have found an ideal subject in late nineteenth-century German prose fiction, if it weren’t for a considerable methodological impasse. Matthew L. Jockers, cofounder with Franco Moretti of the Stanford Literary Lab and one of the most prominent figures in the distant reading movement, highlights the nature of this problem. “[Traditional] attempts to generalize about a period or about a genre,” Jockers writes, “are frequently just another sort of micro-analysis, in which multiple ‘cases’ or ‘close-readings’ of individual texts are digested before generalizations about them are drawn in very qualitative ways.” By contrast, distant reading “is a more number-based discipline, one grounded in quantitative analysis not qualitative assessments.” At the heart of Jockers’s definition stands a desire for a solid theoretical basis on which to distinguish between qualitative studies of individual texts and quantitative approaches to the literary system. Taking this desire to its logical conclusion, Jockers even proposes that the very name “distant reading” be replaced with the term “macroanalysis,” which he derives from the field of macroeconomics, a discipline that similarly “employs a number of quantitative benchmarks for assessing, scrutinizing, and even forecasting the macro-economy” while “refusing to involve itself in the specific cases” that are the proper domain of microeconomics.

Jockers’s argument already supplies the basis for its own critique; microeconomics is as quantitative a discipline as macroeconomics. The particular challenge faced by practitioners of distant reading, on the other hand, has always been to explain how quantitative models of the literary system might be brought into productive dialog with qualitative approaches to individual texts. Without such dialog, distant reading is reduced to a mere appendage of the social sciences rather than becoming, as it proclaims itself to be, a revolutionary intervention in the humanities. And this challenge takes on a particularly urgent dimension when dealing with late nineteenth-century German literary historiography, as the previously
mentioned formalist debates about the *Bildungsroman* demonstrate. In its strictest sense, the German *Bildungsroman* is a genre in which the protagonist pursues a path of inner cultivation and spiritual growth, ignoring the opportunities for social success and material enrichment that provide French and English realist novels with their principal subject matter. The arguments that are commonly made about the form’s detrimental influence on German social life, furthermore, derive their internal logic from an assumed homology between literary text and social system. The protagonists of the *Bildungsroman* choose the private sphere over the public, inner complexity over outward engagement, in much the same way that German society in the late nineteenth century rose to Olympian heights in philosophy, the sciences, and the arts, but seemingly developed insufficient defenses against militarism and authoritarianism. Needless to say, Jockers’s insistence that distant reading should not “directly involve itself in the specific cases” stands directly at odds with this assumed homology.

The challenge that the German *Bildungsroman* poses to distant reading, in other words, is that it provides an explanatory model in which the formal particulars of individual texts both influence and are influenced by the shape of the social (and by extension also the literary) system as a whole. Quantifying this feedback loop is difficult, to say the least. Reconstructing distant reading as mere macroanalysis will not do the trick; the recent turn toward “surface readings” within qualitatively oriented literary studies may, on the other hand, hold rich rewards for practitioners of quantitative approaches to the humanities.

Originally conceived as a reaction against Fredric Jameson’s psychoanalytically informed model of literary hermeneutics, in which literary critics attempt to pry meaning from the depths of a text’s “political unconscious,” practitioners of surface reading focus instead on those signs and structural elements that a text surrenders without any resistance. The traditional definition of the German *Bildungsroman*, in which the protagonist’s turn toward interiority is read as both symptom and cause of a larger failure on the part of the political system, provides an ideal illustration of the Jamesonian model of “symptomatic reading” and, needless to say, such a subjective variable as a turn toward interiority is virtually impossible to quantify. By definition, however, the protagonist of the *Bildungsroman* must also arrive at a stable position vis-à-vis society, and given his or her presumed focus on interiority, this position will necessarily be extremely circumscribed. The hero of a novel of formation in the classical sense can never be a factory owner or journalist, for instance. On the other hand, artistic and clerical professions such as “painter” or “pastor” figure prominently both in canonical *Bildungsromane* and in more general deliberations on the genre (witness the often-postulated formal proximity between the *Bildungsroman* and the *Künstlerroman*, or artist’s novel).
Unlike the statement “novel x features a protagonist who retreats from the vicissitudes of social life into a spiritual existence,” the statement “novel x devotes considerable attention to the life of an artist” easily lends itself to surface reading approaches and thus to aggregation and ultimately quantification. For the past year, the Vocations of the Novel project, a collaborative research initiative involving the German Department, the Hesburgh Library, and the Center for Research Computing at the University of Notre Dame, has therefore pursued the question whether a quantitative evaluation of the depiction of professional life in nineteenth-century German fiction can shed new light on the sorts of questions asked by traditional formalist literary historiography. After devoting the first half of this chapter to the question of how the procedures of quantitative analysis relate to the hermeneutic operations pursued in traditional criticism, I will present some of the preliminary findings of the project in the second half.

The Phenomenology of Distant Reading

In pondering how exactly a dialog between formalist historiography and quantitative approaches to humanistic subjects might be achieved, it is useful to return to “Conjectures on World Literature,” the essay in which Moretti coined the term “distant reading.”\(^7\) Somewhat startlingly, none of the terms now firmly associated with this practice—“quantitative analysis,” “abstract model,” “social science,” “graph,” “figure”—appears in the “Conjectures.” Taken by itself, the term “analysis,” which Jockers proposes as an explicit replacement for “reading,” does occur, though in a limited sense to which I will return later on. But what is most striking about Moretti’s essay, at least to a reader looking back at it from a decade’s distance, is that it does not contain a single chart, graph, table, map, or other visual representation of data. This omission is all the more remarkable because Moretti offers an explicitly phenomenological definition of distant reading, displaying a keen interest in the ways in which information manifests on a page. Alluding to the work of Fernand Braudel and Immanuel Wallerstein, who each took up the challenge of how to assimilate critically overwhelming amounts of data compiled in response to complex problems (such as how to write a history of the Mediterranean littoral or map the interdependence of contemporary economies), Moretti proposes that a similar technique might prove useful to scholars hoping to study the global spread of the novel: “if you read Braudel or Wallerstein you immediately see [that] the text which is strictly speaking Wallerstein’s . . . occupies one third of a page, one quarter, maybe half; the rest are quotations.” Consequently, “the study of world literature [distant reading] will somehow have to reproduce this ‘page’” (57).
And indeed it does: “Conjectures on World Literature” is visually dominated by footnotes that in many cases creep almost to the very top of the page. And these footnotes are of a very different kind from the ones a reader might encounter in traditional critical essays—for they are neither purely bibliographic (providing the references that might allow a reader to track down the source of a claim made in the body of the text) nor discursive (offering additional thoughts deemed too tangential for the essay itself). Instead, they contain short analytical statements (almost always compiled from a number of different sources) accompanied by identifying bibliographical information: “Given the history of its formative stage, it is no surprise that the early Russian novel contains a host of conventions popularized in French and British literature.” Moretti here quotes one scholar and immediately corroborates this statement in the same footnote with another passage from a more specialized analysis: “[Ignacy Krasicki’s] The Adventures is read most fruitfully in the context of the West European literature on which it drew heavily for inspiration” (59n10). The actual body of Moretti’s essay, meanwhile, makes no extended reference to Russian novels at all—or to Spanish, Chinese, or Arabic literature, or to any of the other national traditions mentioned in the densely clustered footnotes that all obey the exact same structure that I have described. Instead, Moretti proposes what he calls a general “law of literary evolution: in cultures that belong to the periphery of the literary system, . . . the modern novel first arises not as an autonomous development but as a compromise between a western formal influence and local materials” (58).

In other words, the footnotes in “Conjectures on World Literature” have ceased being mere paratextual elements and instead perform a function that more closely resembles that of block quotations in conventional literary analysis. Like block quotations, they are typographically set off from the body of the text, and like block quotations, they introduce what we might call a “dialogic” quality to the critical essay. In other words, they force a reader to toggle back and forth between two different forms of discourse that require contrasting interpretive approaches. The exact nature of these approaches is different in the two terms of the analogy, of course. In a traditional close reading, the quotation exists as a hermeneutic obstacle that the surrounding text aims to overcome. Quotations impress us through poetic complexity and referential or ideational depth; the critical prose around them, on the other hand, is generally thought to be successful if it translates this complexity and depth into a more immediately accessible form. In Moretti’s “Conjectures,” on the other hand, both the body text and the footnotes serve a critical function; there is no poetic immanence as there is with the block quotation. It is precisely this coexistence of two forms of critical discourse that Moretti regards
as constitutive of distant reading and defines as a “relationship between
analysis and synthesis” (57).

In this quotation, the term “analysis” performs a quite different func-
tion from the one it takes on in Matt Jockers’s later case for a “mac-
roanalysis” of literature, in which analysis is synonymous with number
crunching and pattern tracing. In Moretti’s earlier essay, “analysis” is
merely the first of two steps in a still recognizably humanist version of
distant reading. But if we now move forward five years in time to the
publication of *Graphs, Maps, Trees*, we can observe quite clearly how this
original model of distant reading as a kind of scholarly dialog or collab-
oration was replaced with a different approach that now predominates in
the field. *Graphs, Maps, Trees* marks Moretti’s move to what his subtitle
calls “abstract models for literary history,” but this common rubric dis-
guises the considerable methodological diversity that actually character-
izes the three chapters contained in the study. Here, I shall comment
only on what I regard as a crucial difference between the opening chap-
ter, “Graphs,” and the concluding one, “Trees.”

Once again, a phenomenological approach can be helpful. Compared
to the “Conjectures on World Literature,” which crammed thirty dense
footnotes into the space of only fifteen pages, the “Graphs” chapter fea-
tures noticeably fewer annotations, spreading only seventeen short notes
over almost thirty pages. Instead it offers graphical representations of
data, an unusual move for literary analysis, and one that has profound
effects on the way in which distant reading situates itself as a critical prac-
tice. A closer look at figure 9 of *Graphs, Maps, Trees*, for instance, which
maps what Moretti calls the “life cycles” of forty-four subgenres of the
British novel from 1740 to 1910, reveals that it is constructed as a kind
of abstract graphical corollary to the dense thicket of footnotes that char-
acterizes the earlier essay. Each of the figure’s forty-four horizontal bars
measures not so much the life cycle of a *genre* (like Moretti would have us
believe), as, rather, the scope of a single critic’s *claims* about the starting
and end points of that genre. It would, in theory, be possible to rewrite
the entire content of this figure as a series of natural language propositions,
match these propositions with appropriate bibliographic information, refor-
mat them as footnotes, and thereby arrive at a shape resembling that of the
“Conjectures” essay.

The underlying methodology of “Graphs” and of the “Conjectures”
is thus exactly the same. In both cases, Moretti has sorted through a large
number of traditional works of literary scholarship, extracted from each a
single analytical statement, and then synthesized these into a set of “laws”
of literary evolution, However, the way in which the information is pre-
sented is not similar. In the “Conjectures” essay, the body of the text
and the footnotes stand in constant productive tension with one another.
Both visually and discursively, the reader participates in the process by
which analytical claims are synthesized into literary laws, and these laws in turn remain constantly grounded in actual texts. In the “Graphs” chapter, on the other hand, the figures are treated rather like the block quotations of traditional scholarship. Dropped into the middle of Moretti’s prose, they acquire an immanent character. They become a problem that needs to be deciphered, unfolded, read. Nowhere is this need clearer than in Moretti’s angry riposte to Katie Trumpener, who had criticized his article “Style Inc.” by enjoining him to read “more widely, more deeply, more eclectically, more comparatively.”9 Moretti could have easily rebutted this charge by repeating a defense of distant reading that he had first offered in the “Conjectures on World Literature”—namely, that incessant reading, no matter how deep, eclectic, or comparative, is unlikely to make a big dent in the huge mass of books that literary scholars have come to call “the great unread.”10 Instead, he turned this criticism back upon Trumpener by proclaiming himself to be the more avid and eclectic reader: “Trumpener does not look at graphs: from her article, one could never tell that ‘Style, Inc.’ has one per page. We should all ‘read more,’ she writes at the end of her article: ‘more widely, more deeply.’ Yes.”11

The concluding “Trees” chapter of Moretti’s study takes this methodological shift to its logical conclusion. The two chapters diverge from one another not so much because they employ different modeling systems, but rather because in “Trees,” Moretti abandons the approach of relying on the previous work of other scholars. Analysis and synthesis become successive steps in a single critical project. In figures 30 and 31 of Graphs, Maps, Trees, for instance, Moretti shows the results of his analysis of roughly one hundred works of late-Victorian detective fiction, which he has scanned for the presence of certain types of literary clues. These findings have subsequently been synthesized and arranged in the form of two tree diagrams—a decision tree in the case of figure 30 and a morphological tree in the case of figure 31. The originally dialogic project of distant reading has thereby been transformed into a monologic enterprise, in which a single critic chooses a corpus, converts the complex hermeneutic questions that a traditional close reader might have asked into a set of simpler queries (thus, “are there clues present?” and “are they of a visible nature?” rather than the more holistic “what kind of clues are present in Victorian detective fiction?”), and ultimately models the outcome in graphic form.

There can be no doubt that in the seven years since the publication of Graphs, Maps, Trees, the approach to distant reading pursued in the final chapter of that work has entirely displaced the one advocated in the “Conjectures on World Literature” and, to a lesser extent, also in “Graphs.” The distant-reading projects of today concern themselves with word frequencies and distributions, with computer-aided syntax analysis and topological modeling. Nobody who has been paying attention to
recent developments in the field would still think to ask whether a massive number of critical works, read side by side with one another, might allow one to formulate general laws of literary evolution. The reasons for this triumphant victory are at least twofold.

First, the development of contemporary distant reading constitutes a direct reaction to a fundamental change in what Friedrich Kittler would have called the “discourse networks” (*Aufschreibesysteme*), structuring the humanities in the early twenty-first century.\(^\text{12}\) In a fortunate historical coincidence, the same year that saw the publication of *Graphs, Maps, Trees* also marked the birth of the service we now know as Google Books as well as the release of the Google Earth application, the breakout hit in an ever-expanding series of new tools that give users without any knowledge of mathematics or programming languages the ability to model complex data sets with remarkable ease. For centuries, humanistic scholarship had essentially been confined to a single kind of data retrieval (that of natural language propositions stored in complexly structured texts) and a single kind of data transmission (through print media such as books, anthologies, and journals). Google Books and Google Earth, as well as a host of similar programs and services, changed all this, instantly allowing for not only new forms of access to old data but also new ways of producing and publishing results. This scholarly revolution is now commonly known as the “digital humanities,” and it is safe to say that distant reading in its current iteration provides the new field with its single most important method.\(^\text{13}\)

The second reason for the recent triumph of the “surface” model of distant reading is that it simply works better, for reasons that are not terribly difficult to understand. As I indicated previously, Moretti performs a sleight of hand in the “Graphs” chapter of *Graphs, Maps, Trees*, when he passes off his quantitative summaries of forty-four studies of individual genres as empirical measurements of those genres themselves. Thus figure 9 of that work features a horizontal bar purporting to track the rise and fall of the gothic novel from the 1790s to the 1820s, when in reality it only shows that Peter Garside, in his article “The English Novel in the Romantic Era” claimed these dates as cornerstones. There are two separate difficulties here. First, the traditional criticism on which Moretti relies was not written with an eye toward eventual aggregation and instead relies on the protocols of what anthropologists would call “thick description.” Garside’s essay, for instance, was presumably never intended to provide a straightforward account of the gothic novel but rather attempted to relate the genre to the larger mood and ideology of the Romantic era. Second, literary forms, like the genres that Moretti purports to map, are not natural categories but rather scholarly constructs that are usually contested even within the narrow institutional context in which they were originally invented. Indeed, Moretti seems to have paid
no attention to the question of whether “genre” even meant the same thing in 1907 (the publication date of the earliest critical source evaluated in order to create his graph) as it does in the early twenty-first century. Nor has he asked himself whether his findings perhaps illuminate patterns in the secondary sources rather than in the primary literary system that his graph ostensibly illuminates. For instance, one of Moretti’s most important findings is that the vast majority of genres appear to have life cycles of roughly thirty years. Yet there would seem to be strong institutional incentives for scholars to produce monographs that cover roughly this length, since a thirty year span is broad enough to satisfy credentialing bodies and hiring institutions yet narrow enough to be mastered in six to eight years of graduate study.\footnote

In short, traditional close readings of literary texts pose considerable obstacles to the quantifying, aggregating and mapping operations that are the hallmarks of Moretti’s “abstract models for literary study.” It is little wonder, then, that distant readers have by and large given up on the effort to rely on previous scholarly work and have instead sought to establish a direct relationship with the primary literature, often relying on computer technologies to aid in their efforts. As a result, however, some of the most vexing problems of formalist literary historiography have fallen by the wayside, because they do not seem to lend themselves to easy quantification. This only returns us to the question with which we began: is it possible to construct a new paradigm for distant reading that would confine itself to the surface dimensions of literary texts and nevertheless engage with the kinds of formal issues that could previously only be uncovered through hermeneutic approaches?

The Vocations of the Novel

Since Moretti’s pioneering attempts at distant reading were explicitly concerned with the question of genre, it comes as no surprise to learn that a number of recent critics have tried to develop computational approaches to genre analysis based not on “deep” interpretive decisions but on attributes that characterize the surface of a text, such as word frequencies and distribution. Thus texts in which the words “ghost,” “ruin,” “abbey,” and “terror” occur with elevated frequency might with a great measure of confidence be classified as “gothic,” while others in which the words “heart,” “letter,” and “sensation” are preponderant might be classified as “romances.” A simpler approach, however, can be found in a pioneering project completed at the University of Innsbruck during the late 1990s. The key insight of the Projekt Historischer Roman was that at least one important subgenre of nineteenth-century prose fiction, the historical novel, can adequately and reliably be defined through the answer to a single objective interpretive question—namely, “does the action of the novel
antecede the birth of its author”?

It would be difficult to delegate this question to a computer program, but answering it also does not require the kind of hermeneutic decisions that have previously been the starting point of genre analysis. A “surface reading” of the text, combined with some research in biographical dictionaries, is entirely sufficient.

The benefit of this particular approach is that it rekindles the dialog between quantitative approaches to literature and other forms of interpretive engagement that was lost in the aftermath of *Graphs, Maps, Trees*. For as soon as one studies some of the 6,700 entries in the Projekt Historischer Roman database, one realizes that in the vast majority of cases, the project investigators did not need to conduct the prerequisite surface readings themselves. They could instead rely on metadata accumulated by bibliographers, catalogers, and antiquarians—by professionals, in other words, who perfected the art of surface reading decades before hermeneutic literary studies invented a name for it.

Katie Trumpener, in her critique of Moretti’s novel titles project, writes, “[Style Inc.] both extols and draws heavily on the brilliant statistical work of bibliographers and book historians, [yet Moretti’s] tendency here is to use statistical ‘findings’ to ground his own interpretive readings—and to hypothesize about publishing practice without sufficient recourse to book-historical evidence. Book history could potentially supply a middle ground between numbers and close reading.” To this insight, we can add that it is not merely book history that could potentially serve as a middle ground between micro and macro approaches but also bibliography itself—if, that is, we come to acknowledge bibliography as more than a mere act of record keeping and come to see it as a valuable interpretive praxis in its own right. Admittedly, the information that we find in bibliographies and library catalogs will strike most of us as rather impoverished examples of interpretive activity, but they are examples of such activity nonetheless, and they therefore allow us to build new bridges over what threatens to become an ever-widening chasm between close and distant reading, the interpretation of individual texts, and the analysis of entire literary systems.

Can an approach like the one pioneered by the Projekt Historischer Roman shed new light on the formal development of German prose fiction in the late nineteenth century? The Vocations of the Novel project sets out to answer this question. The project rationale proceeds from the observation that formalist arguments for or against the notion of a *Sonderweg* in literary history can often be collapsed into observations about the professions that receive extended narrative treatment in German novels. For instance, arguments about the quintessential “inwardness” of German protagonists often stress the importance that artistic or spiritual professions (like that of the painter in Gottfried Keller’s *Green Henry* or that of the pastor in Wilhelm Raabe’s *The Hunger-Pastor*) play
in contrast to the French or British novel, where more integrative themes predominate. (Here we need to think only of Honoré de Balzac’s newspaper offices, Charles Dickens’ law courts, or Émile Zola’s factories). On the other hand, scholars aiming to stress literary continuities between Germany and its neighboring countries have drawn attention to the supposed preponderance of scientific and technical milieux in German novels of the late nineteenth century, with at least one critic interpreting the inward focus prevalent in many canonical authors as a defensive reaction formation against a literary system that was modernizing along with its social environment.18

Responding to this opportunity to complement traditional formalist genre history, centered on concepts such as the Künstlerroman (artist’s novel) or Industrieroman (industrial novel), with related categories drawn entirely from surface readings (e.g., “novels about artists,” or “novels about factory workers”), the Vocations of the Novel project encompasses a digital database of roughly 13,000 works of German-language prose fiction published between 1750 and 1950, in which each entry is tagged with vocational metadata identifying occupations that receive extended narrative treatment. For the period from 1848 to 1914, the database currently contains 3,551 total entries, of which 679 are short stories, while 1,506 can be positively identified as novels (either because of available supplementary metadata or because their subtitle includes the word Roman). The remaining 1,366 entries refer to book-length works of prose fiction that either have no identifying designation in the available records or carry subtitles such as Novelle (novella), Erzählung (story), or Erinnerung (memoir). Since genre designations were extremely fluid in the nineteenth century, the vast majority of these entries undoubtedly consists of works that we would nowadays categorize as novels, and for the time being, the project treats them as such.19 Further progress on the project will of course also bring further bibliographic refinement.

The resulting archive of 2,872 novel titles for the period between the 1848 revolution and World War I is small compared to the actual number of novels published during this period, but there is nevertheless reason to believe that it forms a representative sample of the larger literary system. (The exact composition of the Vocations of the Novel database, along with a discussion of how the data correlates to the publishing landscape of the later nineteenth century, is presented in an appendix to this chapter.) With these caveats in mind, we can search for trends and patterns among the novels represented in the Vocations database. In order to simplify this process, it is advisable not to map professions such as “mason” or “carpenter” individually (though this would certainly be possible) but rather to aggregate them into thematic clusters. Figure 10.1 shows the proportional distribution of fifteen occupational clusters, which together compose about 98 percent of all entries in the database, for the period
from 1848 to 1914: agricultural professions, artisanal professions, the arts, clergy, education, employees, government, health, industrial professions, journalism and media, mercantile professions, nautical professions, science, technical professions, and transportation. In each case, the width of the shaded band correlates with the proportional representation of that cluster in any given year.

Unsurprisingly, the observed distribution of fictional vocations bears no relationship to actual professional life in Germany during the late nineteenth century. For the first half of the period on display, artists and members of the clergy provide the German novel with its two most important subject matters, although the importance of these two vocations begins to diminish after about 1885. Figure 10.1 is highly illuminating in its own right, showing that novels with industrial subjects were never particularly popular in German literature, rising from initially about 3 percent of all works in the early 1850s to about 5.5 percent in 1890, toward the end of the second industrial revolution. There they more or less stagnated. Novels with technical and scientific subjects, meanwhile, steadily increased in frequency after 1871 but never made it past comparably modest representational shares (roughly 2.5 and 3.5 percent respectively) in the years before World War I. The popularity of these themes skyrocketed only during the Weimar years. By contrast, novels with mercantile subjects (actively promoted by Julian Schmidt and Gustav Freytag, two important theorists of programmatic literary realism in Germany) held more or less steady at around 8 percent, though with a notable dip to about 5 percent from the late 1860s to the early 1880s, a roughly twenty-year period marked by the wars of unification and the massive stock market crash that

Figure 10.1. Fifteen large vocational clusters (1848–1914), smoothing = 3
brought an end to the Gründerzeit. Agricultural professions, finally, initially declined in importance, but then began an inexorable climb to a staggering 18 percent around the turn of the century, after which they rapidly sank to a still impressive 14 percent of all new titles. Clearly, the market preferred escapist fare about farmers and huntsmen to novels set in the factory slums and rail yards that increasingly dominated both German social life and the German countryside. This insight, in turn, illuminates the ideological ramifications of Arno J. Mayer’s thesis regarding the “persistence of the old regime” in nineteenth-century Europe, though it does not in itself provide any evidence of a German Sonderweg. For this evidence, we would first need to perform a comparative evaluation with British or French literary production, in which agricultural novels surely also competed with industrial fiction.

**Modeling Generic Transformations through Occupational Change**

The kind of bird’s-eye-view statistical analysis of the literary field that was briefly modeled in the previous section already demonstrates the value that surface reading approaches possess for literary historiography. By allowing us to survey the “great unread” according to dimensions that are unavailable to purely quantitative macroanalysis, surface readings help us cut through the penumbra of assumptions and commonplaces that cloud our everyday judgments as literary critics. Every scholar of late nineteenth-century literature works with a tacit preconception of what the literature of that period “was really like,” even though he or she is unlikely to have read more than a few dozen (and often far fewer) novel-length works written during those decades. Macroanalytical approaches hold out the promise of putting these preconceptions to an objective test, but more often than not merely end up reifying them, because parameters such as word frequencies and title lengths are so difficult to integrate with the traditional claims advanced by literary critics. By contrast, the surface readings aggregated in the Vocations of the Novel database proceed from the same basic question as traditional literary hermeneutics—namely, “what is this novel about?” The only thing that is different is the depth and complexity of what counts as a satisfactory answer.

As the case of the Bildungsroman with which I began this chapter demonstrates, however, genre is not a concept that is easily subject to a scalable notion of interpretive depth. If genres were mere taxonomic constructs, then there would be no question that the simpler generic models employed by surface readings can stand in as useful substitutes for the more complex constructions of traditional criticism when dealing with thousands upon thousands of texts. But literary critics believe that certain genres have a kind of performative social power; Bildung, for instance,
is a pedagogic dynamic that is transported exclusively by a certain kind of novel, the *Bildungsroman*. The question whether surface reading approaches can help inform debates about these more elusive qualities of literary texts deserves closer scrutiny through a series of increasingly complex case studies, to which I will devote the remainder of this chapter.

**First Case Study: The Schulroman**

At first glance, figure 10.1 may not look particularly different from any of the numerous other exercises in quantitative analysis that are the result of recent efforts to implement distant reading practices. It is worth stressing, however, that it does not aggregate quantitative data about individual texts (publication years, page numbers, title length, etc.) but rather the outcomes of almost three thousand instances of surface readings performed by bibliographers. The determination that "novel x pays sustained attention to agricultural labor" is a fundamentally different judgment from the determination that "novel x is 500 pages long." Precisely the interpretive nature of the underlying dataset makes the Vocations of the Novel database uniquely suited to mediate between formalist and quantitative approaches to literary history.

By way of illustration, consider Gregory Castle’s thesis, arrived at through a series of close readings of canonical texts, that the conflict between developing individuals and normative state institutions became a favorite subject matter of the novel during the final decades leading up to World War I.21 This claim is difficult to convert into a quantifiable hypothesis but easy to assimilate to formalist literary history: it amounts to the prediction that the *Schulroman*, or “school novel,” will rise in prominence during the period from 1880 to 1914. Since the contours of the *Schulroman* genre can readily be traced through a series of surface readings (any novel that falls under the rubric will, by definition, focus on institutionalized education), the Vocations of the Novel project can easily be used to evaluate Castle’s thesis quantitatively. Figure 10.2 shows the development of novels focusing on educational professions from 1848 to 1948—a span sufficiently long to connect the development of the educational novel prior to World War I not only to its past but also to its future.

The relatively small number of educational novels in the database results in fairly pronounced statistical noise, and the extreme contrast between valleys and peaks in this graph should not be overinterpreted. Nevertheless, it is clear that novels with educational subjects, which represented around 3 percent of total novelistic production during the period between 1848 and 1871, greatly increased in quantity almost immediately after the founding of the Second Reich and commanded a respectable production share of about 6 percent right up to the beginning of the twentieth century, after which they began a steady process of decline and
eventually stabilized at around 2 percent of total novelistic production by the end of the World War II. These numbers corroborate Castle’s thesis and document that at least a subset of formalist claims about literature can be quantitatively verified using the generic approximations provided by surface-reading approaches.

**Second Case Study: The Künstlerroman**

Having thus demonstrated the ways in which quantitative analysis can be used to give an additional edge to traditional formalist literary history, we can return to the German Sonderweg and the question of whether the Bildungsroman provides us with a literary symptom of an underlying national malady. The Bildungsroman does not lend itself to easy circumscription through surface reading techniques in the way that the Schulroman does, but as I pointed out previously, a close generic relative, the Künstlerroman, does. Figure 10.3 shows the proportional distribution of all novels related to artistic professions in the database. For present purposes, the period between 1848 and 1914 is of primary interest, although I have again included an entire century’s worth of data to provide some contextualizing information.

Since there are roughly three times as many novels dedicated to artistic subjects in the database as there are educational novels, variations between peaks and valleys in this graph have a correspondingly higher
significance. Clearly novels featuring artists were tremendously common, constituting an average of 30 percent of all book-length prose works produced during the 1850s, the period of the first full flowering of literary realism. With the founding of the Second Reich, however, we notice a gradual decline in frequency that becomes especially pronounced with the beginning of the Wilhelmine period in 1888, when the cluster settles at around 12 percent and holds steady for the rest of the period for which we have data. Artistic subjects were still decidedly more frequent than industrial, administrative, or mercantile subjects, which we might more readily associate with literary realism. But it was no longer a runaway victory, as it was during the 1850s.

The data suggest that as German national culture was sliding deeper and deeper into unquestioning obedience to militarism and authoritarianism, the *Künstlerroman* actually became less popular than it had been at an earlier time in the nineteenth century. We can add further detail to this observation by taking a closer look at the most pronounced peaks in this graph, which, far from documenting mere statistical noise, actually seem to line up rather well with transformative events in German culture: the Austro-Prussian War of 1866, the Franco-Prussian War of 1871, World War I from 1914 to 1918, and World War II from 1939 to 1945. (In each of these cases, the peak occurs a few years after the event, an effect both of the smoothing and of the amount of time it takes to
produce a novel.) Slightly smaller bumps can also be detected after the period of hyperinflation in 1922 and 1923, as well as during the global economic crises of the early 1930s.

What this correlation suggests is that the *Künstlerroman*, far from being a “national” genre rooted in an essentially unchanging collective German nature (as the *Sonderweg* hypothesis would suggest) or from being a literary form with a circumscribed life cycle linked to generational dynamics (as Moretti argues in *Graphs, Maps, Trees*), may in large part have been a simple compensatory reaction to the 1848 revolution. Over the subsequent decades, novels in which characters withdraw from social pressures into the essentially spiritual sphere of the arts rapidly became less popular as Germany began to modernize, industrialize, and militarize on a very large scale. But they surged in frequency whenever the general trajectory of modernization was disrupted by economic, political, or military events. Instead of the novels themselves determining a national character, in other words, their frequency seems to have been entirely at the mercy of larger political and social developments.

### Third Case Study: The Clerical Novel

Finally, what about novels devoted to clerical professions, which I earlier identified as another possible yardstick for novels featuring a retreat into interiority? Unfortunately, the data here is less conclusive, as figure 10.4 documents.

At first glance, this figure suggests the clear and basically unvarying dominance of clerical subjects in the novel throughout the nineteenth century. The frequency of such subjects recedes only gradually in the first decade of the twentieth century, until the World War I deals the topic a severe blow. A brief resurgence during the first half of the Weimar Republic is then followed by further decline until clerical novels essentially become a niche genre during the Third Reich.

Closer engagement with the data, however, reveals several complicating factors. For one thing, a disproportionately large number of entries in this cluster are drawn from the Projekt Historischer Roman and can thus be identified as historical novels. This fact reminds us that while the fortunes of clerical subjects almost certainly have some degree of statistical correlation with those of the *Bildungsroman* (a genre that, after all, has deep philosophical roots in the Pietist tradition), these links are going to be much stronger in the case of the historical and the gothic novel—both of which are undisputedly transnational traditions. The data are further complicated by the fact that religious identity was heavily contested in Germany during the second half of the nineteenth century. For example, the elongated dip in the 1870s, which coincides exactly with the period of Bismarck’s struggle against Catholicism, the *Kulturkampf*, turns out...
to have been caused entirely by declining publication figures for novels with Catholic subjects. Novels on Protestant subjects, on the other hand, actually increased in frequency during this decade. Once again, in other words, the quantitative data suggest that the German novel in the nineteenth century directly and immediately responded to social and political forces, rather than attempting to deflect politics with the help of formal and thematic conventions. Future historians of the German novel will thus do well to pay closer attention to the ways in which transformative social events such as the wars of unification or the Kulturkampf influenced what previously seemed to be relatively static literary forms.

**Conclusion**

The Vocations of the Novel project attempts to enrich the current tendency toward “macroanalysis” of literature by seeking to reengage quantitative approaches with interpretive readings of individual texts. Since the failure of Moretti’s attempt to provide a comprehensive model of genre evolution in the “Graphs” chapter of *Graphs, Maps, Trees* demonstrates the difficulty of assimilating traditional, hermeneutically oriented interpretations of novels into a quantitative methodology, the Vocations project instead aggregates the “surface readings” of book historians, bibliographers, and antiquarians. German prose fiction of the period from 1848 to 1914 provides the project with an especially illuminating subject
matter, since it is here that formalist claims about the interrelationship between the form of individual novels and those of the social system have been particularly pronounced.

The initial results of the project show that quantitative methods can indeed be used to validate specific claims about the evolution of literary genres that were initially advanced through formalist procedures. They also demonstrate that formalist literary history based on a small canonical corpus tends to reach overly reductive conclusions. In the case of the *Bildungsroman*, for instance, quantitative modeling suggests that both the traditional position, according to which German literature pursued a separate path from that of the British and French national traditions, and more recent revisionist attempts to see German prose fiction as essentially similar to that of other European nations, may untenably simplify matters.

The large number of novels devoted to artistic and clerical subjects in the late nineteenth century suggests that interiority and social withdrawal were indeed prominent themes within German fiction. But this dynamic was more fluid than has previously been assumed and also appears clearly correlated to specific historical events. Emphasis on this final fact may indeed prove to be the single most valuable contribution of the project, since it reminds us that the “literary system” so beloved of macroanalysis is not an independent system at all but rather the product of social dynamics that will, in the final analysis, always have to be studied *sui generis*.
Appendix

The Vocations of the Novel digital database is composed of roughly thirteen thousand works of German-language prose fiction published between 1750 and 1950, in which each entry is tagged with vocational metadata identifying occupations that receive extended narrative treatment.22 At the time at which this chapter is being written, roughly six thousand of the entries can positively be identified as novels, either through supplementary generic metadata or because their title or subtitle includes the word Roman. Another two thousand entries can be identified as works of short fiction, usually because they were first published in a collected volume. The classification strategies used have been conservative, as the large number of works still awaiting identification show. Nevertheless, the overwhelming number of unclassified entries is expected to refer to novels. The vocational metadata currently derive from three different sources: Franz Anselm Schmitt’s comprehensive bibliography Beruf und Arbeit in deutscher Erzählung, the online catalog of the collection Kaufmann und Contor in der deutschsprachigen Prosa seit 1750 at the Staats- und Universitätsbibliothek Bremen, and the digital database Projekt Historischer Roman at the Institut für Germanistik, Universität Innsbruck.23

For purposes of quantitative analysis, the period between 1848 and 1914 represents a fairly unified chapter in the history of German publishing, bookended by political and military upheavals that caused major commercial depressions but also characterized by continuous and eventually explosive growth. Figure 10.5 shows the total number of belletristic works published in Germany during the years from 1851 to 1914.

The graph is fairly self-explanatory, showing an essentially stagnant book market during the years between 1848 and 1871, noticeable dips in production during the Austro-Prussian War of 1866 and the Franco-Prussian War of 1870, a modest overall rise during the first two decades of the Empire, and a much more rapid acceleration after 1888 until the outbreak of World War I in August 1914 brought about a sudden reversal.

Unfortunately, it is impossible to derive an accurate count of the total number of novels published during the same period from the available data. For one thing, the publication statistics for the nineteenth century do not distinguish between new publications and reprints; for another, they do not adequately differentiate between novels, story collections, poetry, and dramatic works. During the period from 1918 to 1960, around 20 to 25 percent of all books printed during peace time were reprints, although this number increased dramatically during times of strife and civil unrest (to as much as 40 percent during World War II).24 But without further detailed archival study, there is no way of telling whether these figures also hold for the nineteenth century. Similarly, a
recent statistical study shows that novels composed just under 50 percent of the total number of bellettist works published during the mid-1890s, but further work is needed to establish whether this number holds true for a larger time frame or whether the novel did not, as seems more likely, steadily conquer ground once held by poetry, short-story collections, and plays. However, even if we conservatively estimate that only 75 percent of the books published between 1848 and 1914 were first editions and that novels were responsible for just 50 percent of all total bellettist production, we are still left with the immense sum of sixty thousand novels. The actual number is almost certainly higher. By contrast, the Vocations of the Novel database currently contains 3,551 total entries for the same date range.

Despite this relatively small number, there is reason to believe that the works collected in the database are representative of novel production as a whole. It is important in this context to differentiate between diachronic and synchronic selection biases. Put differently, the database could yield misleading results either because the temporal distribution of the novels that it encompasses differs from the novelistic field as a whole or because certain professions are over- or underrepresented in the bibliographic
sources from which the entries are drawn. As figure 10.6 documents, a
graph plotting the number of entries by year closely resembles that of the
total number of published works for the years prior to 1900. In the early
twentieth century, on the other hand, the number of database entries
grows more rapidly than the total number of published books, though
not necessarily the total number of published novels (since novels may
well have begun to conquer an increasing share of the market previously
held by poems, story collections, and plays).

The question of whether individual professions are over- or underrep-
resented in the database is more difficult to answer. Certainly, the fact that
one of the sources consulted (the collection *Kaufmann und Contor*) has a
definite, though not exclusive, focus on mercantile and financial professions
might have led to an overrepresentation of these particular occupations.
Similarly, the fact that another source consists exclusively of historical novels
could conceivably lead to an overemphasis of agrarian or clerical professions.
However, the large degree of overlap between these two more specialized
sources and the comprehensive bibliography *Beruf und Arbeit in deutscher
Erzählung* (since roughly 80 percent of entries in the smaller works can also
be found in the larger one) suggests that this bias should not be crippling.

At the present moment, the Vocations of the Novel interface is acces-
sible only to members of the research team at the University of Notre
Dame. Future stages of the project will include opening it up to the
general public through a designated web server as well as further bib-
liographic refinement and expansion, ideally through a web crawler that
could mine online library catalogs for vocational metadata.
Notes

1 The work that towers over all others in this regard is, of course, Benedict Anderson’s *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (London: Verso, 1983).


5 Jockers, “On Distant Reading and Macroanalysis.”


7 See Franco Moretti, “Conjectures on World Literature,” *New Left Review* 1 (January–February 2000): 54–68. Hereafter, references to this article will be cited parenthetically in the text.


14 On the distorting effects that disciplinary institutions introduce into literary history, see Eric Hayot, “Against Periodization; or, on Institutional Time,” *New Literary History* 42, no. 4 (Autumn 2011): 739–56.

It is important to stress in this context that the database underlying the Projekt Historischer Roman does not directly draw on genre-related metadata (such as the Library of Congress subject classifications) of any kind. To do so would mean to replace the kind of hermeneutic reading carried out by literary historians, who tend to problematize the question of genre in their own research, with an inferior kind carried out by catalogers, who need to repress such nuance in order to make their datasets efficiently searchable. Instead, the project draws only on genuine “surface” categories of the novels, comparing the temporal location of their plots with the birth dates of their authors.

Trumpener, “Paratext and Genre System,” 163.

Harro Segeberg, *Literatur im technischen Zeitalter: Von der Frühezeit der deutschen Aufklärung bis zum Beginn des Ersten Weltkriegs* (Darmstadt: Wissenschaftliche Buchgesellschaft, 2001), 145. Hans Ulrich Seeber draws an explicit equation between a separate path to modernity and the depiction of technical professions in literature when he argues, “the notion of a *Sonderweg* and the oft-recited thesis of German literature’s general developmental retardation in regards [sic] to technology are now less plausible than ever” (*Scientia Poetica* 3 [1999]: 218).

For a statistical examination of German novel titles in the nineteenth century that demonstrates the gradual victory of *Roman* over *Novelle* and other rubrics, see Kurt Habitzel and Günther Mühlberger, “Gewinner und Verlierer: Der historische Roman und sein Beitrag zum Literatursystem der Restaurationszeit (1815–1848/49),” *Internationales Archiv für Sozialgeschichte der deutschen Literatur* 21, no. 1 (1996): 91–123, which is itself an outgrowth of the Projekt Historischer Roman.


For the creation of this database as well as the interface that supports it, I would like to express my gratitude to Kristina Furse, Samuel Njoroge, Dilkushi Pitts, and Christopher Sweet at the Center for Research Computing; Robert Kusmer at the Hesburgh Library; and to my undergraduate research assistants Codi Coslet, Ian Duncan, and Marcus Liddell.

Franz Anselm Schmitt, *Beruf und Arbeit in deutscher Erzählung: Ein literarisches Lexikon* (Stuttgart: Hieremann, 1952). See also “Kaufmann und Contor in der deutschsprachigen Prosa seit 1750,” accessed October 28, 2013, http://www2.suub.uni-bremen.de/benutzung/ausstellungen/kaufmann2006/index.html, and “Projekt Historischer Roman,” accessed October 28, 2013, http://www.uibk.ac.at/germanistik/histrom. Needless to say, each of these bibliographical works has its own methodological biases. Schmitt’s lexicon was created shortly after World War II and exemplifies the flight away from politics that characterized German scholarship of the period. It does not, for instance, contain entries on soldiers or university students. The collection *Kaufmann und Contor* focuses on mercantile and financial professions, although it encompasses a surprisingly wide variety of other occupations as well. The Projekt Historischer Roman, as its title indicates, comprises only historical novels.
