

Novel Devotions: Conversional Reading, Computational Modeling, and the Modern Novel

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In the end, we do indeed always have to turn
around.

—Theodor Fontane, *Irrungen, Wirrungen*

I

WHAT WOULD IT MEAN FOR A NOVEL to turn us as we turn its pages? How are we not simply moved, but transformed—turned *around*—through the novel's combination of gestural and affective structures? How might we think, in other words, about the correspondences between the novel's technics and its tropes in its ability to assume meaning for us as a genre on a profound personal level?

The history of the novel, as Hans Blumenberg once remarked, has most often been read as an extended referendum on the Platonic notion that the poets lie.¹ Major studies of the novel, from Auerbach's mimesis to Barthes's reality effect to Jameson's political unconscious and beyond, reliably begin with the novel's representation of an estranged reality as its primary generic identity.² Novels are where we go to experience our alienation and thus our appropriate political or critical orientation to a social world. More recent work, on the other hand, has begun to emphasize our affective relationship to reading novels.³ As Rita Felski writes, "We explicate the puzzle of our attachments by invoking veiled determinations and covert social interests, while paying scant attention to the ways in which texts may solicit our affections, court our emotions, and feed our obsessions."⁴ Novels are very effective vehicles for generating personal attachments rather than just giving voice to social estrangements. From this point of view, the history of the novel should not simply be seen as an engagement with the problem of givenness, of *das Gegebene*—what Lukács called "the immediate and unshatterable givenness of the world."⁵ Instead, it entails understanding the history of the novel's performance of what we could call its devotionality or

Ergebenheit—the means through which we give ourselves over *to it*. The novel becomes, in this sense, the genre where we go to experience a sense of profound internal difference—not an estrangement from the world (a primordial *Heimweh*, in Lukács's terms), but an experience of a completed identification with a world. What would such a history of the novel's conversional force look like?

Over the past two years I have been exploring the development of computational models to understand the novel's relationship to the narration of profound change as a means of generating personal attachment, the ways in which novels perform and motivate our investment in them. Is there something intrinsic, I have been asking myself along with others in the field, to the way novels ask us to commit to them? If so, does this have something to do with larger linguistic currents within them—not just a single line, passage, or character, or even something like “style”—but the way a greater shift of language over the course of the novel can be generative of affective states such as allegiance, belief, or conviction? Can linguistic change, in other words, serve as an efficacious vehicle of readerly devotion?

Thinking about a text's transformative force is of course deeply Augustinian in its lineages. Augustine's *Confessions* has served as a foundational document in establishing a conjunction between narrative technique, the technology of the codex, and personal conversion—the way form and medium interact to produce a profoundly new sense of self.⁶ Unlike the more elementary serial structure of narrative—in which, according to theorists such as Genette and Todorov, the purpose of narration is to enact the causal concatenation of events (first this happens, then this happens)⁷—conversion introduces a structure in which narration is marked by a strong sense of before and after, by a singular sense of temporal difference.⁸ According to an Augustinian idea of conversion, life is no longer understood as a finite string of events, one thing after another, but instead as a totality marked by a singular turn that is at once a turning away (from some former self) as well as a turning back (to one's true self). Rupture is not only a vehicle of return, the con- of *conversio*, but also a vehicle of belief and commitment, a turning toward. The strong binary form of the text, the sense of a before and after, is framed by Augustine as a way of generating a devotional stance in both the protagonist and reader.

My work on these questions was initially conceived as an inquiry into the impact of Augustine on modern autobiography after Rousseau. What remained, I was interested in asking, of this confessional archetype within an emerging commercial environment of life writing? While literary scholars have been debating Augustine's legacy on modern autobiography since the appearance of Rousseau's *Confessions*, we

have never tested this question across a broader population of works beyond a handful of the usual examples, nor have we ever explored the idea of influence at a greater degree of linguistic scale than a few well-chosen examples of textual affinity, nor, it should be added, have we ever explored where *else* Augustinian conversion might live on. And yet, to my surprise, the model I was building revealed that Augustinian conversion lived on most strongly not in the genre of autobiography to which it belonged at a more general nominal level, but instead in the genre of the novel. The novel, it seems, is the genre to which readers have been turning since the nineteenth century in order to experience this continued performance of a “turning around”—the stark contrasts of a linguistic before and after coupled with a strong sense of commitment, of throwing oneself together with something (*committo*).

Such an idea stands in stark contrast to received notions that the novel functions as a medium of regularization, mediocrity, and the quotidian—as a mirror, in Franco Moretti’s words, of “the regularity of bourgeois life.”⁹ Instead, the novel—and a particular subset within the genre—emerges over the nineteenth century as a deeply irregular form, marked by significant degrees of binariness and linguistic change. While Moretti speaks of the “logic of rationalization pervad[ing] the very rhythm of the novel” (B 82), my model suggests a very different rhythm at work. Far from accustoming readers to the drudgery and regularity of modern life—Weberian rationalization at the page level—the nineteenth-century novel appears far more invested in making available experiences of profound linguistic change upon which a sense of personal commitment can be based. That such shifts coincide with the time frame in which the novel came to be institutionalized as both the voice of the nation and a profound pedagogical tool makes sense in this context. Rather than see its critical force to estrange us from the givenness of the world or its ability to help us come to terms with a hyper-rationalized modernity as its principal source of enduring relevance, we should see the novel’s affective dimensions as that which makes it such an effective institutional medium, what allows it to be marshalled so successfully within both patriotic and pedagogical settings.

This project is thus concerned with recovering a genealogy of a particular Augustinian model of narrating change, one that can serve as an important vehicle for generating readerly devotion.¹⁰ It assumes there may be other ways of thinking about Augustine and narration or narration and conversion. What matters for my purposes here is not the demonstration of multiple models of a single thing—the way we could think about capturing the complex phenomenon of Augustinian conversion or conversion more generally in a variety of, if not equally valid then certainly complementary, ways. Instead, my aim is to

understand how a particular textual model lives on through time and, in the process, assumes new kinds of meaning and social purpose. To study the presence of a particular model of conversion over time is to study the differences that reside within continuity and the continuities within difference that are the basis of any genealogical understanding of history.¹¹ As Foucault writes of the genealogical method, "It must be sensitive to [events'] recurrence, not in order to trace the gradual curve of their evolution, but to isolate the different scenes where they engaged in different roles."¹² Thinking about conversion in this way, and insisting that we are still talking about some form of conversion when engaging with secular genres, allows for a more capacious understanding of both conceptual change and cultural process, indeed of culture understood as a genealogical process—less a literal search for a distinct category called religious conversion and more a nuanced circulation of semantic and narrative configurations that live on past their initial purposes and migrate into new forms and new places, while being used to new ends. To search for cultural remainders in this way is to understand culture itself as the refunctionalization of historically buried formations.

Approaching the history of the novel in this fashion allows us to gain a new understanding of the genre as a whole, suggesting new kinds of precursors, new forms of intergeneric traffic, and new functions over time. But we also gather insights into novel affiliations within the genre, grouping texts in ways that do not fit our received critical narratives. The *Bildungsroman* for children, the science-fiction narration of planetary escape, the double marriage plot, Kafka's impossible quests—these are all examples of novels that, as we will see, register significantly high on the Augustinian model of narrative conversion. And yet they are not novels that are typically grouped with one another or placed on syllabi together. Reading computationally brings to light a family of resemblances between novels that we had not noticed before, one that depends on larger-scale linguistic shifts that are not accounted for by our critical methods of reading, but that have arguably been very important for the general experience of reading novels.

As we will see, the uniformity of such quantitative features underpin a variety of different semantic and formal approaches to thinking about conversion in the modern novel, of what it means to be turned around while reading. Quantitative pattern provides the linguistic infrastructure for thematic diversity. However far apart these novels may be according to our traditional ways of classifying texts, each offers an extended reckoning with the problems of profound transformation in different ways and to different ends. Reading computationally thus affords us new ways of thinking about the particular idea of "conversion"—both its larger structural patterns and also the diversity of experience that it can entail. Taken together, these novels provide us with a preliminary

taxonomy of post-Augustinian forms of conversional reading—of what it means to be moved as a reader—not a single template, but a rich canvas with multiple ways of prompting personal transformation alongside a sense of readerly commitment, the way novels differently invite us to give ourselves over to them.

In engaging with the history of transformative reading, this project is also self-consciously about the contemporary transformations that underpin the mediations of reading today. My aim is to begin the long-overdue process of reflection on the act of computational modeling—as the construction of a hypothetical structure that mediates our relationship to texts—and the ways in which such models are themselves both circular and conversional in nature.¹³ The use of a model begins with the assumption of the non-identical relationship between the quantitative dimension of language and its meaning. Where in certain cases it may be reasonable to assume that single words or phrases can stand for the thing they are measuring (place names for “place” or dates for “time”), in others, as in a case like “conversion,” an intermediary is required between measurement and meaning. In order to address this question of the model, I will be moving between both close and distant forms of reading, combining these methods rather than opposing them (Fig. 1). What I seek to identify is the iterative process that underlies modeling and meaning-making, as close and distant forms of reading interact in a spiral-like fashion that approaches and yet never quite coincides with some analytical goal (here, “The Conversional Novel”).

In the next section, I begin with the construction of the computational model, which is itself based on an understanding of a particular textual model (Augustine). I then describe the implementation of the model via a comparison of a collection of 450 novels in German, French, and English dating from the late eighteenth century to the early twentieth and a collection of 150 autobiographies written in German over the same time period, which together account for 60,094,905 words of text.¹⁴ My aim in this section is to understand the extent to which these narrative genres, broadly conceived, exhibit different trends in relationship to the Augustinian model. Do autobiographies and novels show significantly different relationships to the binary deployment of language over the course of their narratives, to the dramatization of a conversional before and after? In section three, I conclude by “validating” the model, a traditional step in computational research, which involves the close analysis of a specific subset of high-scoring novels to confirm whether the model captured what it is I thought I was looking for. Are these novels “conversional,” and if so, how?

As I will discuss, “validation” is not understood here in the computer science sense as the establishment of a form of “ground truth”—as proof of the model’s efficacy—but instead as a form of further discovery in

Computational Hermeneutics

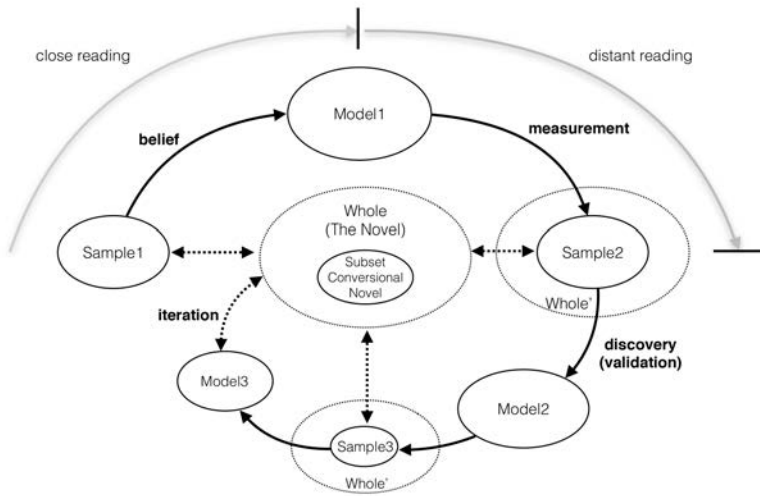


Fig. 1. This diagram captures the different stages of computational reading and the different types of practices each stage entails. Traditional close reading encompasses the first stage of “belief.” Current understandings of distant reading bring us as far as “measurement.” This model advocates for the continuation of the process in an oscillatory fashion, moving back and forth between close and distant forms of reading in order to approach an imaginary conceptual center. The initial sample (here, Augustine’s *Confessions*) is chosen and understood with reference to a larger category (here, “The Novel”), as is the new sample of quantitatively significant texts derived from the model (“Sample2”). “Sample2” is also mediated by the larger sample from which it is drawn (“Whole,” here my subset of 450 novels that are representative of “The Novel”). The process of interpreting “Sample2” is both one of validation—did the model work?—and also one of refinement—in what other ways can we understand and thus measure this group of texts? The overall process is represented as a spiral that does not return to the initial sample, but gradually, though never completely, converges on an imagined generic center.

two directions. We not only gain insights into the specific subset of texts identified by the model, as the model provides the interpretive horizon through which these texts assume new meanings. But we recursively gain insights into the computational model itself through the detailed analysis of the texts it has identified. Close reading does not serve as a vehicle of confirmation, the repetition of computation at a different scale. Nor does it function as a tool of opposition, the illustration of what computation cannot see. Rather, it is understood as a means of model construction itself, embedded within a larger process of circular

discovery whose goal is to undo the scale of conjecture that comes after computation (what do these large-scale results tell us about specific texts?) and before close reading (the seamless ability of a textual example to stand in for an imagined, yet never specified whole). The close reading that follows the distant kind is a prelude to further iterations of both distant and close readings.

My aim in this essay is to offer a methodological polemic against the either/or camps of close versus distant reading or shallow versus deep that have metastasized within our critical discourse today. I want us to see how impossible it is *not* to move between these poles when trying to construct literary arguments that operate at a certain level of scale (although when this shift occurs remains unclear). In particular, I want us to see the necessary integration of qualitative and quantitative reasoning, which, as I will try to show, has a fundamentally circular and therefore hermeneutic nature. As we move out from a small sample of texts toward larger, more representative populations and back into small, but now crucially *different* samples, such circularity serves as the condition of new knowledge, of insight per se. It puts into practice a form of conversional reading, one whose *telos* is not a single, radical insight, but instead an iterative and circular process that can serve as a vehicle for conceptual change. As Victor Turner remarked, the circular nature of the pilgrimage is always fundamentally elliptical.¹⁵ We come back in a different way than we went out. Such is the conversional nature of computational reading.

In moving between the quantitative and qualitative forms of reasoning that are at the core of this conversional process, I think we will increasingly find that there is a kind of critical estrangement at work, too, one that is different from the bibliographic attachments or the “hermeneutics of suspicion” that have long surrounded our professional and personal relationships to texts.¹⁶ In engaging with the process of modeling, we are left to account as much for the mediation of our textual responses as for the immediacy of our passions or our skepticism (as the model becomes a quasi-subject in the interpretive process). Reading’s revolutions, the epiphanic insight as staged by Augustine and crucially tied to the medium of the book, will be replaced, I suspect, by reading’s resolutions, the iterative computational process through which we perpetually approach a body of texts, both near and far, without end. Translating texts into and through a computational environment produces both new and unsuspected ways of imagining textual groupings, as well as ones that are mind-numbingly familiar—strange precisely because they are so mundane. This is what I would call the “strange hermeneutics” of computational reading. We don’t so much unmask with the computer as

puzzle over the meanings of quantitative facts or just get bored by their incapacity to tell us anything new. Reckoning with this admixture of the strange and the mundane will be the precondition of our sustainability within academic institutions increasingly obligated to a science-system premised on the sine qua non of “new knowledge” and “repeatable knowledge.” But it will also challenge a professional stance that has too often failed to engage its unstated and yet deeply felt attachments to books, forcing us to reflect anew on the technological conditions of readerly attachment, both past and present.

II. Model Construction (Distant Reading)

This project began with a belief. After reading Augustine’s *Confessions*, I felt that conversion was an experience that required different registers of language to capture the sense of self before and after conversion. The new life that conversion enacted required either a new kind of vocabulary or a shift in the intensities of an existing vocabulary. Based on my reading of Augustine within the context of the history of life narratives, language and form were integrally related.

In order to test this belief, I implemented one of the most widely used techniques for thinking about the large-scale relationship between documents, the vector-space model. This approach represents texts as multidimensional objects, where each dimension corresponds to a particular word’s frequency within that document. Instead of thinking about a text as the linear arrangement of sentences and words within sentences, the vector-space model understands texts to be defined by the relative recurrence of words and uses those values to plot the text in space. According to this view, textual meaning is a function of linguistic repetition.¹⁷ If we think about a single word or even a pair of words, such a model will inevitably appear trivial and over-simplified as we sacrifice a great deal of contextual information about these words (i.e., most of the text). However, when we begin to think about hundreds if not thousands of words, we gain a much more complex understanding of the way a text deploys language. This is the first rule of computational hermeneutics: *simplification is the cost of understanding complexity at a greater degree of scale*. Rather than see this as a way of losing the syntagmatic dimension of language—that a word’s meaning is partially a function of its syntactic context—we should see the vector-space model as a means of recreating a new kind of syntax, only at a larger level of scale across the entire work. The context of a word is no longer those words immediately adjacent to it that are syntactically inflected, but words across the entire work

that are quantitatively inflected. What this allows is the ability to place a larger number of documents in relation to one another based on a far greater amount of words than could ever be done by human reading alone, such that spatial relations between texts become an approximation of linguistic similarity and dissimilarity.¹⁸ The more words that two texts share, and the more similar their frequencies (their “coordinates”), the closer they will appear in this multidimensional text-space.

In order to test whether the *Confessions* is indeed marked by these larger linguistic shifts between its constituent parts, I first divided it into chapters (or books, according to Augustine’s nomenclature) and created a vector-space model of the relationships between these books.¹⁹ What you see below is a plot that uses multidimensional scaling (MDS) to represent the lexical similarity of the thirteen books of the *Confessions* to each other (Fig. 2). MDS is a process similar to principal component analysis that tries to reduce multidimensional data into as few dimensions as possible (in this case two) while retaining as much information within the data as possible.²⁰ The more words two chapters share at similar degrees of frequency, the closer they will appear in the plot. Those that appear near one another share this larger-scale syntax, what we might call a “discourse” for lack of a better word—the recurrent usage of a particular type or subset of language, which Foucault called a “field of regularity.”²¹

There are two features that this graph brought to my attention and that I subsequently chose to build into my model. The first is the distance between the pre- and post-conversional books of the *Confessions*. Augustine’s conversion occurs towards the close of Book 8, and we can see how there is a noticeable difference between the clustering of Books 1–10 and Books 11–13.²² Books 11–13 seem to break away from the rest of the books, though in an interesting twist, Book 13 appears to return back to the original ten books in more circular fashion. (A standard clustering test such as k-means indicates that the two clusters consist of Books 11–12, with Book 13 being grouped with Books 1–10.) As the Augustine scholar James O’Donnell writes about the post-conversional books, “What A. learned to do at Ostia he now *does*, in writing this text. This is no longer an account of something that happened somewhere else some time ago; the text itself becomes the ascent. The text no longer narrates mystical experience, it becomes itself a mystical experience.”²³ According to the graph, there is a strong dissimilarity of language between the pre- and post-conversional narration, one that begins to converge back on itself by its close.

The second feature of this graph is the relative distance between the books *within* the clusters. We can see how the clustering of the pre-

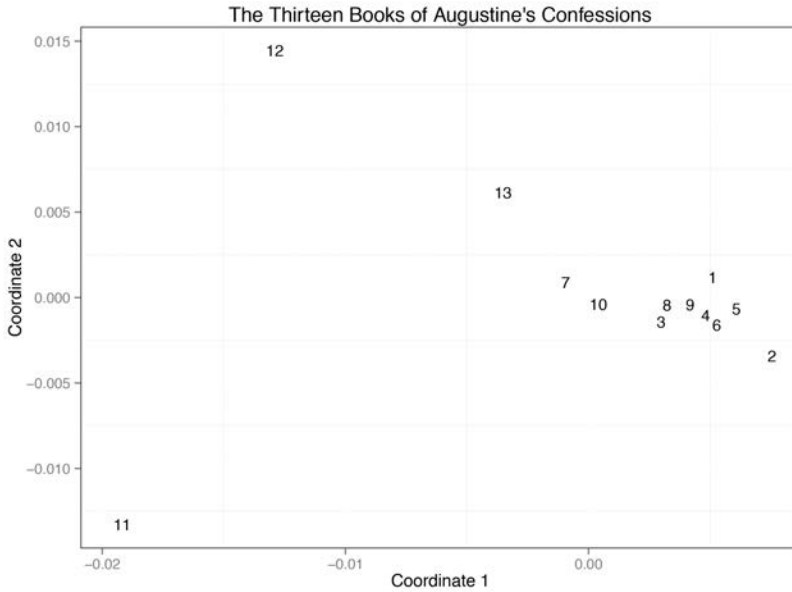


Fig. 2. This plot represents the similarity between the language of the thirteen books of Augustine's *Confessions* using the process of multidimensional scaling. The closer two books are, the more they share a common language used according to a similar degree of intensity.

conversional books is significantly tighter than that of the post-conversional books. The later books are not just further away from the earlier books, they are further away from *each other*. Indeed, it might not even be appropriate to speak of a “cluster” for Books 11–13, but instead of a series of distinct points radiating outward from the first ten. There is a strong intradiscursive difference between the narratives of life before and after conversion, or, said another way, the language after conversion becomes far more heterogeneous than before. Augustine not only speaks in very different terms before and after his conversion, but he also speaks *increasingly* differently. According to the graph, conversion is an entry into discursive plenitude.

From this graph I constructed a model consisting of two different measures whose aim was to capture these two distinct features of narrative conversion. The graph is not in this sense a result, but rather an exploratory tool that belongs to the process of model construction. Space and concept are integrally related in the modeling process. The two features that I aimed to capture were based on the idea of “group average clustering” and consisted of a) the distance between the earlier and later parts of a work (which I will be calling the “cross-half distance”)

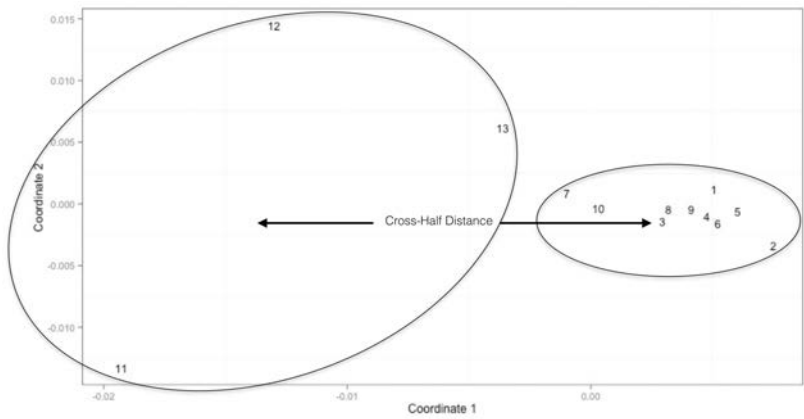


Fig. 3a. Cross-Half Distance

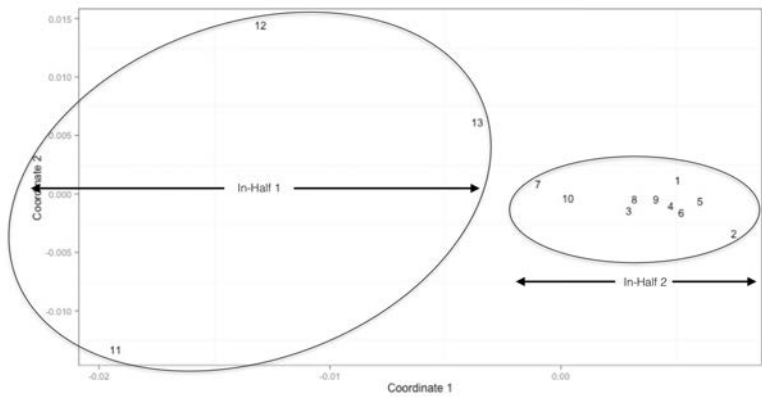


Fig. 3b. In-Half Distance

Fig. 3a & b. The cross-half distance (a) captures the average distance between the pre- and post-conversional parts of the *Confessions*. The in-half distance (b) captures the *difference* between the distances of the pre-conversional books to each other and the post-conversional books to each other (= InHalf1—InHalf2). In the model discussed below, these measures will capture the distances between the first and second *halves* of each novel.

(Fig. 3a), and b) the difference between the distances *within* the earlier and later parts of a work (which I will be calling the “in-half distance”) (Fig. 3b). The greater these two distances, the more a work could be said to resemble the narrative structure of Augustine’s *Confessions* and thus be thought of as more “conversional.” A full description of the model can be found here.²⁴

When I implemented this model, I found two noteworthy points. First, *The Confessions* scored significantly higher on both measures than a vast majority of the novels; for the in-half score, it was higher than any novel in the collection.²⁵ The model was, in other words, very good at identifying the text it was modeled after. This is mundane, but important. I then compared my two collections using this same model. My aim was to understand if these two different narrative genres—autobiography and the novel—exhibited significantly different relationships to these two forms of linguistic change during their quantitative and formal solidification over the course of the long nineteenth century.

The novels in all three languages scored significantly higher than the autobiographies for both measures (Fig. 4).²⁶ According to the model, autobiographies are marked by a lower degree of polarity or disjunction in their narration, which suggests a greater degree of, if not continuity, then at least stability or coherence—a point that has interesting implications for thinking about the genre’s rise in the nineteenth century, as well as its relationship to the novel (if we think in terms of a Luhmannian social differentiation of forms). There is an investment in the continuity of person that matters to autobiography and that strongly differs from the discursive change that characterizes the novel, giving us some indication of the different kinds of social functions these genres might have played during this period.²⁷

A further test, one that looks for the optimal number of clusters within any given work (called a silhouette test), gives further evidence of the novel’s largely binary nature: as we can see in the plot, over two-thirds of all novels in the German set are best defined by only two clusters (Fig. 5).²⁸ Autobiographies, by contrast, not only have a much lower percentage (closer to 50%), but they also have a greater number of works with a greater number of clusters, suggesting that the lack of binariness in the life narrative allows for a greater degree of smaller differentiations to be articulated. As a further way to test the significance of these findings, I compared my sample of novels to a collection of non-narrative texts consisting of essays and philosophical texts. In this case, novels did *not* score significantly higher on either measure, suggesting that the model only applies to distinctions within narrative genres, likely having to do with the greater degree of linguistic continuity imposed by nar-

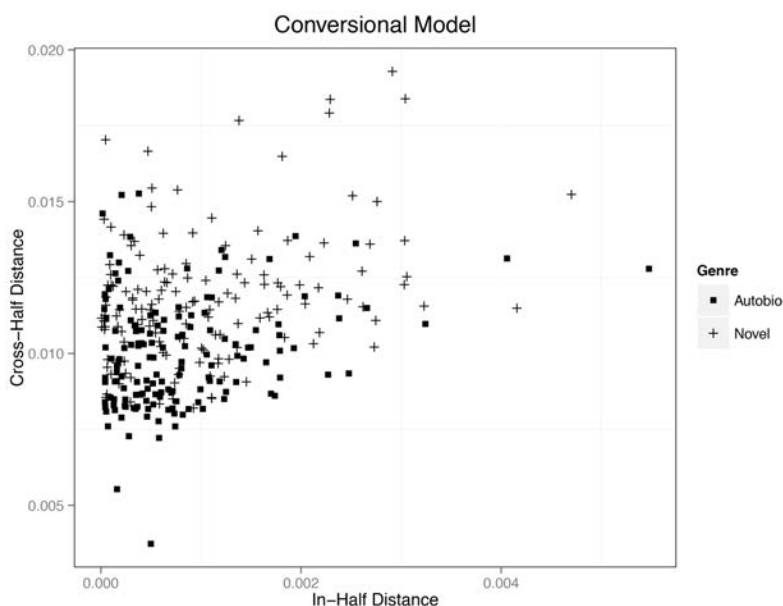


Fig. 4. Bivariate plot of autobiographies and novels in German according to the two conversation scores.

ration, though this warrants further testing.²⁹ The model was thus able to identify both significant distinctions between genres as well as a limit case of such distinctions when they no longer hold.

This is traditionally the point at which current exercises in distant reading come to a close (see Fig. 1). Given a statistically significant large-scale outcome, one spends a brief amount of time conjecturing about its cultural significance (as I have just done) and then moves on. This is, however, precisely the moment when we need to return to our qualitative methods, not as an end in themselves, but as a means of further refining our quantitative models—to reduce the so-called scale of conjecture (indicated in the dotted lines in Figure 1 pointing towards the diagram’s imaginary center of “The Novel”).

The next question would then be something like: what kinds of narrative content do these quantitative measures correspond to? Rather than look broadly between populations (novels versus autobiographies or other narrative genres), what if we looked *intragenerically* at the novels that scored significantly higher on these measures? If a novel is identified as extraordinarily “conversional,” does it have something to do with conversion? If so, in what way? Does the quantitative indication of strong linguistic shifts over the course of a novel correspond to a *semantics* of conversion?

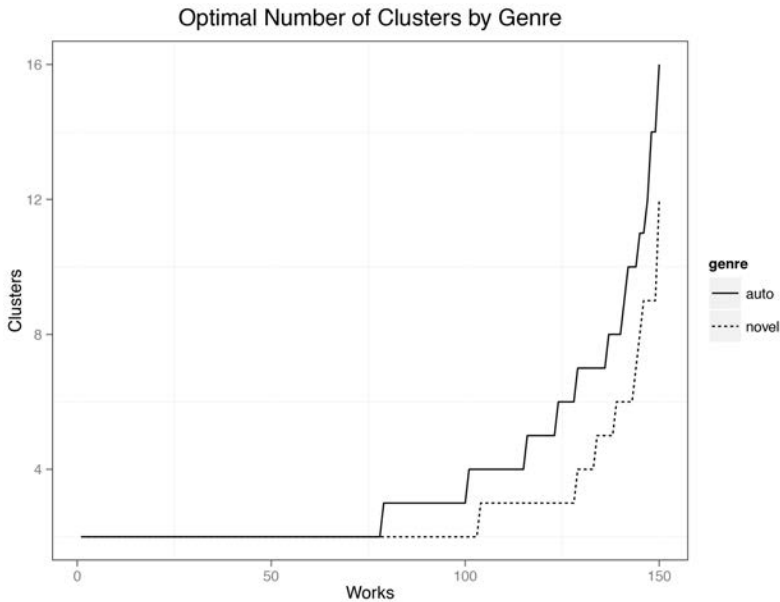


Fig. 5. Results of a silhouette test to search for the optimal number of clusters by genre. The most common outcome, two clusters, was common to both genres, but significantly more common for novels than for autobiographies. Additionally, we can see how more autobiographies partition into more clusters than novels. Only twenty-one novels partition into more than three clusters, whereas the same number of autobiographies group into seven or more clusters. Only German novels were used for this comparison to maintain the equality of corpus size.

This is what is known in the world of computer science as the process of validation—proving that the measures used correspond to the thematic content they are measuring. And this is what I would like instead to define as a process of discovery. Identifying the different ways that novels perform “conversionality” can help us qualitatively understand the nature of conversational narration in the novel. But it can also help us identify features that we can then build into the model and test further as a way of learning more about the nature of conversational narratives (“Model2” in Fig. 1). If I had begun my investigation with a subset of novels already labeled “conversational” in order to test the accuracy of my model—how well did it capture what I already knew?—it is highly unlikely that I would have grouped my novels in the manner revealed by my computational analysis. Indeed, over a century of scholarship on the novel has failed to arrive at such a grouping. At the same time, once I have created the model and implemented it, it is highly *likely* that I

will find what I am looking for when reading closely. This is how close reading confirms our beliefs. Validation should in this regard not be seen as an end in itself, but as a process for developing further hypotheses for testing. This is the second law of computational hermeneutics: *validation does not validate; it provides the means for further testing*. As close reading tests the validity of our distant reading, so too should distant reading test the validity of the close. In the next section, I undertake the process of validation-discovery as a prelude to remodeling.

III. Discovery (Validation)

To begin, I ranked my novels according to the two conversion scores discussed above, with the results appearing here in descending order, keeping only those that were statistically significant for at least one score (Table 1). Novels that exhibit one or both of these features to a significantly high degree should, according to my model, articulate some type of conversional experience, an indication of profound linguistic and/or temporal change. As with Augustine, there should be a clear sense of binariness (the self before and after conversion), but also incorporation, the subsumption of the self within something beyond the self. In what follows, I offer a preliminary taxonomy of novelistic conversion as well as a list of hypotheses for further testing. Reading the novels gives us a way of identifying and profiling potential features for further understanding the nature of this particular subgenre.

Nature-Cultures, or The Return of the Divine

One of the principal features that characterizes highly conversional novels is a strong concern with the binary of nature/culture. The point is not the structuralist identification of this binary as definitive for the novel (or for modern culture more generally); rather, it becomes a useful schema to dramatize religiously inflected experiences. Johanna Spyri's *Heidi* novels, Jack London's *White Fang*, Flaubert's *Smar*—these are novels that are at base about a structural dichotomy in the world, one that is highly coded in both religious and natural terms. In Spyri, the grandfather who lives high in the Alps will undergo a conversion to Christianity at the novel's close (as the Swiss savage is saved); in London, human beings are referred to as "the gods" from the point of view of the half-wolf leaving the wild, and it is the human world that the wolf will re-enter; in Flaubert, the longing for conversion that will preview

Table 1.

WORK	CROSSHALF	Z.SCORE	RANK	INHAF	Z.SCORE	RANK	COMBINED
<i>German</i>							
Paul Scheerbart, <i>Lesabéndio</i> (1913)	0.0183	+3.07	2	0.0030	+2.15	5	3.5
Johanna Spyri, <i>Heide kann brauchen</i> (1881)	0.0193	+3.49	1	0.0029	+2.01	8	4.5
Theodor Fontane, <i>Irrungen, Wirrungen</i> (1888)*	0.0152	+1.59	11	0.0047	+3.95	1	6
Johanna Spyri, <i>Heides Lehr- und Wanderjahre</i> (1880)*	0.0183	+3.06	3	0.0022	+1.34	17	10
Franz Kafka, <i>Das Schloß</i> (1922)**	0.0150	+1.48	13	0.0027	+1.84	9	11
<i>French</i>							
Jules Renard, <i>Poil de carotte</i> (1894)	0.0251	+3.72	1	0.0047	+3.40	3	2
Gustave Flaubert, <i>Smur</i> (1839)	0.0242	+3.38	2	0.0055	+4.15	2	2
Isabelle de Charrière, <i>Trois femmes</i> (1795)	0.0212	+2.23	4	0.0040	+2.73	4	4
Jules Verne, <i>De la terre à la lune</i> (1865)*	0.0174	+0.79	27	0.0058	+4.46	1	14
Sophie Segur, <i>Les Malheurs de Sophie</i> (1864)*	0.0233	+3.01	3	0.0018	+0.63	26	14.5

WORK	CROSSHALF	Z.SCORE	RANK	INHAF	Z.SCORE	RANK	COMBINED
<i>English</i>							
Thomas Love Peacock, <i>Nightmare Abbey</i> (1818)	0.0224	+2.78	2	0.0051	+3.46	3	2.5
Mary Wilkins Freeman, <i>Pembroke</i> (1894)	0.0209	+2.29	6	0.0042	+2.65	6	6
Jack London, <i>White Fang</i> (1906)	0.0198	+1.90	8	0.0042	+2.66	5	6.5
Thomas Love Peacock, <i>Headlong Hall</i> (1815)*	0.0186	+1.47	12	0.0054	+3.74	1	6.5
Maria Edgeworth, <i>Castle Rackrent</i> (1800)*	0.0198	+1.88	9	0.0034	+2.01	10	9.5
H.G. Wells, <i>The Time Machine</i> (1895)*	0.0168	+0.85	23	0.0051	+3.46	4	13.5
F. Scott Fitzgerald, <i>This Side of Paradise</i> (1920)*	0.0151	+0.27	48	0.0053	+3.61	2	25

Table 1. This table lists the highest-scoring novels by language for each measure. Only those novels that have at least one statistically significant measure are considered. They are ordered by their combined rank for both measures. An asterisk indicates novels that have only one statistically significant measure. One novel, Kafka's *The Castle*, which is marked by two asterisks, has both measures below the threshold even though it was still in the top five for combined rank. In some cases, as in Scheerhart and Renard, both measures were considerably high. In others, there was a strong divergence between the two, as in the case of Fitzgerald or Jules Verne, both of which had very high in-half scores but considerably lower cross-half scores.

the later philosophical work, *The Temptation of St. Anthony*, is framed as a retreat from the infinite to the abyss of civilization's grotesque (embodied by the Mephistophelian stand-in "Yuk"). As Smar declares in his conversation with Satan, "Oh! my heart expands, my soul opens, I am losing my head; I feel that I am going to change," only to conclude a few pages later, "No, no, take me back down to my earth, give me back my cell."³⁰ Or as Amory Blaine, the hero of Fitzgerald's late *Bildungsroman* of disillusionment and the second-highest novel in terms of in-half distance, remarks, "We want to believe. Young students try to believe in older authors, constituents try to believe in their Congressmen . . . but they can't. Too many voices, too much scattered, illogical, ill-considered criticism."³¹ The incompletable quest for belief is one of the conversional novel's great themes.

Spyri's novels provide a good case in point. Profoundly influential within the genre of children's literature, few novels are as explicitly about religious conversion as these.³² The first novel in the series, *Heides Lehr- und Wanderjahre* (*Heidi's Apprenticeship and Journeyman Years*) borrows the archetypal form of the *Bildungsroman* from Goethe's *Wilhelm Meister* series to tell the story of a young Swiss orphan girl who is given to her grandfather by her aunt, who can no longer take care of her.³³ As we will see, borrowed templates very often seem to be the backdrop of conversional novels with their accentuated binariness (the gothic parodies of Thomas Love Peacock, the Faustian adaptation of Flaubert, or the many epigones of the *Bildungsroman*). After three years of idyllic existence in her misanthropic grandfather's hut high in the Alps, Heidi is taken away by her aunt and deposited with a wealthy family in Frankfurt; the importation of the Swiss savage into the domestic space of German *Kultur* assumes the literal form of a descent. Heidi grows increasingly sick in her new cultured surroundings and is on the verge of death by emaciation when she is suddenly shipped back to the Alps. The drama of the novel hinges on whether her grandfather is still alive and the way she imports two salient experiences from the space of *Kultur*: she has learned to read and pray (in reverse order). The novel closes with her grandfather's conversion to Christianity and his renunciation of his former renunciation of God. The *Ergebung*, or submission, required of Heidi to the social mores of Frankfurt is translated by the close of the novel into a submission before God as well as the book.

As this brief excursus should make clear, there is a remarkable correspondence between the Augustinian template of conversion and the thematic content of *Heidi*. Indeed, in a separate test that looked at the persistence of Augustinian vocabulary in novels more generally, the *Heidi* novels were the top two scorers.³⁴ In this, Heidi appears to be

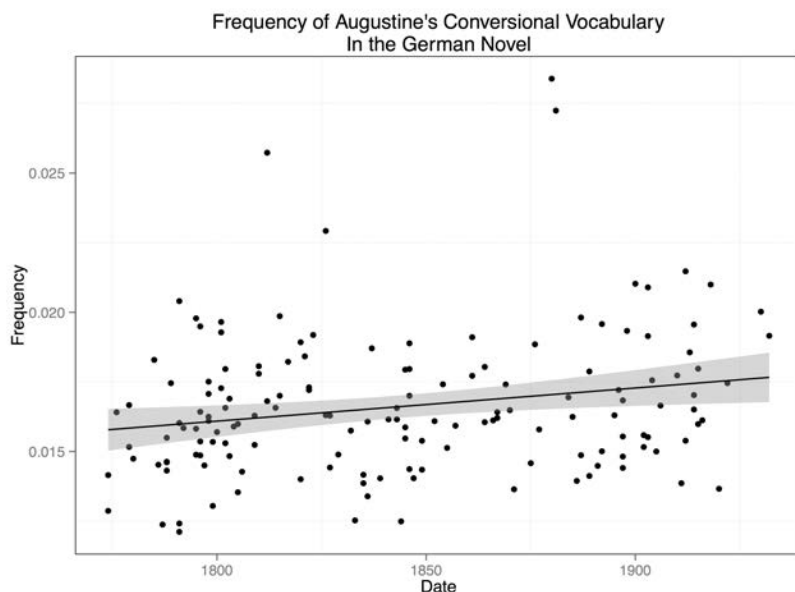


Fig. 6. A plot of the frequency of Augustine's vocabulary used during his conversational scene of the *Confessions* in Book 8.12 as it appears in the German novel. The dictionary was derived by taking five separate translations of Augustine into German over a century and a half and keeping only those words that were present in all translations for a total of forty-four words.

of its moment: not only is such vocabulary stronger on average in the novel genre, it also appears to increase slightly over the course of the nineteenth century (Fig. 6).³⁵ At least in German, novels become more Augustinian over time, not less so, and women tend to use this vocabulary to a greater degree than men, suggesting a compelling insight into the women's novel as it develops in German.³⁶

The *Lehr- und Wanderjahre* is not only explicitly about a religious conversion on the part of the grandfather, one with clear Augustinian overtones; it is also suffused with a series of binary structures, from the nature/culture divide between Switzerland and Frankfurt and the generational divide between grandparent and grandchild to the developmental divide between reading and non-reading. It is this last that seems the most significant to the novel. Indeed, "reading" is the sixth most distinctive word in the entire novel relative to the whole corpus of German novels.³⁷ Heidi's learning to read marks the beginning of her return home and to God. When asked if Heidi can keep her first book, Klara's grandmother replies, "Yes, yes, now it belongs to you."

"Forever? Even when I go home?" Heidi replies. "Certainly forever! . . . Tomorrow we will begin to read," says the grandmother.³⁸ The possession of the book, its graspability, serves as the precondition of the chain of conversions with which the novel concludes. The grandfather's own conversion at the novel's close will tellingly occur after staring at Heidi's folded hands one evening while she is asleep, as the book and the child's physiological gesture coalesce to produce spiritual transformation. The scene provides a distinct echo of Augustine's own haptic theory of conversion in the all-important refrain and its manual imperative: "Take it and read, take it and read."³⁹

If Heidi is in one sense about the importation of culture into nature as the precondition of radical change, Jack London's *White Fang*—the popular tale of a domesticated wolf—works the other way around. The lesson learned through the novel, as told from the animal's perspective, is the acquisition of the iron law of the social. As the narrator will remark at the midpoint of the novel using free indirect discourse, "[White Fang's] allegiance to man seemed somehow a law of his being greater than the love of liberty, of kind and kin."⁴⁰ *White Fang* descends from a mother who is half-dog, and the novel recounts the story of his gradual inclusion into society. Like *Heidi*, the novel is suffused with binaries: between the Southland and Northland, human and animal, savage and civilization, the Wild and everything else. *White Fang* will eventually save his adopted owner's life and that of his family, a repayment in the gift economy that the novel calls "justice." "It was the beginning of the end for *White Fang*—the ending of the old life and the reign of hate. A new incomprehensibly fairer life was dawning" (*WF* 214). *White Fang*'s conversion is completed at the end of the novel as he fathers puppies with the local Collie: the sheepdog as archenemy of wolves everywhere is now the mother of his offspring.

Hypothesis 1: Conversional novels are defined by nature/culture dichotomies, where nature is a proxy for the divine. To test this hypothesis, we can create dictionaries based on these novels (consisting of both words for "culture," such as civilization, justice, reading, etc., and words for "nature" such as Alps, trees, wilderness, etc.) and measure their intensities. The stronger both vocabularies are, the more conversional a novel can be said to be.

Outer-Space, or Incommunication

If nature plays outside to culture's inside in the late *Bildungsroman* of the nineteenth century, "space" would provide another, more radical duality in the nascent genre of science fiction.⁴¹ H. G. Wells's *Time*

Machine (1895), Jules Verne's *De la terre à la lune* (1865), and Paul Scheerbart's *Lesabéndio* (1913) all stand for the ways in which science fiction tales rely on strong oppositional models, as the nature-culture divide of the *Bildungsroman* is translated along a culture-technology axis. Outer-space and technology become poles to the terrestrial and the everyday, with transcendence their primary narrative thrust. *De la terre à la lune* is essentially a tale of ballistics, the elliptical arc standing in for the human desire to escape the human. After numerous descriptions of the work of the Baltimore "Gun-Club" to perfect the ideal cannon and projectile—to locate the geotechnical preconditions of escape velocity (from the proper thickness of the shell, to the length of the canon, to the amount of powder necessary)—the novel turns dramatically at the moment when a human volunteer (from France) emerges to ride to the moon, eventually convincing the canon's inventor and his arch-rival to come with him. The arc of the novel is not nature's incorporation within culture, as with the domesticated wolf-dog, but instead the literal encapsulation of the human within the technological.

Paul Scheerbart's *Lesabéndio*, which was one of Walter Benjamin's favorite novels, is similarly obsessed with this process, only instead of the perfect projectile it is concerned with the building of a transplanetary tower, replaying Babel in a modern key. The aim is communion with the ambiguously coded "das Größere" (the Larger). Once again, *Ergebenheit*, or total communion with another, is explicitly put forth as the novel's goal: "Lesabéndio swung in spiral curves slowly down into the depth and thought only of his theory of submission [*Ergebenheitstheorie*]."42 The novel concludes with Lesabéndio's ascent into outer-space, an ascent that feels distinctly Faustian. Like Faust, Lesabéndio goes blind in the process and encounters a series of allegorized voices. He begins in a state of laughter but ends in one of excruciating pain, an experience that is framed as a radical reorientation of the senses. Transcendence of the planetary is rendered as a profound physiological rupture, but it is also finally depicted as silence. "But Lesa said *nothing*" (L 195; emphasis in original). In a similar vein, in a surprise twist in Verne's *De la terre à la lune*, the rocket never lands on the moon, thus forestalling the hoped-for communication with those left behind or those who have moved beyond. The problem of conversion that these science fiction novels engage with is that of communication: how to convey this new-found knowledge to those who have not undergone such an experience? How does one communicate with the planetary remainder?

Unlike Augustine, who enters into a field of discursive plenitude—conversion as the condition of a more expansive form of communication—conversion is rendered in Scheerbart as the ultimate limit of

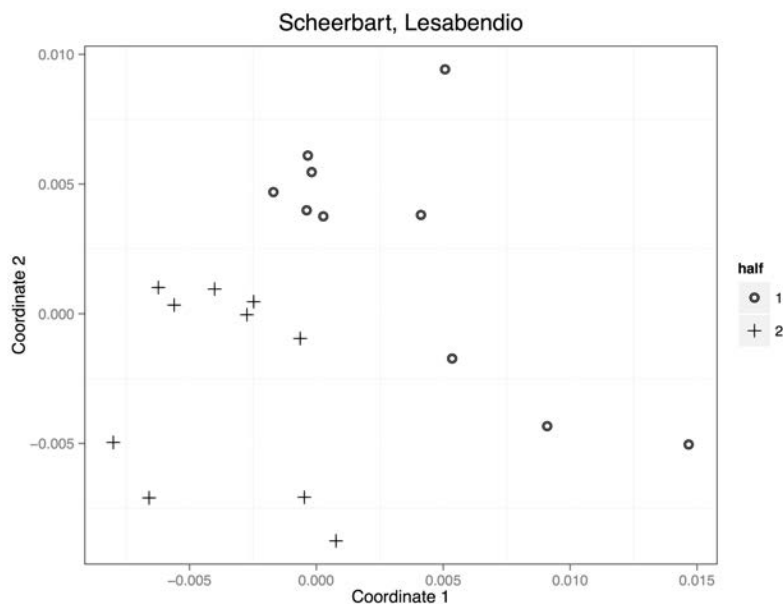


Fig. 7. MDS Plot of Scheerbart's *Lesabéndio* with the points labeled by the novel's two halves.

communication, as that which cannot be said. An important feature of this novel is that the in-half distance between the novel's two halves is strongly negative, meaning the first half of the novel exhibits greater linguistic range than the second (Fig. 7). Where Augustine's conversion is framed as a turn toward linguistic fullness, *Lesabéndio*'s is framed as one of linguistic constriction, the narrowing-in of speech. The "new life" that is invoked in the final sentence of the novel—conversion's ultimate trope—will accordingly be rendered in the subjunctive: "And the green sun shone so brightly—as though a new life awoke on it as well" (*L* 199). [Und die grüne Sonne strahlte so hell auf—als wäre auch auf ihr ein neues Leben erwacht.] The communication of conversion and the concatenation of rebirth—the possibility of passing on the conversional experience from one person to another or from one planetary object to another—is ultimately marked as an interpretive process, a concluding hypothesis to complement the novel's opening one. This is the reason why Verne's moon voyage is not circular, or even communicable. Conversion is that which is interpreted by an outsider, not articulated by an insider. This is modern conversion's "outer-space," its incommunicable remainder.

Hypothesis 2: Conversional novels are defined by a topos of incommunicability. We can create measures of phrases that articulate a communicative impasse such as: a) subjunctive phrases like “als wäre” or “as though + verb”; or b) said + negation (“said nothing,” “did not say,” “could not say,” etc.). Higher conditionality and higher negativity should correlate with greater conversionality and its incommunicability.

The Double Marriage, or Polysemy

If the novels that I have so far described work with very strong geographical markers of difference—the moon, the double planet, the Alps, the Wild—Mary Wilkins Freeman’s *Pembroke*, Theodor Fontane’s *Irrungen, Wirrungen*, or Jules Renard’s *Poil de carotte* are far more microcosmic in scale. They each concern fraught marriages, binarily structured social relations, and the oppressive constrictions of everyday life. Fontane depicts an affair between the aristocratic Baron Botho and the working-class Lene, who will split roughly halfway through the novel and marry more appropriately to their respective stations, preserving the class hierarchies of Wilhelmine Berlin. Freeman narrates the story of the failed marriage between Barnabas Thayer and Charlotte Barnard (we can see how the naming convention Barnabas-Barnard contains within itself the novel’s implicit trajectory). Of all the marriage plots that occur in the novel over the course of the century-and-a-half under investigation, these two novels seem to be most overwhelmingly structured by difference. The absence of Jane Austen here might itself be telling; her critical acceptance is premised on her *not* conforming to a narrative model based on larger affective swings, but instead on linguistic continuity and thus a certain sense of subtlety in need of interpretation. Her novels’ canonicity is a condition of their serial uniformity and ambiguity of distinction.

Turning first to Freeman, we note that the central event of the novel is Barnabas’s unwillingness to “come back” after a fight with his future father-in-law. The novel turns on someone quite literally not turning around. It is for Freeman a study of the human will and its need to be cured through love: “Pembroke was originally intended,” writes Freeman, “as a study of the human will in several New England characters, in different phases of disease and abnormal development, and to prove, especially in the most marked case, the truth of a theory that its cure depended entirely upon the capacity of the individual for love which could rise above all considerations of the self.”⁴³ Again and again, Barnabas will utter the words “I can’t” as a refrain of his alliterative predecessor *Bartleby*’s “I prefer not.” This is not a novel of resistance

so much as human incapacity—what it means to want to do something that one cannot emotionally undertake. Barnabas's and Charlotte's problems will be mirrored in multiple other failed relationships within the novel, through Rebecca Thayer's illicit pregnancy and her marriage to William Berry, Richard Alger's abandonment of the old maid Sylvia Crane, and the heart-wrenching death of Ephraim, Barnabas's sickly little brother, who dies from a combination of secretly sledding one night in the moonlight ("for the first and only occasion in his life he had had a good time" [*P* 162]) followed by a beating from his mother. Seen from the century's end, there is just not enough love to go around in mid-century New England. Over the course of the novel, Barnabas will become more and more crooked, a vertical metaphor that will find its horizontal double in his living in an unfinished hut in between the two family homes. Finally, at the close of the novel, ten years after their initial break, he returns to Charlotte due to an awakening occasioned by a life-threatening illness. "He's walkin', he's walkin' straight as anybody!' . . . Charlotte came forward, and he put his arm around her. Then he looked over her head at her father. 'I've come back,' said he" (*P* 229). Barnabas's physical, mobile, and spiritual conversion is complete.

Fontane's novel is strikingly similar in its plotting of the binary households alongside the larger message of acceptance. As Botho remarks at the novel's decisive turning point using the key term, *Ergebung*: "Resignation is absolutely the best."⁴⁴ (*Ergebung ist überhaupt das Beste.*) Spatial duality accompanies, or rather serves as the setting for, the personal experience of giving oneself over to something greater than oneself. Fontane's novel, and his work more generally, are most often noticed for their highly dialogical nature (the prevalence of dialogue over narration) and the linguistic diversity that this engenders through the novels' attention to dialect and class. *Irrungen, Wirrungen* is one of the great nineteenth-century exemplars, according to its critics, of Bakhtinian heteroglossia.⁴⁵

Yet what I'd like to argue here is that such polyphony is not static, but undergoes a trajectory within the novel, one that is essential for understanding the types of linguistic conversions the text is invested in generating. One of the most important things that the conversionality tests tell us about Fontane's novel is that, of all the novels in the German corpus, *Irrungen Wirrungen* is marked by the greatest degree of linguistic difference between the first and second halves (in-half distance) (Fig. 8). It is not that Fontane changes his vocabulary significantly over the course of the novel, but that, more than any other in the German tradition, the novel undergoes a linguistic *narrowing* toward its conclusion. The social constraints of marriage and class are mirrored by a lexical constraint of

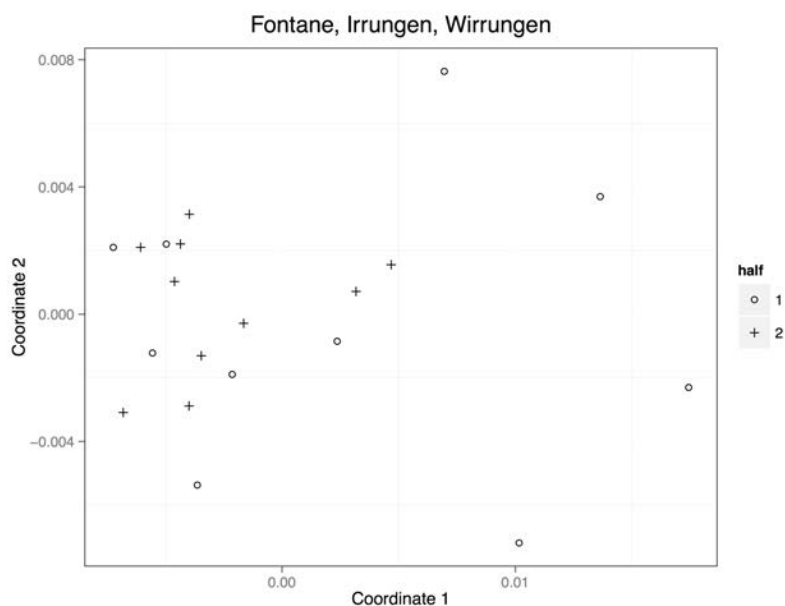


Fig. 8. MDS plot of Theodor Fontane's *Irrungen, Wirungen*. The plot gives an indication of the ways in which the large spread of the first half of the novel shrinks down into a much more limited space by the second half.

speaking. The extraordinary polyphony of the novel's opening half—a polyphony of class and dialect that Fontane is so well known for and that informs much of the scholarship on his work—is present in order to foreground its subsequent loss.

And yet the salient point about this lexical constriction is the way it is compensated for by a *semantic* opening up. The spatial doubleness that so marks the novel serves as the setting for a thinking about the nature of language. One of the novel's strangest features is the identification of Botho's new wife, Käthe, with the comic and with laughter. "It is just too funny" (*JW*174) [*Es ist doch zu komisch*], says Käthe at one point, a refrain that is then oft repeated: "Ah, that is too funny" (*JW*183) [*Ach, das ist zu komisch*]; "Can you think of something funnier than that?" (*JW*187) [*Kannst du dir was Komischeres denken*]; or "Love-letters, too funny" (*JW*184) [*Liebesbriefe, zu komisch*]. There is of course nothing funny about "love letters," let alone this novel. "Komisch" can also mean strange in German, and it is this strangeness of the comical that I think Fontane is driving toward. There is a non-literal aspect to communication that emerges through the process of socialization, an enfolding of meaning *inward*. The lexical reduction that marks the novel as a whole

is compensated for by a semiotic expansion of language—*polysemy*, not polyphony, becomes the novel's telos.

Such doubling will find its ideal scenic correlate in the balcony: the place where much of the concluding dialogue between Botho and Käthe transpires and the location that Jonathan Crary has identified as a quintessential liminal space of modernity, enshrined above all in the work of Manet.⁴⁶ It will find its lexical articulation in the impersonal prepositions that are statistically unique to this novel, words like “drüben,” “dahinter,” “dazwischen,” or “draußen”—over there, behind, between, and beyond—so many repetitive articulations of a semiotic elsewhere. Conversion for Fontane is not a physical or mental movement away or towards some goal. Rather, novelistic conversion is understood as a process of semantic enfolding, of an increased density of meaning within language.

Hypothesis 3a: Conversional novels are structured by strong binary geographies, which are marked by different ways of speaking. Using named entity recognition, do we find the grouping of names into different lexical communities? The stronger the dichotomy between them (the clearer their difference), the more conversional a novel could be said to be.

Hypothesis 3b: Conversional novels are marked by an increase in polysemy over the course of the novel. Lexical reduction corresponds to semantic complexity. Could we create a measure that accounts for the semantic ambiguity of a text, the ways in which it becomes increasingly difficult to locate a word's particular meaning? By implementing a series of tools—part of speech tagging, machine translation—we can see the degree to which they fail. Values should subsequently increase as the novel progresses.

Kafka, or Becoming Recursive

To turn to my last example is to turn to the most obvious and the most puzzling case at once. On the one hand, to speak of Kafka in relation to theological concerns is to enter into one of the more familiar terrains of literary scholarship. Few modern writers have been more vociferously interpreted in relation to transcendental questions than Kafka. Such concerns are indeed very often tied to questions of conversion, whether understood as corporeal change (“The Metamorphosis”) or profound belief (“In the Penal Colony”).⁴⁷ The search for communion with something fundamentally elusive that transpires across a protagonist's body is one of the hallmarks of Kafka's fiction.

And yet, unlike the published stories that revolve expressly around questions of conversion, the unpublished novels seem to resist such af-

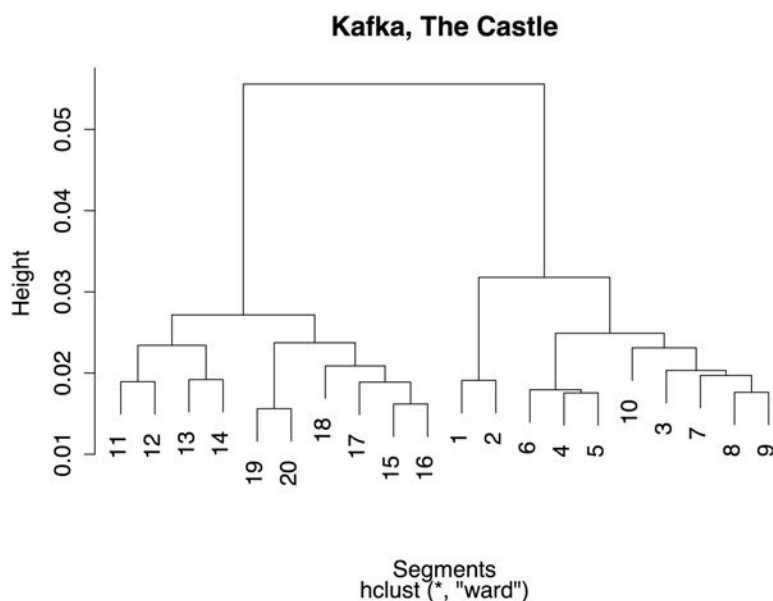


Fig. 9. A dendrogram of Kafka's *The Castle* using Ward's hierarchical clustering method showing the grouping of the novel's two halves into two separate branches. *The Castle* is one of only three novels in the German corpus in which the lexical partition between the clusters perfectly matches the division into two halves (with no second-half segments appearing in the first cluster and no first-half segments appearing in the second). One of the other novels is Scheerbart's *Lesâbendio*.

finities at first sight. What could the castle, as novel and object, convert us *toward*? Unlike Augustine's belief in his approach to God, one that opens up an entirely new world of language as well as knowledge of categories like time and eternity, K.'s belief in the approachability of the castle leads him ever further away and, it should be added, into a diminishing lexical world (like Fontane's and Sheerbart's novels, *The Castle* is marked by a strong narrowing of language). To say that Kafka's *Castle* is one of the most Augustinian and therefore most conversional novels of German literary history is thus to contend with a rather strange claim.⁴⁸

And yet the closer we look, the more we can see a kind of epigonal Augustinianism at work here, a point that to my knowledge has never been made in the scholarship. Of all the novels in the German corpus, Kafka's *Castle* is only one of three novels whose two halves overlap almost perfectly with the lexical clustering of its parts (Fig. 9). *The Castle* offers a rare instance of the ideal case in which a novel lexically partitions along its quantitative parts, suggesting a good deal of logic to the way Max Brod arranged the posthumous fragments.

Second, the novel is marked by a recognizable lexical orientation toward verticality, lending it a thinly veiled transcendental orientation—through the significant use of the prefix “auf” in statistically significant words such as *Auftrag*, *aufnehmen*, *Aufrecht*, *Aufmerksam*, *aufgeben*, *aufgeschoben*. But there are also clear symbolic resonances of Augustinian experience, as in the famous first telephone scene between the village and the castle:

From the ear-piece [*Hörmuschel*] came a buzzing sound [*ein Summen*], one that K. had never heard before when telephoning. It was as if numerous childish voices could be heard from the buzzing—but even the buzzing was not a buzzing, but rather a chorus of distant, the most distant voices—, as if from this buzzing a single, high yet strong voice coalesced in an improbable way, one that pulsed in the ear in such a way as to penetrate more deeply, if it so desired, past the poor auditory apparatus [*das armselige Gehör*].⁴⁹

The voices of the singing children that served as the prelude to Augustine’s conversion in the *Confessions* are here mediated in *The Castle* through the medium of the telephone (but also the metaphor of the *Muschel*, the shell that, when placed up to one’s ear, provides the illusion of distant communication, a buzzing that appears symbolically significant). The undifferentiable gender of the children in Augustine is doubled in the undifferentiable quantity of the voices in Kafka (“countless childish voices”), as the multiplicity of quantity replaces the binariness of gender. Similarly, the singing refrain in Augustine of the unheard-of nursery rhyme (that leads to the phrase, “take it and read, take it and read”) is repeated in Kafka through the transformation of the undifferentiable *Summen* (buzzing) into a *Gesang* (song). And finally, where the mediated presence of the divine in Augustine passes through childhood orality and then the adult book, in Kafka it is transmitted through a double impossibility: the telephonic song’s “impossible” formation into a single, high, strong voice that demands to penetrate deeper into the body of the listener than the “poor ear” can allow. Transgressing the senses in search of something deeper, in search of a subsensory knowledge, whether as the hum or the harrow, is a distinctly Kafkan concern. It turns Augustine’s reach outward and upward toward the divine in on itself.

Augustine’s conversional experience was grounded in the belief that a singular, transcendent voice might still reach us through the admixture of medium, chance, and will. It is arguably a template that reaches its ironic finality in Kafka. The voice(s) of the transcendental telephone might in fact just be noise—an illusion of the conchological earpiece, nature’s trick. We can still imagine such conversional reading experiences

according to Kafka, but what we experience is not their completion, but knowledge of their imaginariness. Kafka would be, according to these terms, Augustinian by negation, ushering us into a post-conversional world of reading. There's hope, just not for us.

Writing against much of the early reception of Kafka that saw theological aspirations in his work, Theodor W. Adorno spoke of Kafka's "inverse theology."⁵⁰ Not semantic plenitude in the Augustinian sense, the possibility of something higher or deeper, but literalness, the absolute constriction of meaning, was the secret of Kafka's significance. Focusing exclusively on the constrictions and claustrophobia of Kafka's prose, however, overlooks both the intensity and the type of movement that is imbedded within it. The Kafkan novelistic universe is one concerned principally with the world of work—one more addition to the master-signifiers of Nature, Outer-Space, and Marriage that seem to replace God in the conversional novel. The being of work, what Kafka calls *Arbeitersein*, is marked not as an absence of meaning, however—pure negativity as Adorno would have it—but instead as an experience of evacuation, as a form of regressive negation, one of pure movement collapsing in on itself.⁵¹ Instead of progressing, *The Castle* continually reenacts the telling of the characters' connectivity to each other, so that each subsequent narration of the novel's social universe is contained in the previous one. It does not circle back or open up, two of the possibilities of conversional narrative experience initiated by Augustine. Rather, it recapitulates.⁵² *The Castle* opens inward in an endless spiral. Like Zeno's paradox, the longer the novel gets, the harder it becomes to go anywhere. Instead of action, we have an extended account of what it means to experience the being of recursivity, an enfolding in on oneself. Movement without mobility is the paradoxical promise of reading's stasis according to Kafka. This is the devotional stance of the Kafkan universe, an endless attachment to constriction.

Hypothesis 4: Conversional novels are recursive. They recapitulate themselves as they progress, slowing themselves down as they expand internally. This is devotion as a form of imbrication (we cannot get out). Diegetic levels—narration within narration—should therefore increase over the course of the novel. There is also an aspect of social network analysis to this—the introduction of new characters retards rather than furthers narrative progression. Is there a correlation between the growth of characters, the growth of intradiegetic narration, and the slowing down of plot?

IV. Remodeling (Conclusion)

This essay has tried to give us a new way of thinking about the novel's significance as a genre, one that depends less on a form of critical estrangement and more on an experience of pronounced transformation. It has done so by significantly changing the scale of analysis: first, by exploring several hundred novels written in three different languages, and second, by examining linguistic shifts within these novels that exceed the scale of our traditional methods of close reading. Such large-scale linguistic shifts do indeed seem to serve as the lexical infrastructure upon which different kinds of narratives of conversion are grounded. Reading in this way, at such multivalent levels of scale, reveals to us a portrait of the novel that has so far eluded our own critical narratives. The novel, as well as a particular subset within it, appears to be oriented around strongly schismatic patterns, whether it be at the level of lexical change, semantic constriction, geographic opposition, thematic polarity, or even, as in the case of Kafka, narrative recapitulation. While the "conversional novel" has not traditionally belonged to literary history's received critical categories, both the computational model and the qualitative readings deployed here suggest that it should. However random their affiliation may appear at first glance—what do Heidi, Lesabéndio, White Fang, Impey Barbicane, Barnabas Thayer, Poil de carotte, and K. all have in common?—there is a coherence to these novels' interests that suggests not only a shared interest in the question of profound change, but one that seems to reflect deep Augustinian concerns. If nothing else, these novels should give us pause to reconsider Lukács's thesis that the novel is the primary genre that concerns "a world abandoned by God." Instead, we should now see more clearly the extent to which the novel is a genre designed to compel belief in both its language and form.

On a more theoretical level, this essay has also been concerned with addressing recent debates in the field surrounding models of distant versus close reading and the strong binary nature of our critical engagements today. I have tried to show how these two ways of reading can be integrated with one another in a more iterative process of "model-building," with each used to confirm and extend the insights of the other. In doing so, my aim has been to show the extent to which such computationally-assisted reading is itself conversional in nature, involving a circular, or perhaps spiral, process of perpetually nearing what is in the end an unreachable final goal ("The Novel") through an oscillatory process of both estrangement and attachment. Such methods, I want to suggest, will inevitably change our own devotional stances as readers, replacing the bibliographically inspired strong beliefs of either affirmation

or unmasking that have so marked our profession with experiences that will increasingly be defined by serial processes of more temporary commitments, ones that will involve both world-making and world-undoing in equal measure. Our beliefs about the novel will change not simply because of the new truths generated by this new technology, but because of the new ways our affections are mediated by new technologies. This is perhaps the third law of computational hermeneutics: technology impacts argument not solely through the new truths it produces, but also in the ways it changes our affective attachments to the texts that we read.

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NOTES

- 1 Hans Blumenberg, "Wirklichkeitsbegriff und Möglichkeit des Romans," *Nachahmung und Illusion*, ed. Hans Robert Jauss (Munich: Fink, 1969), 9–27.
- 2 Thomas Pavel nicely summarizes this position in his essay on the history of the novel: "By imposing a breach between characters and their surroundings, the novel is the first genre to reflect on the genesis of the individual and the establishment of a common morality." Thomas Pavel, "The Novel in Search of Itself: A Historical Morphology," *The Novel*, vol. 2, ed. Franco Moretti (Princeton, NJ: Princeton Univ. Press, 2006), 3. See also more recent interventions by practicing novelists that emphasize the novel's claims to realism, including novelists as different as Jonathan Franzen, "Why Bother?" *How To Be Alone: Essays* (New York: Picador, 2003), 55–98, and Orhan Pamuk, *The Naïve and Sentimental Novelist* (New York: Vintage, 2011).
- 3 See Deidre Shauna Lynch, *Loving Literature: A Cultural History* (Chicago: Univ. of Chicago Press, 2014); Rita Felski, "Enchantment," in *Uses of Literature* (Oxford: Blackwell, 2008), 51–76; Helen Deutsch, *Loving Dr. Johnson* (Chicago: Univ. of Chicago Press, 2005); and Rüdiger Campe, *Affekt und Ausdruck. Zur Umwandlung der literarischen Rede im 17. und 18. Jahrhundert* (Tübingen: Niemeyer, 1990).
- 4 Felski, "Context Stinks," *New Literary History* 42, no. 4 (2011); 582.
- 5 Georg Lukács, *Die Theorie des Romans* (Munich: Deutscher Taschenbuch Verlag, 1994), 51. All translations in this essay are my own unless otherwise noted.
- 6 On Augustine and the book, see Andrew Piper, "Take It and Read," *Book Was There: Reading in Electronic Times* (Chicago: Univ. of Chicago Press, 2012).
- 7 On the relationship between narrative and causation, see Gérard Genette, *Narrative Discourse: An Essay in Method* (Ithaca, NY: Cornell Univ. Press, 1980), 26, and Tzvetan Todorov, *Introduction to Poetics* (Minneapolis: Univ. of Minnesota Press, 1981), 41.
- 8 On Augustinian conversion, see Dong Young Kim, *Understanding Religious Conversion: The Case of Saint Augustine* (Eugene, OR: Pickwick Publications, 2012). Understood this way, conversional narration violates Greimas's theory of narrative equilibrium as the foundation of all narration. See A. J. Greimas, "Narrative Grammar," *MLN* 86 (1971): 793–806. On the function of narrative as marking difference, see Todorov, *Genres in Discourse* (Cambridge: Cambridge Univ. Press, 1990), 30. Conversion would thus be understood as the radicalization of narrative, not its undoing.
- 9 Franco Moretti, *The Bourgeois: Between History and Literature* (London: Verso, 2013), 81 (hereafter cited as *B*). On the novel and mediocrity, see Paul Fleming, *Exemplarity and Mediocrity: The Art of the Average from Bourgeois Tragedy to Realism* (Stanford, CA: Stanford Univ. Press, 2009).

10 Much of the research on conversion is invested in the study of a primarily religious phenomenon. For an overview of the field of conversion studies, see Karl Frederick Morrison, *Understanding Conversion* (Charlottesville: Univ. of Virginia Press, 1992) and Lewis R. Rambo, *Understanding Religious Conversion* (New Haven, CT: Yale Univ. Press, 1993). For recent work that thinks through conversion in broader cultural and psychological terms, see Matthew William Maguire, *The Conversion of Imagination: From Pascal through Rousseau to Tocqueville* (Cambridge, MA: Harvard Univ. Press, 2006) and Dana Anderson, *Identity's Strategy: Rhetorical Selves in Conversion* (Columbia: Univ. of South Carolina Press, 2007).

11 On history as genealogy in a Nietzschean vein, see Michel Foucault, "Nietzsche, Genealogy, History," in *Language, Counter-Memory, Practice*, ed. D. F. Bouchard (Ithaca, NY: Cornell Univ. Press, 1977), 139–64. On the relationship between affect and the study of transtemporal models of literary history, see Felski, "Enchantment," 51–76.

12 Foucault, "Nietzsche, Genealogy, History," 140.

13 The literature on scientific modeling is extensive but should serve as a key reference point for future work in the digital humanities. For an introduction, see Mary S. Morgan and Margaret Morrison, eds., *Models as Mediators: Perspectives on Natural and Social Science* (Cambridge: Cambridge University Press, 1999); Roman Frigg, "Models and Fiction," *Synthese* 172, no. 2 (2010): 251–68; and Matthew C. Hunter, "Experiment, Theory, Representation: Robert Hooke's Material Models," in *Beyond Mimesis and Convention: Representation in Art and Science*, ed. Frigg and Hunter (New York: Springer, 2010), 97–138.

14 A full list of the data sets can be found here: http://txtlab.org/?page_id=369.

15 Edith Turner and Victor Turner, *Image and Pilgrimage in Christian Culture* (New York: Columbia Univ. Press, 1978).

16 Felski, "Suspicious Minds," *Poetics Today* 32, no. 2 (2011): 215–34.

17 For a broader inquiry into thinking about texts in this way, see Piper, "Reading's Re-frain: From Bibliography to Topology," in "Reading," ed. Joseph Slaughter, special issue, *ELH* 80, no. 2 (2013): 373–99.

18 Traditional models of intertextuality either work at the level of just a few texts based on linguistically complex associations or many texts based on very simple associations such as the single citation or keyword. Vector-space models allow for the association of many texts through many words. The understanding of the extent to which such models fit within or significantly depart from the history of literary theories of intertextuality is still an open question and one urgently in need of further research.

19 The process was performed using the TM package in R. I removed stopwords and used a Euclidean distance measure. For more, see Ingo Feinerer and Kurt Hornik, "tm: Text Mining Package. R package version 0.5–9.1 (2013): <http://CRAN.R-project.org/package=tm> and Feinerer, Hornik, and David Meyer, "Text Mining Infrastructure in R," *Journal of Statistical Software* 25, no. 5 (2008): 1–54.

20 For an introduction on MDS, see Ingwer Borg, Patrick J.F. Groenen, and Patrick Mair, *Applied Multidimensional Scaling* (Berlin: Springer, 2013).

21 Foucault, *The Archaeology of Knowledge* (New York: Pantheon, 1972), 55. Exactly how to translate these computational approaches into the language of literary analysis is a problem in its own right, worthy of further exploration. There is much to be understood as to the exact nature of these multidimensional configurations of language and how they relate to our existing analytical frameworks.

22 I am aware of the debates surrounding the integrity of Augustine's work, specifically whether books 10–13 should be considered a "supplement" to the pre-conversional books or an integral part of the whole. The critical uncertainty that surrounds the unity of the *Confessions* is in many ways a reflection of precisely this aspect of discursive heterogeneity that belongs to the narrative of conversion and that the multidimensional modeling brings out. More importantly for my purposes, the work has also *historically* only ever been

mediated to readers as a whole. As James O'Donnell writes in his extensive commentary, "There is no evidence that the work ever circulated in a form other than the one we have." See O'Donnell, *The Confessions of Augustine: An Electronic Edition* (1992): <http://www.stoa.org/hippo/comm.html>. According to a scribal and printed tradition of reproduction, then, the *Confessions* is most often reproduced as a unity and thus historically understood as such. For debates on the integrity of the text, see in particular J. J. O'Meara, *The Young Augustine* (London, 1954) and Pierre Courcelle, *Les Confessions de Saint Augustin dans la tradition littéraire* (Paris, 1963).

23 O'Donnell, *The Confessions of Augustine: An Electronic Edition* (1992): <http://www.stoa.org/hippo/comm10.html#CB10C1S1>.

24 The first step was to divide each novel into twenty equal parts. Rather than rely on the irregularity of chapter divisions, which can vary within and between works, this process creates standard units of analysis. Using the TM package in R, I then created document term matrices for each work with the word counts scaled according to the length of the work. The words were thus normalized according to their relative importance within the work. I removed stop words and only kept those words that appeared in at least sixty percent of the documents (twelve of the twenty parts). My question was: how does a vocabulary that runs throughout the majority of a work change over the course of that work? I then calculated the Euclidean distance between each of the twenty parts of the work based on the frequency of the remaining words and stored those results in a symmetrical distance table. In the end, for each work I had a 20x20 table of distances between every part of a work to every other, in which the distances are considered to be measures of the similarity of the language between a work's individual parts. To calculate my two scores, for the in-half distance I took the average distance of each part in the first half of a work to every other part in that half and subtracted it from the average distance of every part of the second half to itself. For the cross-half distance, I took the average distance between all of the first ten parts of a work to all of the second ten parts of a work similar to the process used in group average clustering.

So if D represents a distance table of $n \times n$ dimensions and D_{ij} represents the table at row i and column j , then the in-half distance would be:

$$\frac{\sum_{i=1}^{\frac{n}{2}-1} \sum_{j=i+1}^{\frac{n}{2}} D_{ij} - \sum_{i=\frac{n}{2}+1}^{n-1} \sum_{j=i+1}^n D_{ij}}{\frac{n * (n-1)}{2}}$$

and the cross-half distance:

$$\frac{\sum_{i=1}^{\frac{n}{2}} \sum_{j=\frac{n}{2}+1}^n D_{ij}}{\left(\frac{n}{2}\right)^2}$$

The model is designed to test whether the text is shaped *overall* by a large-scale shift of language that indicates a more binary structure (rather than identify the exact point of this shift). An alternative method could compare the variance within the groups rather than measure average distances between points. The important point is not the perfection of the quantitative method, but rather whether a particular approach captures novels that do indeed reveal a thematic relationship to conversion. This depends on the next step of validation-discovery.

25 Augustine’s scores were the following: cross-half = 0.021597377, z-score = 2.5899149785, in-half = 0.0067916874, z-score = 5.162108633. The usual cut-off for testing statistical significance is 1.96 standard deviations from the mean. These scores are particularly significant given the cross-half score’s sensitivity to length (see next note), as Augustine’s text is in the third of five overall length groups.

26 The following are the results based on comparing the novels with autobiographies. I have included the results of both a t.test and wilcoxon rank sum test, which corrects for non-normal distributions within the data. Both results fall below the usual cut-off of $p < 0.05$.

CrossHalf	Novel Mean	Autobiography Mean	p-value (t.test)	p-value (wilcoxon)
	0.013847732	0.009992367	2.2e-16	2.2e-16
InHalf	Novel Mean	Autobiography Mean	p-value (t.test)	p-value (wilcoxon)
	0.001141110	0.000797757	4.03e-05	0.0003017

Neither language, nor gender, nor point of view (first person versus third person narratives) was a factor in determining the results (based on an analysis of variance test, the results of which are not shown here). Length, however, was determined to be a factor in the cross-half measure but not in the in-half measure. Longer works have a significantly lower chance of scoring higher on this particular score. In general, the results are sensitive to length, with the chances of high scorers either being shorter novels or at least not long novels.

27 These findings should give us pause before too readily accepting some of the truisms of research into autobiography as a genre that exists to mark change. As Carolyn A. Barros writes: “Autobiography is about change; it narrates a series of transformations. This is an expectation we bring to any autobiographical text.” Carolyn A. Barros, *Autobiography: Narrative of Transformation* (Ann Arbor: Univ. of Michigan Press, 1998), 1. James Olney makes a similar claim in his book on autobiography and memory from Augustine to Rousseau, *Memory and Narrative: The Weave of Life-Writing* (Chicago: Univ. of Chicago Press, 1998).

28 A silhouette test measures the average distance between any given point and all other points in a given cluster for all possible cluster sizes and compares this to its relationship to all points of all other given clusters. In the ideal scenario, each point is closest to its cluster neighbors and furthest from all those of another cluster. The results for this test were derived using the pam() function in R. For further reading, see P. J. Rousseeuw, “Silhouettes: A Graphical Aid to the Interpretation and Validation of Cluster Analysis,” *Journal of Computational Applied Mathematics* 20 (1987): 53–65.

29 The following are the results based on comparing the novels with non-narrative texts:

CrossHalf	Novel Mean	NonNarr Mean	p-value (t.test)	p-value (wilcoxon)
	0.013847732	0.01458604	0.158	0.2824
InHalf	Novel Mean	NonNarr Mean	p-value (t.test)	p-value (wilcoxon)
	0.001141110	0.002164255	0.0003465	2.572e-05

30 Gustave Flaubert, *Smar. Vieux mystère. Oeuvres complètes*, ed. Claudine Gothot-Mersch and Guy Sagnes (Paris: Gallimard, 2013), 1:548, 559.

31 F. Scott Fitzgerald, *This Side of Paradise* (New York: Scribner, 1920), 215.

32 As Bettina Hurrelmann writes, “A religious orientation imprints her entire work, whether it is her writings for children or adults.” Hurrelman, “Mignons erlöste Schwester: Johanna Spyris Heidi.” *Klassiker der Kinder- und Jugendliteratur*, ed. Hurrelmann (Frankfurt/Main: Fischer, 1995), 192. See also Regine Schindler, “Form und Funktion religiöser Elemente in Johanna Spyris Werken,” *Nebenan: Der Anteil der Schweiz an der deutschsprachigen Kinder- und Jugendliteratur* (Zürich: Chronos, 1999), 173–99.

33 Hurrelmann makes much of the connection to Goethe, but it should be noted that the *Wilhelm Meister* novels score middle to low on both tests (137/140 on the cross-half

score and 57/76 on the in-half score). This is an indication of the way an imitation can assume stronger features than its archetype.

34 To create my dictionary, which was only undertaken with the German collection, I derived a set of words taken from the conversion scene of the *Confessions* in Book 8.12 and kept only those words that were consistently present in a sample of five translations into German from the eighteenth century to the mid-twentieth, a time frame which mirrored that of my primary corpuses. The word set I used thus consisted of the forty-six words that are used without exception when translating Augustine's conversion into German over two centuries. Interestingly, novels scored on average higher on this test as well, and seven of the top ten novels were written by women, suggesting there may be a correlation between women novelists and a lexicon of conversion.

35 Comparing the vocabularies between the novels and autobiographies yielded the following: autobiography mean = 0.01435336, novel mean = 0.01661757, p-value = 6.628e-13. A linear regression model yielded the following results: an adjusted R-squared value of 0.03762 and a p-value on the slope of 0.00992.

36 Using an analysis of variance test, the F-statistic was 4.589 with a p-value of 0.0338. In addition, seven of the top ten scoring novels were by women.

37 I calculate this by producing a z-score for each word in the novel that also appears in at least sixty percent of the novels (for a total of 3141 words) and then sorting from the highest to lowest. The idea is to look for those words that are common to novels but have an uncommonly high usage within a single novel.

38 Johanna Spyri, *Heidis Lehr- und Wanderjahre* (Zürich: Diogenes, 2000), 154.

39 Augustine, *Confessions*, trans. R. S. Pine-Coffin (New York: Penguin, 1961), 177. This translation has been modified from the original.

40 Jack London, *The Call of the Wild, White Fang, and To Build a Fire* (New York: The Modern Library, 1998), 169 (hereafter cited as *WF*).

41 Wolfgang Braunart, Gotthart Fuchs, Manfred Koch, *Ästhetische und religiöse Erfahrungen der Jahrhundertwende, II: Um 1900* (Munich; Schöning, 1998).

42 Paul Scheerbart, *Lesäbendio. Ein Asteroiden-Roman* (Hamburg: tredition, 2006), 86 (hereafter cited as *L*).

43 Mary Wilkins Freeman, *Pembroke* (New York: Bibliobazaar, 2007), 7 (hereafter cited as *P*).

44 Theodor Fontane, *Irrungen, Wirrungen* (Stuttgart: Suhrkamp, 2006), 101 (hereafter cited as *IW*).

45 On the novel's polyphony, see Ingrid Mittenzwei, *Die Sprache als Thema: Untersuchungen zu Fontanes Gesellschaftsromanen* (Bad Homburg: Gehlen, 1970); Horst Schmidt-Brümmer, *Formen des perspektivischen Erzählens: Fontanes Irrungen, Wirrungen* (Munich: Fink, 1971); Norbert Mecklenburg, *Theodor Fontane: Romankunst der Vielstimmigkeit* (Frankfurt/Main: Suhrkamp, 1998); and most recently Gerhard Neumann, *Theodor Fontane: Romankunst als Gespräch* (Freiburg: Rombach, 2011).

46 Jonathan Crary, *Suspensions of Perception: Attention, Spectacle, and Modern Culture* (Cambridge, MA: MIT Press, 1999).

47 Central to such conversionality in Kafka is a basic binary structure underlying many of his fictions that we've seen strongly on display in the other novels from this section. On the binariness of Kafka's spaces, see Manuela Günter, "Tierische T/Räume. Zu Kafkas Heterotopien," in *Raumkonstruktionen in der Moderne. Kultur-Literatur-Film*, ed. Sigrid Lange (Bielefeld: Aesthesis, 2001), 49-74.

48 The edition of Kafka's *Schloß* that corresponds to my data set is Franz Kafka, *Das Schloß* (Frankfurt/Main: Fischer, 1967). Given the high degree of debate around the authorial intentions surrounding Kafka's edition, my aim here is not to enter into those debates but to engage with the Kafka text that has circulated as the most prominent reader's text.

Further support for use of this edition can be found in the hierarchical clustering analysis discussed in this essay, which shows that *The Castle* is one of only three novels in the German corpus in which the clustering into two halves matches the sequential arrangement of its parts.

49 Kafka, *Das Schloß*, 32.

50 Theodor W. Adorno, "Aufzeichnungen zu Kafka," in *Gesammelte Schriften*, ed. Rolf Tiedemann (Darmstadt, 1998), 1:254–87.

51 This is also to mark a distinction from a range of scholarship that emphasizes mediation and *Verkehr* as two key concerns of Kafka's fiction. It is not a particular medium or even mediality that matters to Kafka, but the evacuation of substantiality in the endless recursivity made possible by such modern systems. For the two strongest readings of Kafka's mediality, see Wolf Kittler and Neumann, eds., *Franz Kafka: Schriftverkehr* (Freiburg: Rombach, 1990) and Stanley Corngold and Benno Wagner, *Franz Kafka: The Ghosts in the Machine* (Evanston, IL: Northwestern Univ. Press, 2011), 109–132.

52 See Stanley Corngold, "Kafka's Double Helix," *Franz Kafka: The Necessity of Form* (Ithaca, NY: Cornell Univ. Press, 1988), 134.