The Wertherian Exotext:
Topologies of Transnational Literary Circulation in the Long Eighteenth Century

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i. Preamble

My current project seeks to develop new ways of understanding the relationship between the novel and eighteenth-century writing by focusing on one of the most popular novels of the period, Goethe's *The Sorrows of Young Werther* (1774/1787). With the steep rise of printed writing in the eighteenth century, epistolary novels like Goethe's *Werther,* Richardson's *Pamela*, or Rousseau's *Julie* became landmarks of the new vibrancy of the publishing industry. They were some of the most persuasive signs of an emerging commercial literary modernity.[1] As a fictional network of texts, the epistolary novel came to stand for a new culture of literary connectivity.

There has been a good deal of bibliographic research on the nature of such publishing events and the numerous adaptations that arose from these singularly productive works.[2] At the same time, there are a number of studies that engage at a more intimate interpretive level with particular adaptations or particular categories of adaptations, although in the case of *Werther* such studies are fewer than you might think.[3] These studies have much to tell us about some of the aspects of *Werther* that were of interest to some eighteenth-century readers and writers. But if *Werther* was indeed a "syndrome," in Klaus Scherpe's words, of an emerging bourgeois society, I want to know more about the reach of the text's pathos. How far did a work like *Werther* penetrate into the published writing of the period? How much of an "effect" did it have beyond the works that were nominally indebted to it? Where did *Werther* go and what did it do?

To that end I have over the past two years been working with my collaborator Mark Algee-Hewitt to create topological models for visualizing lexical relationality among literary works. While the term topology covers a variety of fields that extend from graph theory to the mathematics of continuous spaces to thinking about "topos" or space more generally, we are using it as a means of modeling linguistic patterns to understand the spatial relationality of literature.[4] We are interested in the extent to which the *language* of a particular work or concept -- in this case the novel *Werther* -- circulates within a given environment and structures a given literary field. Rather than look at only those works that claim to be Wertherian, we are interested in mapping *Werther*'s discursive presence in a more diffuse, less explicit sense. If *Werther* is, as Robyn Schiffman has recently provocatively claimed, a *broken* epistolary novel, we are interested in how it motivates an alternative understanding of circulation beyond the more linear epistolary model of sender and receiver.[5]

Few works were more marked by a mimetic relationship to reproduction than Goethe's *Werther*. Not only was it a powerful generator of translations, adaptations, and imitations, moving across cultural boundaries with an unprecedented rapidity. It was also infamous for the affective and imitative responses on the part of readers.[6] The Werther Effect has entered into the scientific literature as a sign of the mimetic potential of media – that what we read or see makes us do the things that we read or see. We want to turn this notion of the Werther Effect on its head to think about circulation in what we might call post-mimetic terms. Goethe famously said he only ever read Werther once more in his life after writing it (see the quotation in the epigraph). It was, he said, "uncanny." According to this self-narrative, Werther was a youthful work that, as for so many

authors, had to be disavowed to be able to continue writing. By contrast, we want to take seriously this understanding of the *Unheimlichkeit* of *Werther* and ask instead: in what ways is Goethe's writing, or writing in the eighteenth-century more generally, uncannily Wertherian? How might we understand the Werther Effect not as a mimetic model of linguistic correlation, but instead as a sign of the uncanniness of discourse, as a form of what Tony Sampson has recently called the mapping of "desire events"?[7] As I will come back to at the close of my paper, what I'm after is a new addition to Gerard Genette's five-part schema of transtextuality: what I'm calling the Wertherian exotext.

ii. Methods

The initial data set we used was the digitized corpus of Goethe's collected works from Chadwyck and Healey. We then created a feature set that we felt was representative of Werther, which for our purposes consisted of the ninety-one most frequent non-stemmed words drawn from the novel minus stop words.[8] From this list, we then used a so-called vector space model in which we generated a table of distances between every work in Goethe's corpus to every other work (**slide**). The distance between any two works is based on plotting the works in as many dimensions as there are variables (in our case 91 dimensions) and then calculating the Euclidean distance between them (there are numerous other ways we have calculated the distance). "Distance" is thus a measure of the similarity (technically dissimilarity) of the lexical presence of Wertherian words between any two works. The more two works share similar levels of presence of a greater number of words from our set, the closer they will be drawn to one another.

The next step in the process involves translating these distance measures into a network graph so that the nodes of the graph are equal to works and the edges represent the distances between the works. As a way of reducing noise, we select edges by taking the natural log of the total number of works so that you have a fixed number of outgoing edges but an unlimited number coming in. Then we identify communities of texts within the graph using Mark's development of the voronoi diagram, a process which essentially translates a network graph into a planar representation of polygons (**slide**) and finds those works that are most geometrically proximate to each other. We then iterate this process for any given cluster by dividing the selected works up into "pages" (**slide**), rerunning the model, and locating the strongest fifty-page clusters. The resulting topologies are akin to throwing the pages of ten different works up in the air and watching them fall onto a floor that has been magnetized to pull those pages closest to each other depending on the correlation within them of Wertherian words. What we're looking for is not *correlation* to Werther – that is, which texts are most Wertherian – but instead a *social affinity* based on Wertherity – *how much you are like someone else based on a set of criteria that is not intrinsic to you*. This is the world according to Werther, something the deeply narcissistic Werther would likely have appreciated. The final step is to go in and **read** those pages to identify the significance of their attraction to one another. This is a method that is thus designed to operate at multiple levels of scale – from the macro level of large corpora of texts to the micro-level of the page view. It is a form of what I have elsewhere called "scalar reading,"[9] to move us past polarizing binaries like "close/distant" or "surface/depth" and into thinking about the implications of scale on textual meaning.

[You can see the results of this project here: http://piperlab.mcgill.ca/pdfs/ WertherEffect1.pdf (**slide**)]

I have since replicated this process with the help of my colleagues in the Network Dynamics lab here at McGill on three different corpuses of considerably larger size that are all drawn from the hathi trust: these consist of all texts in the trust from three different languages – German, English and French – between the years 1774, Werther's initial publication date, and 1832, the year of Goethe's death. The first significant difference between this and the earlier project is pretty obviously that of scale (**slide**) – the sizes of the different corpora are 11,240,14,200, and 24,895 respectively. This means we end up with, in the case of the French corpus, over 300 million pairwise combinations (=$(n^2 - n) /$ 2). Handling data of such scale was not trivial and required a lot of help. This is something the think about. Second, I started working in different languages. This was actually pretty easy to solve: I used Werther words derived from historically contemporary translations into either French or English. Next, instead of top Werther words in the Goethe corpus I used those Werther words that were statistically significant in comparison to a control corpus of novels (**slide 3x**). It made sense to me to have a tighter setting on Wertherity when looking for its presence in such a heterogeneous group of texts (and a looser setting when looking for it in a more homogenous authorial corpus). And instead of taking the log of the number of works, we used a threshold of 1 percent – this we found is akin to limiting connections to statistically significant distances but also creates a denser graph. Last, instead of the visualization technique used on the Goethe corpus, because of the considerably larger size of the data we used a community detection algorithm to identify the "communities" of texts within the network, where a

community is defined by a group of texts that have significantly more in-group connections than out-group (**slide**). The algorithm we used was the leading eigenvector method developed by Mark Newmann at the University of Michigan, which is a form of spectral partitioning.[10] So to come back to my initial question: what does the Wertherian exotext look like?

iii. Findings

Here is a summary of the communities located in the three different linguistic corpuses (**slide**). What you can see initially are a few salient features across the corpuses: first, the relatively consistent number of communities; second, the relatively similar distribution of the sizes of the communities; and finally, some analogous topical material: communities of literary periodicals, ecclesiastical writings, natural history, travel, medicine and science, and then usually one or two literary communities. At this point there are two different directions I feel like I could go here. One is to analyze these larger networks in comparison either to each other or to "standard graph" of the period and look at those features that are unique to this graph. For example, I compared whether the community structure in my feature-set graphs looked more or less similar to a graph generated from vocabulary common to the entire period. This is decidedly not the case: for the English corpus, for example, the feature-set graph contains 25% of redundant information to the standard graph and using Kendall's tau to compare ranked lists, I found zero overlap in the top ten works ranked by degree centrality for each community. I can confidently say that these communities are an effect of the feature set and not something that happens just by chance.

While it would be possible to go on in this direction [insert example], I think my larger concern is not with the macro-analytical category of the "period", but with the mid-level scale of the "community." While I do believe these graphs capture a kind of lexical exoskeleton of Wertherity – or to mix metaphors, a somnambulistic latency of Wertherian desire in the long eighteenth century – I'm interested in the more specific literary genre work that Werther's uncanniness might be capable of producing.

So the next step in my process is to go in and isolate by individual community and repartition by subcommunity. I will use by way of example Community 4 from the English corpus (**slide**). As you can see, there are six subcommunities within community 4 (**slide**), and what's interesting about them, if we look at the leading nodes in their respective subgraphs, is the way they capture different aspects of Wertherity (**slide**): the affective biography (4:1, Samuel Johnson); the genealogy of Werther (4.2, 4.3, Goldsmith, Sterne, Smollett, and Cervantes); the always present lyrical qualities of Werther (4.5, works of english poets); and finally, the affective afterlife of Werther in the genres of the national tale and the sentimental tale (4.4, 4.6; yellow, navy). It's these two subcommunities that I want to focus on going forward (**slide**) and again I see two possible avenues of approach, which in the interests of time, I'm going to summarize here and then move to some concluding remarks.

A. Discursive Identity: using a variety of approaches that could include identifying 1 grams, 2 grams, or topic modeling, we could try to identify the discursive features of these subcommunities – what does a Wertherian vocabulary turn *into*? To what manifest discourse is Wertherity a latent discourse?

B. Top Pages: as with the Goethe topologies, we could identify the top pages drawn

 from the leading works in these subgraphs and read those or do time-series graphs of

 the places within the narratives that have the most/least intense Wertherity. I've

 started this process (**slide4x**) and what you find in those top pages is a lot of scenes of

 kneeling, crying, and dying: "It seemed a night of danger, despair and death," or "It

 was no ocular delusion, nothing spectral, but horror looking out through breathing

 flesh and blood, in the persons of Mrs. Beauchamp and her niece."

  This is as it should be. What interests me, though, and here I think I'm working

my way towards a thesis, is how these scenes are qualitatively different from Werther,

specifically, the way the affective discourse of Werther seems increasingly to revolve

around questions of the commodification of desire. Whether it's Mr. Dudleigh's financial

ruin in Affecting Scenes: Passages from the Diary of a Physician (1831), or Adelaide's

financial fate in Catherine Ward's The Forest Girl (1826), or Catherine Shirley's story of

property restored in Opie's Valentine's Eve (1816), there is a nexus of commodity, desire

and person that seems to run through these works and that gets an interesting valence in

the presence of national tales like "Elizabeth de Bruce" by Isobel Johnston, where

possession, property and national identity are inflected by the triangulation of

commodified desire. In what ways is Scottish nationalism replaying the sentimental

tropes of the eighteenth-century? So where the Wertherian mimetic triangle looked

something like this (**slide**), the exo-Wertherian triangle we might say looks more like this

(**slide**), inserting commodity, property or nation in the place of Albert and, I'm guessing

here, opening the door to a far more heterogenous model, where triangularity gets

refracted into multiple social directions (**slide**).

iv. Discussion

The value of thinking topologically about textual relations is, I would argue, the way it allows us to rethink our inherited critical models of literary circulation, from D.F. McKenzie's notion of social text to Kristeva's idea of intertext.[11] In particular, this project is aimed at adding a new category to Genette's five-part model of transtextuality(**slide**), what I am calling here the exotext (**slide**). The exotext is important to me for three reasons. First, there is an inherent sociality to it, what Deleuze would call an ethology of reading. Rather than use a context to explain a text, or a text to explain a wider context, there is a mutuality or a circularity to their interpretation – text and context mutually co-construct one another. A contingent text (the "feature set" or what we could call the "model") brings into view a contingent discursive environment, which is then, in recursive fashion, used to interpret that text. Reading topologically doesn't move us, in Bruno Latour's terms, from a space of alienation to one of enlightenment (think here of Augustine's bibliographic conversion: "as I came to the end of the sentence, it was as though the light of confidence flooded into my heart and all the darkness of doubt was dispelled").[12] Rather, topology moves us from a space of bibliographic intimacy to what Deleuze would call one of topological *implication*.

Second, the exotext puts us in a critical relationship with the notion of the "vector," what Deleuze and Guattari would call in *A Thousand Plateaus* an "assemblage converter."[13] Thinking about language in vectoral terms trains us to pay attention to language's *instructional* function, understood not simply as a vehicle of signification (what it says), but also in more agential terms (what it *does*). In a topology, language is understood, in Kathleen Carley's terms, as a medium of "conductivity," as a force that

acts on a field.[14] Topology trains us to read *protocologically*, to identify the literary rules or protocols that help govern the structures of discursive regularity.[15]

Lastly, what interests me about the notion of the exotext is the way it inscribes difference within models of literary relationality. It treats difference not as likeness's opposite, but instead as its condition of possibility. As Genette writes, "We cannot vary without repeating nor repeat without varying."[16] The aim of the exotext is not to maximize correlation – to say with predictive degrees of certainty that these texts are most like Werther, are Wertherian in an emphatic or even intentional sense. Rather, what interests me is the way they are assembled together in their partial Wertherity, in their refunctionalization of Wertherity that is absent a basic intentionality. The texts brought together in the network communities I've discussed here are like each other according to a certain kind of Wertherity, one that is different if we move to other communities. They are different from each other in how they are like each other according to a particular set of criteria (here again the highly contingent idea of Wertherity). According to such topological thinking, there is not a singularity out there called *Werther*, but rather different kinds of Wertherities that allow different kinds of literary arguments and communities to take shape.[17] But those arguments are significantly not signs of individual expression, but rather collective in nature, supra-individual assemblages of discursive regularity. They are, to bring us back to Goethe's initial intimation about the so-called Werther Effect, indications of the uncanniness of discourse, the way words recur absent a fundamental human agency and in so doing participate in the generation of fluid social assemblages.

[1] Ina Ferris and Paul Keen, eds., *Bookish Histories: Books, Literature, and Commercial Modernity* (Basingstoke: Palgrave, 2009).

[2] Karl Robert Mandelkow, ed., *Goethe im Urteil seiner Kritiker: Dokumente zur Wirkungsgeschichte Goethes in Deutschland. Teil I: 1773-1832* (Munich: C. H. Beck, 1975); Georg Jäger, *Die Leiden des alten und neuen Werther: Kommentare, Abbildungen, Materialien zu Goethes 'Die Leiden des jungen Werthers' und Plenzdorfs 'Neuen Leiden des jungen W.'* (Munich: Hanser, 1984); Ingrid Engel, *Werther und die Wertheriaden: Ein Beitrag zur Wirkungsgeschichte* (St. Ingbert: Röhrig, 1986); Bruce Duncan, *Werther and its Critics* (Rochester, NY: Camden House, 2005); Thomas Keymer and Peter Sabor, eds., *The Pamela Controversy: Criticisms and Adaptations of Samuel Richardson's* Pamela*, 1740-1750*, 6 vols. (London: Pickering and Chatto, 2001); and Daniel Mornet, *Le texte de la Nouvelle Héloïse et les éditions du XVIIIe siècle* (Geneva: Julien, 1910).

[3] Stuart Atkins, *The Testament of Werther in Poetry in Drama* (Cambridge, MA: Harvard UP, 1949); Klaus Scherpe, *Werther und Wertherwirkung: Zum Syndrom bürgerlicher Gesellschaftsordnung im 18. Jahrhundert* (Bad Homburg: Gehlen, 1970); Martin Andree, *Wenn Texte töten: Über Werther, Medienwirkung und Mediengewalt* (Munich: Fink, 2006); Karin Vorderstammen, *"Ausgelitten hast Du -- ausgerungen." Lyrische Wertheriaden im 18. und 19. Jahrhundert* (Heidelberg: Winter, 2007); Steffen Martus, "Johann Wolfgang Goethes *Die Leiden des jungen Werthers* als Medienskandal," in *Literaturskandale*, ed. Hans-Edwin Friedrich (Frankfurt am Main: Lang, 2009), 29-43.

[4] For a detailed history of the meaning of topology, see I. M. James, ed., *History of Topology* (Amsterdam: Elsevier, 1999).

⁵ Robyn L. Schiffman, "Werther and the Epistolary Novel," *European Romantic Review* 19, no. 4 (2008): 421-38. See also Hans Rudolf Vaget's reading of Werther as "undead." Hans Rudolf Vaget, "Werther, the Undead," *Goethe Yearbook* 12 (2004): 17-29.

⁶ Cf. Wenn Texte Töten.

⁷ Tony D. Sampson, Virality.

⁸ We used ninety-one because it roughly maintains a three-to-one ratio between words and works, which allows us to search for similarities between works without overfitting for their differences. We removed stop words (such as *der*, *die*, *das*, *und*, etc.), because they are usually semantically poor and yet stylistically rich, not to mention quantitatively overwhelming. Finally, we did not lemmatize our corpus because we chose to retain some of the grammatical information encoded in single words (such as tense, mood, case, and number). We are not looking at purely lexical phenomena but at words that are imbedded within specific syntactical functions.

⁹ "Reading's Refrain: From Bibliography to Topology." *ELH*. 80.2 Special Issue on "Reading." Ed. Joseph Slaughter (Summer 2013): 373-399.

¹⁰ MEJ Newman: http://www.pnas.org/content/103/23/8577.full

¹¹ D.F. McKenzie, *Bibliography and the Sociology of Texts* (Cambridge: Cambridge UP, 1999); Jerome McGann, "From Text to Work: Digital Tools and the Emergence of the Social Text," *Romanticism on the Net*, no. 41-42 (February-May 2006): http://id.erudit.org/iderudit/013153ar; Gérard Genette, *Palimpsests: Literature in the Second Degree*, trans. Channa Newman and Claude Doubinsky (Lincoln: U of Nebraska P, 1997); Julia Kristeva, "Word, Dialogue, Novel," in *The Kristeva Reader*, ed. Toril Moi

(New York: Columbia UP, 1986); and Harold Bloom, *The Anxiety of Influence: A Theory of Poetry* (Oxford: Oxford UP, 1997). On intertextuality and *Werther*, see in particular Arnd Bohm, "'Klopstock!' once more: Intertextuality in *Werther*," *Seminar* 38, no. 2 (2002): 116-33 and Ehrhard Bahr, "Unerschlossene Intertextualität: Macpherson's 'Ossian' and Goethe's 'Werther,'" *Goethe-Jahrbuch* 124 (2007): 178-88.

[12] Bruno Latour, *On the Modern Cult of the Factish Gods*, trans. Catherine Porter (Durham: Duke UP, 2010) 61.

[13] Deleuze/Guattari, A Thousand Plateaus 325.

[14] Seen Kathleen M. Carley and David S. Kaufer, "Semantic Connectivity: An Approach for Analyzing Symbols in Semantic Networks," *Communication Theory* 3.3 (1993): 183-213.

[15] Eugene Thacker and Alexander Galloway, *The Exploit: A Theory of Networks* (Minneapolis: Minnesota UP, 2007). Deleuze/Guattari, A Thousand Plateaus 79.

[16] Genette, "The Other of the Same," 103.

[17] An important aspect of the "Werther Effect" is the way Werther is himself already an "effect" -- an outcome of a new kind of reading culture. The question for our larger project is how we might measure the Werther Effect in these terms -- how the novel is both generative of new literary forms and generated by prior ones. Is the Werther Effect a measure of something deeply novel called *Werther* or is it more of a reverberation of a prior set of literary and linguistic effects? For a discussion of the changing nature of literary reception during this period, see Hans Vaget's emphasis on "Werther als Leser," in *Goethes Erzählwerk: Interpretationen*, ed. Paul Michael Lützeler und James E. McLeod (Stuttgart: Reclam, 1984), 37-72, and more recently, Katja

Mellmann, "Das Buch als Freund -- Der Freund als Zeugnis: Zur Entstehung eines neuen Paradigmas für Literaturrezeption und persönliche Beziehungen, mit einer Hypothese zur Erstrezeption von Goethes 'Werther,'" in *Bürgerlichkeit im 18. Jahrhundert*, ed. Hans Edwin Friedrich et al. (Tübingen: Max Niemyer, 2006), 201-40.