Dimensions of Scale: Invisible Labor, Editorial Work, and the Future of Quantitative Literary Studies

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THIS ESSAY, WHICH CONSIDERS THE CURRENT USE AND FUTURE POtential of quantitative methods in literary studies, is set in an unexpected place: the Canadian town of Windsor, located just across the river from Detroit, at what was then—in the spring of 1853, when this account begins—the terminus of Canada's Great Western Railway.[1] Windsor was also, then, the adoptive home of the abolitionist and educator Mary Ann Shadd (1823–93), who had emigrated there eighteen months earlier, from Delaware via New York, with the intention of opening a school.[2] Shadd opened her school shortly after her arrival in Windsor, but near-constant financial strain, coupled with the complex politics that surrounded her educational vision—she insisted on teaching black and white children together—proved too much to bear. And so on 23 March 1853, Shadd made the difficult decision to shutter the school. The very next day, she published the first issue of her newspaper, the *Provincial Freeman*. In so doing, she earned distinction—and, more recently, coverage in *The New York Times*—as the first black woman to edit a newspaper in North America (Specia).

But Shadd herself did not take credit for this achievement—at least for several years.[3] The inaugural issue of the *Freeman* listed Samuel Ringgold Ward, a more prominent black abolitionist, as well an orator and a minister, as its editor. (Ward was also, crucially, a man.) Astute readers would have taken note of an anonymous apology also printed in the issue, likely authored by Shadd, which explained: "As Mr. Ward is obliged to perform other labors for a livelihood, it is impossible for him to give the attention to the paper that he would were his pecuniary interests connected to it" ("Apology"). But the only textual indication that Shadd was "the real power behind the newspaper," as her biographer Jane Rhodes explains, was a short sentence printed under the masthead: "Letters must be addressed,

Post-paid, to Mary A. Shadd, Windsor, Canada West" (74).

In this way, Shadd's editorial work exemplifies what is often called invisible labor, a term that has come to encompass the various forms of labor that are literally invisible because they take place out of sight, or economically invisible because they take place away from the marketplace.[4] As several generations of feminist labor studies scholars have observed, it is both a cause and an effect of this invisibility that these forms of labor are undervalued and undercredited (or uncredited altogether) in the end result. The project of infusing value and credit into invisible labor—of making this labor visible to the eyes and to the economy—is a feminist one because, among other reasons, the primary example of invisible labor is unpaid domestic work, which has historically been performed by women.[5] The example of another nineteenth-century woman newspaper editor, the white abolitionist Lydia Maria Child (1802–80), underscores this point. As Child wrote in a letter to a friend in November 1841, "In addition to what men editors have to perform, I am obliged to do my own washing and ironing, mending and making, besides manifold stitches for my husband's comfort" (qtd. in Karcher 271). Also invisible in these lines is Child's whiteness, which enabled her to work both in her home and at her paper without being required to contend with the "specificity of racial difference" that, as Xiomara Santamarina has shown, marked the experiences of black working women in the nineteenth-century United States (11).[6] But in this prototypal feminist complaint, one thing comes clearly into view: editing, like "washing and ironing, mending and making," is, emphatically, work.[7]

This essay takes up the editorial work of Shadd and Child, two women separated by race but connected by their commitment to abolition, in order to explore the degrees of visibility of the labor documented in the print record of the nineteenth-century United States. In this regard, it offers an additional layer of evidence in support of the argument advanced by Carla L. Peterson, Pier Gabrielle Foreman, and more recently, Manisha Sinha, among others, that positions women, and black women in particular, at abolition's vanguard. I show how both women employed editing as a method of community formation and, in the case of Shadd, of staging (in the sense of both preparing for and performing) an alternative, possible world.[8] By comparing the contents of Shadd's and Child's newspapers through quantitative means, I am able to more clearly describe the nature of Shadd's contributions to that world-building project, as well as to what Derrick R. Spires has recently described as the "new forms of living and of articulating life" that nineteenth-century black periodical culture enabled (17).

The example of these two women's editorial work, together, also punctuates an argument about invisible labor as it relates to the application of quantitative methods in the field of literary studies today. Largely because of the appeal of distant reading, both as a concept and a phrase, those who make use of quantitative methods in their work tend to frame their interventions in terms of the novel perspective that is afforded by a distant view. For example, Ted Underwood, in *Distant Horizons,* in describing his interest in exploring "the sweep of long timelines," analogizes the insights prompted by this perspective to how "the curve of the horizon only becomes visible some distance above the earth" (xxi, xi). While Underwood acknowledges that a distant view is "not enough, by itself, to give linguistic details a literary meaning" and that his approach is only "one of several possible ways" to move forward under the rubric of distant reading, he leaves unchallenged the emphasis on broad contours and generalizable patterns that is encouraged by a perspective of distance (xi, xxi). And while Richard Jean So and Edwin Roland, in this issue, seek

to develop a "critical distant reading" practice that can account for the outliers, and other meaningful differences, that are often elided in analyses of text at scale, they nonetheless leave the structuring axis of *distant* and *close* intact. But there are additional insights that quantitative methods can help bring to light once their capabilities are imagined beyond the boundaries of *distant* and *close*. These insights require contextual framing—and feminist thinking—in order to be revealed.[9]

It is not a coincidence that many of these insights have to do with issues relating to women, to black people, and to other minoritized groups. As Donna Haraway has observed, the technology of distance often obscures nondominant perspectives. But by expanding the conceptual dimensions of quantitative literary studies to include additional axes of inquiry—such as the axis extending from the visible to the invisible, as the example of editorial work suggests—we might begin to conceive of additional approaches that, instead of emphasizing the totalizing perspective granted by a distant view, seek to refract multiple perspectives on a greater scale. These perspectives come into focus by considering the context that surrounds the production of a particular body of work, as well as the actual bodies of those who labored to produce it. These perspectives are also, importantly, rarely assimilable into a unified whole. But by placing them within a multidimensional space of inquiry, we can explore their tensions as well as their alignments. And by focusing on the relations among these perspectives, quantification can become a powerful technique indeed, one that works to enhance the legibility of key textual details, thereby amplifying their significance.

To be clear: by enlisting a comparison between Shadd's and Child's editorial work in the service of an argument about the uses of quantitative methods in literary studies, I do not intend to elide the complexities of gender and race that the comparison introduces; nor do I intend to efface the fact that both women could choose to labor at a time when others remained enslaved. On the contrary, it is in support of their shared effort to extract work from enslavement and to envision new forms of collectivity and citizenship that, as I will argue, quantitative methods can be more purposefully deployed. I also do not intend to suggest that these women understood their editorial work as invisible labor, or even in more general feminist terms.[10] Rather, it is for us in the present—and I speak to literary scholars, and to others in the humanities, who hope to employ quantitative methods in their work—that these ideas about invisible labor are most instructive, for they shape what questions we think to ask, and attempt to answer, about the knowledge work of the past.

In calling for a conceptual reorientation from the axis of *distant* and *close* to a space defined by multiple dimensions of scale, I seek to make the case that quantitative methods can be used to probe the research questions about gender, race, and their intersection with labor that have thus far proved difficult (although certainly not impossible) to explore.[11] In the discussion that follows, I employ one set of such methods—namely, topic modeling followed by a statistical analysis—in order to show how quantification can help to surface certain aspects of editorial labor that would otherwise be difficult to see directly. I also show how the newspapers that constitute my corpus record a range of forms of labor—physical and emotional as well as intellectual—that we might better value and describe. Extending the example of editorial work to the labor required to perform quantitative work today, I demonstrate how the field of quantitative literary studies demands a broader conceptual frame. This expanded frame—one defined by the dimensions of distance, visibility, and others that future scholars must name—is required lest we continue to render invisible the additional forms of labor in which Shadd and Child engaged.

Surfacing Invisible Editorial Work through Topic Modeling

In 1841, eight years before Shadd authored her first publication—a letter to Frederick Douglass, which he printed in his own newspaper, *The North Star*—Child assumed the helm of the *National Anti-Slavery Standard*. As the first woman to be named the editor of an abolitionist newspaper—and the official newspaper of the American Anti-Slavery Society (AASS) at that—Child knew she was entering an ideological battleground. Less than a year earlier, at the 1840 AASS annual meeting, the organization had split over several key issues, including the relation of women's rights to civil rights, the value (or lack thereof) of abiding by established political protocols, and the eroding moral authority of white religious leaders. But those who remained affiliated with the AASS were still not united. Was it better for the remaining AASS members to attempt to coalesce around the most basic goal, that of abolishing slavery? Or would it be a better strategy to shift the entire organization toward a more radical position? And regardless of any change to the AASS platform, how might the organization, which remained mostly white, work to establish more equal relationships between its white and black members, and between itself and black antislavery groups? Racial disparities had long been apparent to many of the movement's black constituencies, of course, but they were becoming increasingly difficult for the white members of the AASS to ignore.

Despite these conflicts, Child committed herself to holding her personal course. As she later wrote in her farewell editorial, looking back on her two-year tenure as editor, "I am not aware that any of these whirling eddies have, at any time, made me swerve one hair's breadth from the course I had marked out for myself." That course, she goes on to explain, was guided by her own conscience and by a deliberate editorial strategy: to insert a "large proportion of literary and miscellaneous matter" into the paper as part of what she characterized as an "honest, open trick." Her gambit was that she might entice additional readers, primarily women and children, to "look candidly at [the] anti-slavery principles" that they might not have encountered otherwise ("Farewell" 190). Through the inclusion of less overtly political genres—news items, short stories, recipes, and even her own creative works—Child hoped to increase the numbers of those committed to the abolitionist cause.

It is important to emphasize that Child is speaking literally when she describes the process of inserting this literary and miscellaneous matter into her paper. Only one or two of Child's own editorials appeared in each issue. The remainder of the material consisted of a handful of articles from other correspondents, both official and unofficial. In the mid–nineteenth century, few newspapers could claim large numbers of staff writers, if they could claim any at all. In most cases, it was the task of the editor to, quite literally, fill up the page. There was usually only one person—and sometimes two or three—who served as editor at any given time (although assistant editors, publishers, printers, and compositors often helped). The editor filled the issue primarily by selecting relevant content from elsewhere; this is the "culture of reprinting" that, as Meredith McGill has demonstrated, characterized much of the literary landscape of the antebellum United States. Editors either inserted borrowed content, as Child describes, often with a line or two of introduction, or they condensed or expanded it so that it would fit in a particular location on the page—at times working with the printer and compositor to rearrange the type itself. (In the smallest of operations, the editor and printer were often one and the same.) This work was therefore both physical and intellectual, in ways difficult to disentangle. It was also both visible and invisible, in ways that the technique of topic modeling can help unfold.

Topic modeling is a technique that derives from the field of machine learning, which employs an iterative, probabilistic method to identify groups of words, or "topics," that tend to appear together in the same document in statistically significant ways.[12] The technique was first developed in the 1990s through research funded by the Defense Advanced Research Projects Agency (DARPA). This work was aimed at automatically detecting changes in newswire text, so that governmental and military institutions could be alerted to emerging geopolitical events.[13] Early in the first decade of the twenty-first century, with the release of MALLET, a software toolkit for generating topic models (among other document classification and clustering models), the technique began to see more mainstream use. And in the 2010s topic modeling began to be deployed in digital humanities research—for example, by Lisa Rhody to probe the gendered language of ekphrastic poetry ("Topic Modeling"), by Rachel Buurma to explore Anthony Trollope's six-volume Barsetshire series, and by Jo Guldi to model the history of infrastructure in England.[14]

Topic modeling is a method that is described as unsupervised, because, while the scholar is responsible for assembling the set of documents to analyze and for writing the code that runs the topic model, the scholar does not specify which particular topics to look for in advance. Rather, the scholar specifies the number of topics to look for, and through a process of sampling—that is, by repeatedly selecting a topic for each word at random, on the basis of a probability distribution that is refined as the model becomes fitted to the data—the topics themselves become more refined and coherent over time.[15] Because the sampling process relies on random selection, the model yields a slightly different set of topics each time the code is run. This aspect of topic modeling inference is important to acknowledge, as Nan Z. Da also emphasizes in her criticism of how topic modeling has been applied in literary contexts. But unlike Da, who dismisses the technique because of the variability that the sampling process necessarily produces, as well as her belief that it lacks "meaningful applications" in the field of literary studies, I align myself with others across the humanities who employ topic modeling in their work in maintaining that the technique can lead to powerful insights when purposefully deployed and properly interpreted (625). I maintain, moreover, that we might find yet more meaningful applications of topic modeling when considering its uses within an expanded conceptual frame.

As an example of how the deployment of a topic model can be informed by ideas about invisibility as well as of distance, and of how context can be brought to bear on the interpretation of its output, consider how a topic model of a set of abolitionist newspapers can be used to better understand Child's strategy of editorial *copia*. How might we surface the invisible editorial work that went into her purposeful selection of the "miscellaneous matter" she introduced into the *Standard*, to phrase the question in more precise terms? And what of Shadd's similarly invisible editorial work, which we know she performed but, because of personal preference, social pressure, archival politics, or some combination of the three, is not documented for us in the present in as much detail? Framed in this way, topic modeling becomes a meaningful analytical tool indeed: it not only enables a view from a distance but also helps bring to light certain invisible aspects of knowledge production.

In the set of topics in table 1—the ten most prevalent topics, of one hundred topics total, among the abolitionist newspapers in a corpus of nineteenth-century newspapers—the broader context into which Shadd and Child inserted their editorial efforts begins to cohere.[16] I constructed this list by performing some simple math on the output of a topic model that I ran on the newspaper corpus. I added up the proportion of each topic in each

article in each paper identified as abolitionist in focus. (Among the outputs of a topic model is a breakdown of the proportion of each topic in each article.) I then sorted those sums from most to least prevalent and converted the proportions to percentages. Table 1 displays the ten most prevalent topics in abolitionist newspapers, with the topic that makes up the largest proportion of those titles at the top of the list.

Each topic is identified by the letter *T* followed by a number between zero and ninety-nine. The number in the column marked "Percentage" is the aggregate percentage of the contents of all articles in the abolitionist newspapers in the corpus (several hundred thousand articles total) that the model has determined to be composed of that topic. The final column, "Keywords," shows the top ten words associated with the topic. For example, in the topic most prevalent in the set of all antislavery newspapers, T65, the word *party* most often appears together with the words *democratic*, *whig*, *free*, *vote*, and so on. From this set of words, one could make the assessment that this topic is about politics. From the second, T16, in which the word *slavery* appears with *anti*, *abolitionists*, *american*, and so on, one might conclude that this topic tackles issues of abolition and, perhaps, the role of the various antislavery societies trying to achieve it.

Researchers usually give short names to the topics so as to be able to refer to them more clearly; these are in the column marked "Label" in the table above. I am singling out this feature because it is important to underscore that while the words associated with each topic are algorithmically determined, the label for each topic is chosen by the scholar who interprets the results. Above, I have labeled T65, the most prevalent topic at 1.47% of all abolitionist papers, "United States politics." The next topic, T16, at 1.43%, I have labeled "abolition." The next most prevalent topic is one that includes rhetorical language, and so on. It is not surprising that most abolitionist newspapers contain articles that discuss

Table 1
The Ten Most Prevalent Topics in the Abolitionist Newspapers in the Corpus

Topic	Label	Percentage	Keywords
T65	United States politics	1.47%	party, democratic, whig, free, vote, political, election, parties, convention, democracy
T16	abolition	1.43%	slavery, anti, abolitionists, american, society, abolition, pro, slave, liberty, garrison
T84	rhetoric of action	1.36%	question, subject, opinion, public, duty, views, action, matter, regard, opinions
T89	slavery and freedom	1.35%	freedom, liberty, free, god, land, slave, human, slavery, humanity, rights
T42	formal organizing	1.35%	society, meeting, friends, held, annual, county, anti, present, members, meetings
T10	emotion	1.29%	heart, life, love, death, soul, heaven, earth, hope, grave, tears
T69	political power	1.28%	political, great, power, public, influence, present, system, interests, progress, men
T11	nature and summer	1.27%	bright, flowers, light, sweet, beauty, sun, summer, beautiful, fair, green
T93	Christianity	1.27%	god, christ, lord, bible, day, jesus, holy, christian, faith, spirit
T87	religion and morality	1.26%	christian, moral, men, man, human, god, principles, evil, sin, religion

Table 2
The Ten Most Significant Topics in the *National Anti-Slavery Standard*

Topic	Label	PMI	Keywords
T49	places	1.54	ohio, philadelphia, mass, office, york, miller, penn, standard, thomas, free
T32	miscellaneous ads	1.48	table, york, duty, free, street, fair, ad, cotton, good, cent
T91	shopping	1.10	street, philadelphia, books, goods, hand, prices, store, cases, assortment, attention
T46	ads for dry goods	0.87	cents, corn, flour, wheat, american, advance, made, paper, white, sales
T16	abolition	0.87	slavery, anti, abolitionists, american, society, abolition, pro, slave, liberty, garrison
T7	organizing	0.52	friends, aid, fair, money, work, make, means, committee, time, funds
T2	time	0.38	time, made, found, left, place, day, return, received, immediately, told
T62	war and expansion	0.37	texas, mexico, war, states, united, annexation, california, mexican, government, country
T42	formal organizing	0.36	society, meeting, friends, held, annual, county, anti, present, members, meetings
T97	slavery	0.24	slave, slaves, slavery, free, master, negroes, states, property, slaveholders, emancipation

Table 3
The Ten Most Significant Topics in the *National Anti-Slavery Standard* While Child Was Editor

Topic	Label	PMI	Keywords
T70	cooking	0.88	water, put, half, sugar, pound, cold, milk, salt, add, butter
T26	foreign relations	0.63	united, government, states, american, cuba, foreign, british, treaty, trade, president
T49	places	0.63	ohio, philadelphia, mass, office, york, miller, penn, standard, thomas, free
T40	correspondence	0.53	letter, office, post, letters, received, written, send, addressed, department, general
T42	formal organizing	0.49	society, meeting, friends, held, annual, county, anti, present, members, meetings
T14	Massachusetts	0.45	boston, mass, rev, john, wm, george, salem, charles, samuel, esq
T25	travel and accidents	0.44	fire, railroad, city, train, boston, cars, company, york, road, accident
T35	federal government	0.40	house, congress, district, petition, representatives, adams, legislature, petitions, people
T9	violence and crime	0.39	house, man, shot, negro, murder, mob, night, city, arrested, men
T5	state government	0.38	state, law, laws, act, states, citizens, person, persons, united, legislature

politics and abolition and that they frequently use rhetorical calls to action. But this is solid evidence that a topic model of these newspapers can yield meaningful results.

The model becomes more intriguing when looking at the topics that characterize specific newspapers and editors, such as the papers edited by Child and Shadd. The next two sets of topics (tables 2 and 3) show, first, the topics associated with the *National Anti-Slavery Standard* during its entire editorial run, and, second, the topics associated with the *Standard* only during the time that Child served as editor. Here, rather than rank the topics by raw percentage, I rank them in terms of a statistical measure called pointwise mutual information (PMI). PMI is used to quantify the degree of association between a specific feature and a particular category, so that the feature can then be ranked. (The number itself is a unitless measure; unlike inches or pounds, it does not correspond to a fixed measure in the world, and is used for ranking purposes only.) In terms of my analysis, the features consist of the one hundred topics generated by the model. I then consider those features in relation to two categories: all articles published in the *National Anti-Slavery Standard* over the course of the twenty-five years represented in the corpus (table 2), and then only the articles published in the *Standard* while Child was the editor (table 3).

Put more simply, PMI enables the topics to be ranked not by their overall prevalence in the corpus (or in a subset of the corpus, as in table 1), but rather by the strength of their association with a particular subset of the corpus. This ranking scheme can yield significant insight, as a comparison between table 1 and tables 2 and 3 makes clear. Table 1 demonstrates that the abolitionist newspapers in the corpus discuss the topics related to abolition more than any other topics in the corpus; this is a known finding of the sort that Da criticizes in her essay. But when we can identify which topics uniquely mark one particular paper, as in table 2, or one particular editor's oversight of a paper, as in table 3, the topics generated by the model become meaningful indeed. For this editorial oversight—the decision to insert certain topics and de-emphasize others—is the result of the intellectual and physical labor that Child describes in her editorial and in which all nineteenth-century newspaper editors—Shadd also among them—invisibly engaged.

In the list of topics in table 3, we see the invisible aspects of Child's editorial labor refracted through a new lens. Her personal correspondence—not to mention her name on the *Standard*'s masthead—attests to the fact that she performed this work. Scholars have been able to point to specific editorials she composed or to specific articles she chose to reprint, but until now they have lacked the ability to describe the contours of her editorial work at this level of scale. The ranking of the topics reveals a paper fairly evenly split between political topics (T26, T42, T35, and T5) and the "miscellaneous material" that Child deployed as an editorial ruse. The topic model helps give additional shape to the effort she expended to balance the material that directly engaged issues relating to slavery and its abolition with the other types of content that she believed would indirectly, albeit no less powerfully, advance the abolitionist cause.

Looking at the topic model with a more focused lens, we might consider the significance of the topic most strongly associated with Child's tenure as editor of the *Standard*: T70, which centers on cooking ingredients and instructions. Child had a reason to be interested in cooking: in the late 1820s, she had authored a best-selling cookbook. But the high ranking of T70 points to how Child also wielded her interest in cooking as part of her strategy to compel more women to ally themselves with the abolitionist cause. It has been documented that the readership of the *Standard* swelled to 16,000 less than a year after Child assumed its helm—a huge number for

its day, when a successful subscriber list numbered in the low hundreds. In explaining this response, scholars have pointed to the inclusion of specific features, such as the personal essays that would later be collected as *Letters from New-York*, as well as to the evidence that Child herself offers, in her farewell editorial, about her desire to make the *Standard* a "family newspaper" ("Farewell" 190). But the high ranking of a topic that explicitly deals with family matters provides additional evidence on a scale that cannot be perceived by a single reader. It confirms, moreover, how the ranking of topics can be considered evidence of the specific themes Child used to achieve her editorial feat.

Considered as a conceptual whole, the ranked topics also stand in for the additional forms of editorial labor that we cannot—and can never—see. We know from other evidence, such as Child's personal correspondence during her time as editor of the *Standard*, that she was indeed performing this work. In a letter written in March 1842 (fig. 1), after a merger with the *Pennsylvania Freeman* (after which the *Provincial Freeman* was named) required her to republish large amounts of its content in her paper, she laments, "I cannot manage the paper at all as I would. Public documents of one kind or another crowd upon me, and since the union with the *Freeman*, I am flooded with communications, mostly of an ordinary character." In the letter, Child describes the work of rewriting almost all this "ordinary" content, but even after that, she notes that "they are not worth much." She describes her desire to make more room for her own editorials, but with the "flood" of "communications," she cannot find enough space: "I fear to injure the interest of the cause and the paper by omission!" she exclaims (Letter to Ellis Gray Loring).

In Child's letter is found, on the one hand, an additional justification for a quantitative approach to analyzing the *Standard*. Her description of the "flood" of ordinary communications that has crowded out more important news suggests that even Child herself believes that her readers should be more selective in what they read. But on the other hand, the letter provides evidence of a form of intellectual labor that cannot be precisely located by any literary research method. Child's own arguments—the "three editorials" that she claims she would have written had she not been consumed by her editorial work—never made it out of her head. For this reason, we do

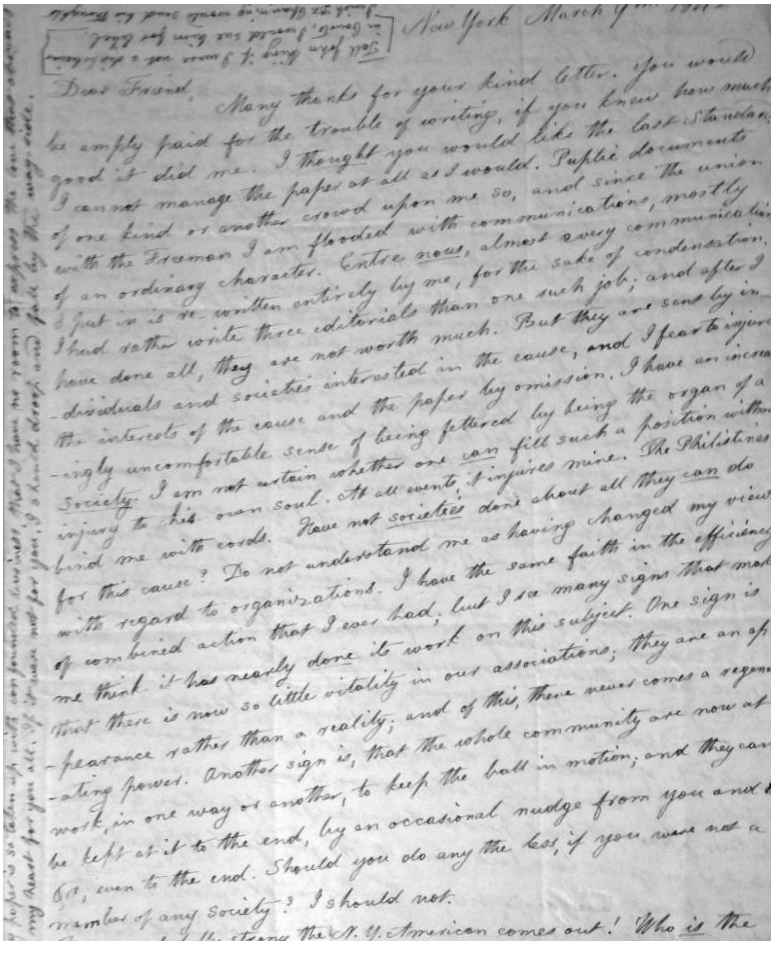

FIG. 1
Child's letter to Ellis Gray Loring, dated 9 March 1842.

not have the text of those editorials to analyze, nor do we have a clear indication of all the rewriting she claims to have done. Nevertheless, we can visit the Manuscripts and Archives Division of the New York Public Library, where this letter is housed, as I did while conducting my research, and contemplate the gaps in the printed record that are, paradoxically, documented on another page. Together with the editorials that Child was able to publish, and with the topics that point to her invisible editorial work, this letter brings us closer to acknowledging the full range of labor—the various forms it entailed and the degrees of effort it involved—that Child contributed to the abolitionist cause.

Invisible Editorial Labor and Its Physical Toll

In the section called "Communications" in the 23 March 1849 issue of *The North Star*, the newspaper edited by Frederick Douglass, readers encountered a letter that likely elicited a pause. "We should do more and talk less," the letter states, expressing no uncertain degree of frustration at the lack of progress from the abolitionist movement over the course of the previous several years and, in particular, at the organizing then taking place at the "colored conventions."[17] The letter goes on to excoriate the "corrupt clergy" for "inculcating ignorance as a duty, superstition as true religion" before concluding that the "possibility of final success" would hinge not on religious leaders but on teachers, who must convey to their students "the possibility of bringing about the desired end ourselves, and not waiting for the whites of the country to do so." The letter is signed "M. A. Shadd"—Mary Ann, of course, who was living in Wilmington, Delaware, and working as a teacher at the time (Shadd, "Wilmington").

Just two years later, in 1851, Shadd would heed her own advice to "do more and talk less" when she emigrated to Canada—and, just two years after that, launched her newspaper. A letter penned on the occasion of the paper's second anniversary, in 1854, attests to the range of effort that her commitment to action entailed: "That you have had formidable difficulties to contend with, in relation to your enterprise, none will doubt how much labor, activity, and ability that is required to fill the post of Editor, Publisher and Financier, all at the same time," wrote Shadd's friend and confidant, William Still (qtd. in Rhodes 97–98). As evidenced by this letter, and by those who had the opportunity to observe her at work, Shadd took on nearly all the roles required to keep the paper in print. And yet unlike Child, whose name was emblazoned on the masthead of the *Standard*, Shadd—who did not list herself as the editor of the paper until the final year of its run—could not claim formal credit for this broad scope of work.

However, looking at the topics most associated with the *Freeman*, which were generated using the same method described above, we get a clearer sense of what was entailed by this "labor, activity, and ability" (table 4). The top two topics, T57 and T8, offer a strong indication of the paper's international focus—a focus that Rhodes has also observed. Even the topic relating to United States politics, T26, farther down the list, has an international focus: "Cuba" and "Britain" are among its most significant terms. (Recall that the political topics that dominated the abolitionist papers overall, listed in table 1, had more to do with the internal workings of the federal legislature.) The topics that have to do with travel and transportation, T43 and T0, as well as T25, which also appears in table 3 as a topic in the *Standard* during Child's tenure, suggest an additional emphasis on emigration, which is consistent with what scholars have argued about Shadd's personal politics. And T43 and T56, both of which have to do with animals and nature, reflect Shadd's attempt to engage with her rural setting. Also as in the topics associated with the *Standard* while Child served as editor, the recipe topic, T70,

is featured quite prominently. And as they did in the analysis of Child's tenure at the *Standard*, these topics, taken together, represent the less visible but no less important aspects of editorial work—namely, the careful curation of content required for the paper to speak to a local and regional audience, as well as to advance larger social and political goals.

Perhaps most significant for an argument about the ideological stakes of the abolitionist movement, however, is that the topics that best characterize the *Freeman* do not contain any of the topics centered on slavery and its abolition (unlike those in table 1). The topics associated with the *Freeman* would thus seem to confirm the argument made by Spires, discussed at the outset of this essay, as well as those of other scholars of the black press, such as Frances Smith Foster, who have established how "people of African descent used their print culture to help reinvent themselves as African Americans and to construct African America" (Foster 715). A thematic analysis of the *Freeman* contributes an additional layer of evidence to these arguments, offering a high-level perspective on the nature and scope of the African (North) America that Shadd sought to construct through her paper. And Shadd's vision was capacious indeed—a claim that holds true not only with respect to abolitionist newspapers in general, or with respect to the *Standard*, but also with respect to other titles associated with the black press, those that are more often held up as evidence of what the struggles for black freedom in the nineteenth century entailed.

Consider a list of topics drawn from *Frederick Douglass' Paper*—the title that Douglass would adopt when *The North Star* merged with another abolitionist title (table 5). *Frederick Douglass' Paper* was published over the same span of years as the *Freeman*, and for that reason is apt for comparison with Shadd's paper. It is also apt for at least two other reasons. First, its antecedent served as the venue for Shadd's authorial debut. And second, in contrast to Shadd leaving her name off the masthead, Douglass used his name to title the paper itself. In other words, black women might have been the abolitionist

Table 4
The Ten Most Significant Topics in *The Provincial Freeman*

Topic	Label	PMI	Keywords
T57	Europe	0.97	french, france, russia, paris, england, emperor, austria, london, government, europe
T8	Britain and colonialism	0.90	england, british, lord, west, london, india, great, english, canada, colonies
T70	cooking and recipes	0.71	water, put, half, sugar, pound, cold, milk, salt, add, butter
T25	travel and accidents	0.57	fire, railroad, city, train, boston, cars, company, york, road, accident
T43	nature and land	0.52	miles, land, river, country, great, west, indian, lake, land mountains, indians
T0	sea travel	0.46	board, captain, ship, vessel, boat, sea, port, steamer vessels, capt
T56	nature and animals	0.41	head, dog, tree, animal, long, bird, black, dogs, young, birds
T26	foreign relations	0.35	united, government, states, american, cuba, foreign, british, treaty, trade, president
T29	labor	0.33	labor, work, poor, people, land, condition, men, industry, laborers, wealth
T76	family and work	0.32	man, house, boy, money, master, wife, father, young, children, years

movement's vanguard, but they were not always able to claim the same credit as men for their forward-thinking work.[18]

A close examination of the topics associated with *Frederick Douglass' Paper* suggests that the paper moved beyond topics centered on abolitionism to address broader issues of politics and race, an emphasis that is not present in the topics associated with the abolitionist papers overall (table 1). But among the topics associated with *Frederick Douglass' Paper*, there is no evidence of the topics that have to do with daily life, or with nature, or with foreign affairs, all of which appeared in the *Freeman*. A triple comparison among the topics associated with *Frederick Douglass' Paper*, those associated with the *Standard* during Child's time as editor, and those associated with the *Freeman* crystallizes just how intent Shadd truly was on expanding her readers' sense of the possibilities for black life—in Canada, after emancipation, and beyond.

In a recent issue of *Social Text*, Jessica Marie Johnson, a historian of Atlantic slavery and the Atlantic African diaspora who also creates digital projects of her own, argues for placing the field of digital humanities in closer dialogue with the black freedom struggles that endure to this day. The "struggles engaged in by subjects racialized as black to mark their humanity, make legible their legal and extralegal exclusion from societies built by their labor, and form new worlds by transforming and creating inclusive and equitable social conditions," Johnson argues, align with the transformative possibilities of digital scholarship, considered broadly (58). A thematic analysis of the *Provincial Freeman* provides evidence of Shadd's participation in that liberatory project of world building. After all, Shadd's activist credentials were sometimes questioned—because she advocated for expatriation rather than reform from within the United States, because she, unlike Child, was not always a consensus builder, and because she was a woman. But in the contents of her newspaper, refracted through the lens of a topic model, can be found compelling

Table 5
The Ten Most Significant Topics in *Frederick Douglass' Paper*

Topic	Label	PMI	Keywords
T80	legal and courts	0.52	court, case, judge, law, trial, jury, fugitive, courts justice, decision, supreme
T1	public speaking	0.46	meeting, audience, evening, douglass, people, speech, hall, made, lecture, present
T92	race	0.43	colored, people, white, color, black, free, colonization, race, country, men
T30	men's names	0.38	john, james, william, brown, thomas, henry, rev, george, esq, wm
T24	temperance	0.34	temperance, smith, good, men, law, rum, great, reform, liquor, drink
T7	organizing	0.30	friends, aid, fair, money, work, make, means, committee, time, funds
T65	political parties	0.28	party, democratic, whig, free, vote, political, election, parties, convention, democracy
T97	slavery	0.28	slave, slaves, slavery, free, master, negroes, states, property, slaveholders, emancipation,
T96	legal and laws	0.26	law, constitution, government, rights, power, laws, property, liberty, people, authority
T69	political power	0.26	political, great, power, public, influence, present, power system, interests, progress, men

evidence that affirms the value of Shadd's forward-thinking activist work.

And this was emphatically work, to return to this essay's central theme. The one topic strongly associated with the *Freeman* that I have not yet discussed is T29 (table 4), whose most significant keyword is *labor*. Over the course of my research, I became increasingly intrigued by this topic, and so I wrote a short bit of code to rank all the articles published by the *Freeman* (slightly over 5,000) according to the proportion of the labor topic that each article contained. What the ranking of articles revealed was that most of the articles at the top of the list had to do with the physical labor of farming. (The emphasis on farming also connects this topic more closely with the topics on animals and nature, which was not as clearly conveyed through the topic's keywords.) But reading through the top several hundred articles associated with this topic, I came across an article that I had already been alerted to by Rhodes's study: Shadd's farewell editorial, from 30 June 1855, in which she makes it clear that she was acutely aware of the multiple forms of labor that were required of her as a black woman newspaper editor (Rhodes 70–99). These forms of labor were brought about by her editorial duties and magnified by both her gender and her race, as Shadd herself states. For even as she proudly declares to have "broken the Editorial ice" for "colored women everywhere," she does not hide the work that was required of her in order to do so: "Few, if any females had had to contend against the same business" that she had faced, she writes—referring to the criticism she had received as a result of her hard-hitting editorial style—with the exception of her sister-in-law, Amelia, who had "shared my labours for a while" ("Adieu").

These lines echo another editorial, published earlier in the month, which also appears high on the list of articles that contain the labor topic. In this editorial, Shadd characterizes the work required of "[e]ditors of the unfortunate sex" as "drudgery," done in the absence of others willing to "put their shoulder to the wheel" ("To Our Readers West"). Evident in this statement, as in her farewell editorial, is Shadd's sense of the significant affective and emotional labor involved in this work, as well as of its personal and at times physical toll. The topic model amplifies these claims, linking Shadd's own outlay of labor to a range of other forms of work. Shadd's characterization of her labor also anticipates the work of Vivian May, Grace Hong, Jennifer Nash, and other black feminist scholars, who have long argued that the project of "feminist education" itself is a product of the "long intellectual and political labor of black women," labor that exacts a very real physical cost (Nash 6).[19] For these reasons, we require additional methods that contribute to the project of naming and crediting this labor—some of which, like these two editorials, is directly documented in the printed record, and some of which, like Shadd's oversight of the paper, is far less easily perceived.

The History of Data and the Work to Come

In her landmark essay on the origins of black print culture, Foster argues for the significance of another nineteenth-century periodical: *The Repository of Religion and Literature and of Science and Art*—a sister publication of *The Christian Recorder*, which is included in the newspaper corpus analyzed here. In her essay, Foster draws from the text printed on the back page of each issue of the *Repository*, in which the editors state that among their aims is to "furnish data for future comparison" (qtd. in Foster 730). Writing in 2005, Foster interprets this line as evidence that the *Repository* was published with the intention of being used, and used thoroughly, well into the future. But shifting the emphasis of the line from the word *future* to the word *data*, we can see how the *Repository* might have also been intended by its editors to be used in a particular way: as a source of data that can

shape the stories that we, as scholars in the present, can tell about the past.

Over one hundred and fifty years later, we have the capacity to perform comparisons of precisely the form that the *Repository*'s editors envisioned. In fact, the topical comparisons among abolitionist newspapers that are described in this essay perform some of this very work. But the forms of labor that remain invisible, such as the labor that Shadd describes in her farewell editorial, suggest that an expanded conceptual frame is required if we are to honor the full range of work, and the full range of people, that have contributed to creating the cultural record that we rely on to conduct our quantitative analyses today. Shadd's account of her editorial labor also supports the arguments made by contemporary labor studies scholars, who remind us that discussions of labor far too often elide distinctions of gender and race, even as the labor performed by women, and by other minoritized groups, structures capitalism itself.[20]

These arguments, in turn, point to the similar coconstruction of the concepts of gender and race and the concept of data—the very same concept that quantitative methods are premised on.[21] If we trace the concept of data back to its emergence, there can be found a clear link between the desire to count and classify information and the desire to count and classify people—specifically the desire to count and classify people according to gender and race.[22] The history of counting and classifying is inseparable from the larger colonial systems of domination and control.[23] And yet, as scholars who seek to use quantitative methods in our work, we are bound to our texts as data, which means we are also bound to the oppressive weight of the history of data. The burden of this history does not mean that quantitative methods should be rejected out of hand, however. Rather, the challenge is how best to wield the power of quantitative methods to contest these oppressive histories at the same time that we admit what we cannot and, at times, should not know. In the context of an ongoing, interdisciplinary, and increasingly urgent conversation about data and the methods employed to derive meaning from them, what literary scholars can contribute is an insistence on—and examples of—the value of context; the sustained attention to the gaps in both datasets and archives; and most crucial, an expanded set of models—both conceptual and computational—that enable us to acknowledge what remains out of reach, just as we push forward in our understanding of texts, cultures, and the people who labored to shape them.

Notes

This essay incorporates the knowledge and labor of many people, contributed over the course of many years. My early work with Jacob Eisenstein laid the groundwork for this essay, and his comments on numerous drafts have sharpened it significantly. Sari Altschuler, Sarah Blackwood, Natalia Cecire, Ryan Cordell, Nihad Farooq, Matthew K. Gold, Miriam Posner, Shawn Ramirez, Aaron Santesso, Kyla Schuller, Ted Underwood, Karen Weingarten, and Greg Zinman also contributed valuable feedback. I would also like to thank Molly O'Hagan Hardy and Thomas Augst, who organized the Digital Antiquarian conference at the American Antiquarian Society in 2015, which provided the impetus to begin writing this essay. Keynotes at the 2017 Keystone Digital Humanities conference and the 2018 Futures of American Studies Institute allowed me to refine it. Thomas Lannon, at the New York Public Library, provided crucial archival assistance. The work of the Colored Conventions Project has also significantly influenced the development of this piece.

1. The phrase "unexpected place" is a deliberate reference to Gardner's *Unexpected Places*, among the works responsible for establishing the importance of the black press.

2. Shadd married Thomas F. Cary in 1856 and is sometimes referred to as Mary Ann Shadd Cary.

3. On Shadd and anonymity, see Casey.

4. Although Daniels was among the first to describe labor in terms of invisibility, the concept builds on the idea of reproductive labor articulated by Federici in her account of the movement Wages for Housework. In applying the concept to editorial work, I am indebted to Blackwood's theorization of editing as another form of reproductive labor: care work.

5. This is a simplification, of course; women have long employed—and, in the United States, enslaved—other women in order to perform this work as well. The racial and economic assumptions embedded in this assertion are addressed by, among others, Davis 222–44.

6. While Shadd was a member of what Rhodes calls the "northern black elite," her existence was nevertheless "shaped by discrimination and injustice, a constant struggle against poverty, and intergroup discord" (xv).

7. On the idea of the feminist complaint, see Ahmed.

8. Here I join Spires in building on the foundational work of Foster, as well as Peterson; and Foreman. Others who have contributed to this body of work on the black press include Gardner; Fagan; Casey; Cohen and Stein; and Fielder and Senchyne.

9. For an in-depth account of how I understand the term *feminism* as multiple and intersectional, see D'Ignazio and Klein.

10. As Offen has established, the term *feminism* gained currency only in the 1890s, and even then only in France; it would take another two decades to cross the Atlantic.

11. As early as 2011, Bailey pointed out that "the ways in which identities inform both theory and practice in digital humanities have been largely overlooked." With respect to quantitative methods in particular, Posner; Nowviskie; Rhody ("Why I Dig"); Clement; and Johnson ("Digital") have each pointed out failures to engage with a range of conceptual issues relating to, among other things, gender, sexuality, race, class, and ability. Recently, Mandell; McGrath; and So et al. have attempted to intervene in this area, but this work remains provisional.

12. For a discussion of topic modeling in a literary context, see Goldstone and Underwood.

13. For a history of topic modeling, see Binder.

14. See also Goldstone and Underwood.

15. It is important to note that most, but not all, topic modeling implementations rely on this process of sampling. To learn more about the specific method that I used for this analysis, Latent Dirichlet Allocation (LDA), see Underwood, "Topic Modeling."

16. These titles include: *Douglass' Monthly*, *Frank Leslie's Weekly*, *Frederick Douglass' Paper*, *Freedom's Journal*, *Godey's Lady's Book*, *National Anti-Slavery Standard*, *The Provincial Freeman*, *The Christian Recorder*, *The Colored American*, *The Liberator*, *The Lily*, *The National Era*, *The North Star*, and *The Weekly Advocate*. The corpus was created through a paid license agreement with the database provider, Accessible Archives, in November 2014, when I was permitted to scrape the HTML text of these newspaper titles (and associated metadata) from the Accessible Archives Web site. This initial corpus creation effort was performed as part of a research collaboration with Jacob Eisenstein on the project Interactive Topic Model and Metadata Visualization (TOME), supported by NEH Office of Digital Humanities Grant #HD-51705-13, which concluded in 2015. Between 2017 and 2018, I returned to the corpus, working with two undergraduate students, Nikita Bawa and Adam Hayward, to correct some of the most common transcription and encoding errors and to generate a set of exploratory topic models. In addition, these students, along with two graduate student interaction designers—Caroline Foster and Morgan Orangi—implemented the TOME browser that Eisenstein and I envisioned. On the basis of this exploratory work, I narrowed the corpus so that it contained only the articles that were published between 1827 and 1865. This resulted in 224,160 articles, most of which (83.5%) were explicitly focused on abolition. I then wrote new code to generate the topic model that is the basis of the analysis described in this essay. More specifically, I employed Gensim, the vector space and topic modeling library, making use of its wrapper for the MALLET implementation of LDA. I generated one hundred topics after one hundred iterations, filtering out the fifty most common words (out of just over a million words total). All notebooks for this project, including the code that generated the topic model and the calculations I refer to later in this essay, can be found at github.com/laurenfklein/dimensions-of-scale/. To explore the topic model by means of the TOME browser, visit tome.lmc.gatech.edu. For more on the TOME project, see Klein and Eisenstein; Hayward et al.

17. Ironically, Frederick Douglass would soon be joined in his editorial efforts by a woman who went unnamed: Julia Griffiths, a white British abolitionist who arrived in Rochester in May of that year. For what is known of their relationship, see Douglas.

18. Highlighting the role of black women in abolishing slavery and in broader movements for black liberation is a central goal of the Colored Conventions Project, which seeks to recognize how women were crucial to the conventions movement but who went unnamed in the official minutes of the convention meetings. See "Colored Convention."

19. On the protointersectional theories advanced by nineteenth-century black women, such as Anna Julia Cooper, see May; Cooper. On the material effects of systemic violence, see Hong.

20. See Day, whose project builds on the Marxist critiques of Lowe; Roediger.

21. On the history of the concept of data, see Rosenberg.

22. For a powerful reckoning with this history, see Johnson, "Markup Bodies." For a study that focuses on the legacy of eugenics, see Spade and Rohlfs. For a study of surveillance practices with a long historical sweep, see Browne. For a study of the history of self-tracking, see Wernimont.

23. On the association between colonialism and counting, see Farrell. On the tension between statistical measures and indigenous populations, see Walter and Andersen.

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