“Too isolated, too insular”: American Literature and the World

Matthew Wilkens

Matthew Wilkens, Cornell University
Peer-Reviewer: Caren Irr, Cameron Blevins
Data Repository: 10.7910/DVN/XXN1UE

ABSTRACT

Are American authors homers? Do they devote too much of their attention to American concerns and settings? Is American literature as a whole different from other national literatures in its degree of self-interest? We attempt to answer these questions, and to address related issues of national literary identity, by examining the distribution of geographic usage in more than 100,000 volumes of American, British, and other English-language fiction published between 1850 and 2009. We offer four principal findings: American literature consistently features greater domestic attention than does British literature; American literature is, nevertheless, significantly concerned with global locations; politics and other international conflicts are meaningful drivers of changing literary attention in American and British fiction alike; and prize-nominated books are the only examined subclass of American fiction that has become significantly more international in the decades after World War II, a fact that may account for readers’ unfounded perception of a similar overall shift in American literature.

In late September, 2008, shortly before that year’s Nobel prize in literature was awarded (to Jean-Marie Le Clézio), Horace Engdahl, permanent secretary of the Swedish Academy, gave an interview to the Associated Press in which he explained the scarcity of American laureates. The United States, he suggested, is “too isolated, too insular. They don’t translate enough and don’t really participate in the big dialogue of literature. That ignorance is restraining.”1 The public response to Engdahl’s remarks, in the US and elsewhere, was mostly indignant and entirely predictable. The whole kerfuffle was intense but short lived and, though it continues to be cited on occasion in connection with the Academy’s perceived failings or American literature’s purported narrowness of scope, has had little obvious impact on academic literary studies.2

At the same historical moment -- that is, about a decade ago, during the early years of the new century -- American literary scholarship was coming to grips with a related problem. “For too long,” wrote Wai Chee Dimock in her influential Through
Other Continents (2006), “American literature has been seen as a world apart, sufficient unto itself, not burdened by the chronology and geography outside the nation, not making any intellectual demands on that score.” The way in which Engdahl’s phrasing mirrored Dimock’s is striking, but the objects of their analysis were different. Dimock was describing the reception and analysis of American literature, not its content. Her point was that American literature had long been more internationally engaged than the critical traditions descending from F.O. Matthiessen, Sacvan Bercovitch, or the New Criticism -- traditions that emphasized the distinctively American character of U.S. writing -- could admit.

In her reorientation of the field toward the global character of literature produced in the United States, Dimock was not alone. Caroline Levander and Robert S. Levine’s widely cited collection Hemispheric American Studies appeared a year later; Rachel Adams’ Continental Divides (2009) reimagined American fiction as part of a fundamentally integrated North American literary culture two years further on. Hewing more closely to the issue Engdahl raised -- that is, to the global content of American literary texts rather than to their critical reception -- a slew of articles and books published near the turn of the decade examined the historical ebb and flow of American literature’s direct engagement with the wider world, finding recent “global turns” at points ranging from the early Reagan administration (Paul Giles, linking newer fiction to the “inchoate” national boundaries of the Revolutionary era), to the mid-1990s (Paul Jay), to the new millennium (Caren Irr, treating the “geopolitical” novel in particular), to 9/11 (Bruce Robbins).

There can be little doubt that, whatever the merits and historical determinants of the long-running nationalist critical understanding of American literature, the rise of more globally oriented scholarship in the twenty-first century has been a welcome and fruitful development. And while not all of this work has been even implicitly invested in an answer to Engdahl’s claim of cultural chauvinism, nearly all of it raises in one way or another the question of American literature’s collective attempts to balance domestic with international concerns. It would be useful, then, if it were possible to assess American literary attention within and beyond the nation, to compare such attention to that of other national literatures, to track changes in both facets over historical time, to measure the differences in global investment between elite and popular US texts, and to gauge the differences between models of national
literature organized around readers and around writers. What follows is an attempt to produce new evidence on each of these fronts and to provide an interpretive framework through which that evidence can be integrated with existing criticism.

Our principal findings are four:

1. **American literature favors American spaces.** American authors and US-published books direct a much larger fraction of their geographic attention to domestic locations than do British authors and UK-published books.
2. **US fiction is significantly international.** Although the overall level of domestic attention in American fiction is high and stable over time, there is nevertheless a significant fraction (30-40%) of American literary attention directed to locations outside the US.
3. **Politics matter.** The distribution of foreign locations appears to change most notably in response to political conflict, especially wars, rivalries, and decolonial struggles.
4. **Prize culture is (a little) different.** Books nominated for high-status literary prizes in the period after World War II are the only subset of American fiction in which we observe a sustained shift toward greater international attention. This helps to explain the (mistaken) perception in select literary circles that American fiction as a whole has become more international in the postwar period.

**Measuring literary-geographic attention**

Scholars of literature lack any single, obvious, widely shared, and consistently applicable criterion by which to assess textual attention to, or investment in, global affairs. As a result, even facially straightforward cases are likely to provoke at least some dissensus. This issue, while productive of critical debate, complicates the effort to measure changes in internationalism across many books -- that is, in literary cultures -- over long time spans. What is wanted is a textual feature that provides a countable and consistent (if necessarily imperfect) proxy for what Engdahl called “insularity.” One such feature is named places; once identified and associated with geographic information, it becomes possible to measure the fraction of a text’s geographic attention devoted to locations within and beyond any given nation.
Repeated over many books of diverse origin, the result is a gauge of literary-cultural internationalism.

The quantitative analysis of literary geography has become well established in recent years. In most cases, including the present study, researchers use named entity recognition (NER) algorithms to identify word tokens in a given text that refer to geospatial locations. The location references are then looked up in a gazetteer that provides hierarchically organized geographic information about them (“Trafalgar Square” refers to an area at a specific latitude and longitude, with a given spatial extent, located within London, England, United Kingdom). Some form of error correction is usually necessary to identify mistakes at the NER stage and to resolve geographic ambiguities. The result is an interpretive reduction of a text to its directly specified geographic references, as well as a new and explicit embedding of those references within a known (and typically static) matrix of geopolitical boundaries.

A worked example
We and others have discussed at length in previous work the affordances and limitations of this method. But it may be helpful to examine its results in a well-known instance. Consider Thomas Pynchon’s short novel The Crying of Lot 49 (1966). How, in a readerly sense, is its geographic attention distributed? It is an American book, set in the United States -- in California, to be more specific, and split between the northern and southern halves of that state to be even more so. Its principal settings -- northern Kinneret-Among-The-Pines, southern San Narciso -- are fictional but, while one would have a difficult time putting them on a map, their regional associations are clear enough.

Despite the (almost) strictly domestic American setting of the book, its range of geographic reference is wider. In an important early scene, Oedipa recalls her time with Pierce Inverarity in Mazatlán, where she encountered a symbolically significant painting by Remedios Varo. The Courier’s Tragedy -- the embedded “ill, ill Jacobean revenge play,” the plot of which is recounted in minute detail and whose textual status consumes much of Oedipa's investigative efforts -- traverses western and central Europe, and may have been sourced from the Vatican library. The
European origins of the Tristero and Thurn and Taxis networks are explored at some length. Dr. Hilarious, Oedipa’s psychiatrist and a former Nazi intern at Buchenwald, provides another European link. The Peter Pinguuid Society is devoted to resisting Soviet influence; Mike Fallopian tells the story of its founding via a minor nineteenth-century naval conflict with Russia. The Paranoids are obsessed with the Beatles, with London, and with British pop culture in general. The lawyer, Metzger, starred in a movie about submarine warfare in the Dardanelles. Nefastis is aroused by China.

These facts of geographic attention do not undo the Americanness of Pynchon’s novel. But they do indicate some of the ways in which that Americanness is framed and inflected: it is western in the small-‘w’ sense, reflecting the cultural rise of California in the postwar years, yet significantly invested in European history and conflict, with almost no use for either the US east coast or for the global south (both of which play larger roles in V. and Gravity’s Rainbow).

How well is this readerly sense of the novel’s geography captured by our method? Consider the results. We find 189 total location mentions in the 1966 Lippincott first edition. Of these, 173 can be identified with a single nation, of which 112 (64.7%) fall strictly within the United States. (Non- and supra-national locations such as “Pacific” or “Europe” are excluded from our calculations of domestic ratios, since their status is often ambiguous; if we included them as non-domestic locations, the domestic fractions reported here and throughout this article would be a few points lower). Of the 112 domestic locations, 65 (58%) are in California. We miss Kinneret and San Narciso (matched as locations at the NER stage, but excluded at the geolocation stage, as is true of imaginary locations in general), which together occur 20 times in the novel; if we retained them, the overall domestic fraction would rise to 69.8% and the California fraction would rise to 66.7%. Among the non-US locations, the most frequently occurring are Britain (9 times), Italy (9), Belgium (6), Mexico (6), Germany (5), and the Vatican City (5). All of these are correctly identified and geolocated, with the exception of “Beaconsfield” (a cigarette brand that is mentioned twice in the novel and that is erroneously counted in our data as the British town bearing the same name).
The Crying of Lot 49 is near the American average in its domestic usage rate. As we will see in passing later, its use of western European locations is also broadly typical. The details, of course, are idiosyncratic, but Pynchon’s book is an example of what an American novel that’s measured to be about 65% domestic might feel like to a reader. Is this good enough? Is The Crying of Lot 49 really 65% domestic in some gut-level sense, and are the books that we measure to be 65% domestic in their geographic usage really about two-thirds domestic when measured on that same, impressionistic scale? I’m not sure that this is a generally answerable question, but it’s worth pointing out that our metric clearly captures more than first-order setting.

The above caveat notwithstanding, the method does generally provide a reliable indication of setting in the sense that the single most frequently occurring nation aligns with the human-annotated primary national setting in over 96% of cases and, at the more detailed state or provincial level, with human annotations over 92% of the time. In The Crying of Lot 49, this is particularly clear: US locations occur over ten times more often than do those in any other single nation, and California (even without Kinneret or San Narciso) out-tallies New York by a similar margin. The method is thus generally robust to fictional locations (which are very often accompanied by nearby nonfictional ones) and to individual geocoding errors (which are much more likely to go undetected in low-frequency instances than in high-frequency ones). For these reasons, it is unlikely that the method might fail to capture the general geographic sense of a country’s aggregate literary output, even as it is possible to imagine cases in which it may miss or mistake details that are important to individual readings.

The corpora
To compare internationalism in novels over time, we assembled 13 English-language corpora as summarized in table 1. Together, these collections cover British and American fiction published between 1850 and 2009, subdivided to allow comparisons by critical and market success and by divergent definitions of national origin. The largest corpora are those that capture all fiction output between the relevant dates in the HathiTrust digital library. Depending on the working definition of national origin, these corpora (labeled “Hathi XX”) range from about 6,400 to 91,500 volumes. The “Wright” and “Chicago” corpora include similarly broad
representations of (solely) American fiction published between 1851-1875 and 1880-1990, respectively. The remaining collections are smaller, each comprising hundreds of volumes that were bestsellers, nominated for US literary prizes, reviewed in prestigious journals, or written by prominent British authors.

| Identifier | Description (Source) | Nation | Years     | Vols | Words  |
|------------|----------------------|--------|-----------|------|--------|
| Bestsellers GB | Bestselling fiction in the UK before 1950 ([Underwood](#)) | GB     | 1850-1949 | 150  | 21.3M  |
| Bestsellers US Early | Bestselling fiction in the US before 1950 ([Underwood](#)) | US     | 1850-1949 | 189  | 25.8M  |
| Bestsellers US Postwar | Bestselling fiction in the US after 1950 (So) | US     | 1950-1999 | 367  | 71.4M  |
| Chicago    | Twentieth-century American fiction (Chicago Text Lab) | US     | 1880-1990 | 8577 | 897M   |
| Hathi GB   | Fiction published in the UK (Hathi) | GB     | 1850-2009 | 31071| 3.49B  |
| Hathi PR   | Fiction with Library of Congress classification PR, British (Hathi) | GB     | 1850-2009 | 6417 | 800M   |
| Hathi PS   | Fiction with Library of Congress classification PS, American (Hathi) | US     | 1850-2009 | 13141| 1.54B  |
| Hathi US   | Fiction published in the US (Hathi) | US     | 1850-2009 | 91501| 10.5B  |
| Prizes            | Fiction shortlisted for literary prizes in the US after 1950 (So) | US   | 1950-2000 | 336 | 46.4M |
|-------------------|-----------------------------------------------------------------|------|-----------|-----|-------|
| Prominent British | Fiction by prominent British writers of the modernist era (Evans and Wilkens) | GB   | 1880-1940 | 576 | 57.7M |
| Reviewed GB       | Fiction reviewed in British journals before 1950 (Underwood)     | GB   | 1850-1949 | 338 | 34.5M |
| Reviewed US       | Fiction reviewed in US journals, before 1950 (Underwood)         | US   | 1850-1949 | 210 | 24.0M |
| Wright            | Civil War-era US fiction (Wilkens)                                | US   | 1851-1875 | 1,045 | 79.8M |

*Table 1. Summary of the corpora.*

There are several definitions of national origin that are operative across the corpora, though only one is applied within each corpus. The lists of bestsellers and of reviewed books, as well as the large Hathi US and Hathi GB collections, are defined by the geography of the book business, that is, by the nation in which a book was published, collected, or reviewed. The Hathi PR and PS, as well as the Wright, Chicago, and Prominent British corpora, are defined by the bibliographer-assigned national origin of each book’s author, regardless of where the volume was produced. The US prize-nominated corpus straddles this distinction, but hews closer to the later (author-based), since many US prizes are open only to American authors. Using these diverging criteria of national origin -- some author-based, some reception- and market-based -- allows the present study to test, indirectly, for differences in international attention between authors and readers.

The variations in scope, archival sourcing, market orientation, and historical coverage across the corpora also allow for multiple perspectives on the most salient features of national literary cultures. That said, no superposition of perspectives --
and no archive -- is complete. Note, in particular, two features of primarily Hathi-based (and many other library-based) archives. First, these corpora are shaped by the decisions of the historical publishing industries in the United States and Great Britain and by the collecting practices of the university and research-oriented libraries from which Hathi volumes are drawn. Books that were never formally published or that were issued by less prestigious or non-academic presses are underrepresented in the Hathi digital library. Underrepresentation in publishing and collection disproportionately affected (and continues to affect) writing by members of marginalized groups, as well as books belonging to lower-status genres such as romance and detective fiction.

Second, the collection practices of university libraries have changed over time, as has the international scope of major publishers. In particular, the quality of publication location as a predictor of author nationality is not constant across the period 1850-2009, as shown in figure 1. Volumes published in Britain and digitized by Hathi are almost always more likely to have been written by British authors than US-published volumes are to have been written by American authors. For both nations, the domestic-author fraction present in Hathi was highest at the beginning of the period under examination (that is, in the mid-nineteenth century), lowest around the middle of the twentieth century, and has moved upward again in recent decades. This effect is strong enough that publication location becomes an objectively poor proxy for author nationality in the Hathi corpora at some points, though publication location may remain a useful index of readership or of the composition of the literary marketplace.
Are American authors homers?

Three of the corpora (Wright, Chicago, and Hathi PS) comprise books by authors judged by scholars, bibliographers, or librarians to be American. Together, these corpora span the period 1851-2009, with modest overlap. They thus provide both a summary picture of US literary internationalism across the nineteenth, twentieth, and early twenty-first centuries, and an opportunity to correlate results from multiple sources and archives. Figure 2 depicts the mean fraction of place name mentions in each of these corpora that fall within the borders of the modern United States (that is, US borders as they stood in 2019), grouped by year of publication.

Figure 1. Fraction of randomly sampled Hathi fiction volumes (n=941) for which author nationality matches nation of publication as a function of publication decade, with LOWESS fits. Marker area indicates number of volumes sampled.

Published in
US
GB
The data shown in figure 2 suggest that American authors favored domestic locations, which accounted consistently for about 60-65% of all place mentions that can be associated with any single nation. The data also show little sign of sharp departures from this average over time in any of the corpora, nor do they indicate any significant incompatibilities in their levels of domestic geographic investment despite having been compiled by different hands from varying sources over a period of more than 60 years. (The upward slope of the linear fit for the Hathi PS corpus is mathematically accurate but conceptually misleading, since the underlying data are sparse before 1980.) This is an important result, one that begins to answer the question of whether or not American authors devote much of their attention to places within the United States. As a group, they do.
Perhaps most striking in this result is the stability of domestic attention over more than 150 years. Such stability is especially notable in light of the United States’ shifting global prominence during the same century and a half. It is difficult to imagine any fully satisfactory measure of a nation’s worldwide importance; the purpose of the present article is certainly not to do so. But we have seen in previous work that the United States’ share of global GDP between 1850 and 2009 varied to a much greater extent than did American authors’ attention to locations outside the US, as shown in figure 3.\textsuperscript{13} It is possible to observe large changes in broad features of American culture over spans of years or single decades. US authors’ mean international attention appears not to be among them.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure3.png}
\caption{Comparison of domestic attention in three author-based US corpora to US global GDP share, 1850-2009. GDP marker sizes represent the relative size of the global economy, by year.\textsuperscript{14}}
\end{figure}
Is American fiction unique in its consistent devotion to domestic locations? To begin to answer this question, we can compare the above result to the fraction of domestic literary attention in books by British authors. Figure 4 adds two author-based British corpora to those displayed in figure 2. Hathi PR is analogous to Hathi PS; it is a large, contemporary-leaning collection of volumes of fiction by authors classified as British. The Prominent British corpus, derived from Evans and Wilkens, is smaller, covers the period 1880 to 1940, and is limited to novels by writers included in a handful of literary anthologies and companions of explicitly canonical orientation.

![Figure 4: Domestic attention in American and British author-based corpora, plus attention to the US in the Hathi PR (British) corpus and to Britain in the Hathi PS (American) corpus.](image)

British authors (red markers) used domestic locations at lower average rates than did their American counterparts (blue) and the British corpora show meaningful change.
over time in ways that the American corpora do not. Comparatively high-status British writing of the modernist era was more domestically inclined than was (and is) the wider run of British fiction collected by American libraries, but both groups devoted well over half of their explicit place mentions to locations outside the United Kingdom. British authors registered the falling global prominence of Britain itself -- and the rise of the United States -- via a noisy but steady exchange of locations in the United Kingdom for those in the United States across the full period, especially after the early twentieth century (compare the red and green series). American authors, although they did not devote notably more of their attention to domestic locations over time (their US fraction started high and stayed high over time), did devote less of their geographic usage to British places (yellow markers) after 1900, falling to well below 10% of overall location occurrences by mid-century.

The data from author-based national corpora suggest that both British and American writers have consistently devoted a large fraction of their literary-geographic attention to locations within their home country. This effect is much stronger and more durable among American authors; where British authors have used fewer British locations over time, American authors have shown no such trend with respect to American locations (although they, too, have come to use markedly fewer British locations today than they did in 1850). While there is no normatively correct level of domestic literary-geographic attention, the British case shows that changes to that level are possible and, hence, that the geographic inertia characteristic of American fiction is not an inevitable feature of all national literatures.

**Are readers different?**

If it appears that American authors are homers -- or, at least, that an unspecified confluence of factors produced a mostly uniform, relatively high level of domestic attention in American fiction over more than 150 years -- is the same true of American readers? This is a difficult question to answer in the absence of detailed, large-scale information about historical patterns of readership and reception. But we do have ready access to two distinct proxies for the books that were available to readers and that some readers chose to read: library collection records and historical bestseller lists.
Libraries, as a group, collect the books that librarians believe their patrons will find useful.\textsuperscript{17} While the definitions of “patrons” and “useful” at play in over 150 years of acquisitions practices in a large group of mostly research-oriented libraries vary widely and can represent only imperfectly the full range of literary output and consumption, the books that libraries hold -- and, hence, the books included in the HathiTrust digital library -- constitute one broad-based version of the literary works to which readers have had access between 1850 and today.

Figure 5 adds two new, very large, library-based corpora to the author-based datasets examined above. These are labeled Hathi GB and Hathi US, the two letters indicating the country in which a volume of fiction held by Hathi was published, regardless of the nationality of its author or authors.

\textit{Figure 5. Domestic attention in author-based and library-based corpora.}
With the reiterated caveat that the composition of these corpora is necessarily filtered through the acquisition practices of US-based libraries rather than reflecting directly the publishing output of each nation, note how different are the rates of domestic attention when considered from the perspective of what was available to readers rather than what was produced by national authors. The British case is the more straightforward of the two: British literature identified by publication location contains lower UK domestic usage on average than that among books by strictly British writers, but shows a similar decline over time.

The American case is more complex and, perhaps, more interesting. The publication-based corpus is much less domestically oriented in general, but it -- unlike the author-based US corpora -- trends toward greater domestic US attention over the course of the twentieth century. If US authors have favored American locations more or less consistently, US publishing and library collections have shown much greater geographic variation, in part due to the shifting national composition of the authors they publish and collect (see figure 1). That said, there is little evidence in this data of any recent shift toward broad-based internationalism in American fiction. If anything, fiction published in the US over the last generation or so is more domestically oriented than at any point since at least the mid-nineteenth century. To the extent that an observation like Engdahl’s (that contemporary US fiction is “too isolated, too insular”) is meant to encompass developments across the whole of American publishing (an interpretation that is by no means certain), it finds its best support here.

But perhaps scholars, critics, and ordinary readers mean something different when they talk about “American fiction.” Perhaps they care less about the whole of literary production -- which has long been much too voluminous for any single reader to grasp -- and more about the handful of books that they (and people like them) read. While large library collections help to characterize the shape of the literary marketplace, they offer a relatively weak proxy for readership, which is generally dominated by a small number of bestselling or “important” titles. To assess whether or not mainstream readers have encountered greater or lesser domestic attention in their texts, we can examine the data in American and British bestsellers, as shown in figure 6.
The bestseller data are a bit tricky -- both to see in figure 6 and to assess -- since they are so few: in the Bestsellers US Early corpus, which covers the 100-year period from 1850 to 1949, there are just 188 volumes (fewer than two per year); there are 367 in the Bestsellers US Postwar corpus (1950-1999) and 150 in the Bestsellers GB corpus (1852-1944). Because these corpora are small, the results are noisy. The noise, in turn, complicates the apparent discontinuity between the US corpora at 1950. This break is more a matter of visual perception than mathematical certainty; the weighted least-squares fits drawn through the data have high uncertainties in both their true levels and their trends. But it is safe to say that bestsellers in both the US and British cases do not diverge sharply in their distribution of domestic attention from the behavior of the larger, author- and library-based corpora. The bestsellers, in fact, most closely resemble the author-based corpora (Hathi PR and Hathi PS, not
included in figure 6): flat to slightly rising domestic attention in the US, steadily declining domestic share in the UK.

As an aside, note that the congruence of the variously defined British corpora (bestsellers, prominent writers of the modernist era, librarian-identified British authors, and UK imprints; see figure 7) supports the hypothesis that the observed differences in levels of domestic attention between the US and UK are not driven primarily by Hathi library collection practices. To put it more plainly: if we were worried that American libraries collect British books that don’t properly represent British fiction (because American librarians don’t have access to parts of the British book market, or because American readers prefer an idiosyncratic kind of British writing, or for some other reason), the fact that the results in the bestseller and prominent corpora are very similar to the Hathi-based corpora should help to set our minds at ease, at least on this specific score.

Figure 7. Domestic attention in four British corpora, showing broad convergence in level and trend.
Is serious literature different?
It appears that British and American authors, readers, and publishers did and do differ in their books’ attention to domestic locations. Their differences have been maintained across scales and periods and are larger -- in some cases, much larger -- today than they were in the past. These results support Engdahl’s claim concerning the relatively parochial nature of American fiction. They also support in an indirect sense Dimock’s argument that US literary criticism nevertheless tends to overemphasize domestic concerns, because the level of international attention in US fiction, while lower than in the British case, is still substantial. And they undercut arguments from critics and readers alike that recent decades have seen a rise or revival of the globally engaged American novel as a dominant form.

There remains, however, at least one case that is notably important to scholars, critics, and literary intellectuals, but that isn’t well captured in the data presented to this point. I mean, of course, “serious” (or “important” or “literary” or -- an old-fashioned word -- “high-brow”) literature. When Engdahl said that American authors “don’t really participate in the big dialogue of literature,” he almost certainly didn’t mean that American authors aren’t widely read outside the States or that J.K. Rowling didn’t find an American audience. He meant instead that American fiction (or American literary culture) is, at the high end of prestige, a system unto itself, one characterized by books and readers that mostly engage with one another and that, as a system, maintains comparatively high barriers to entry for non-American participants.

To evaluate how domestic and international attention behave in high-prestige fiction, we require working definitions of prestige that can be applied across many decades and on both sides of the Atlantic. Two candidate definitions that have been widely used are nominations for (select) literary prizes and reviews in high-status literary journals. The latter is, in principle, more expansive than the former (because more books are reviewed than are nominated for prizes), but both criteria revolve around the allocation of a scarce resource (prize money, page space) within a small fraction of the literary field that has high impact among status-conscious participants.
Figure 8 shows the changes in domestic attention over time in British and American novels selected for review or nominated for high-status prizes. Though the corpora are of modest size and the data are noisy, the trends in the figure are suggestive. The fiction reviewed in high-status British journals before 1950 behaves similarly to British fiction as a whole (compare figure 7); it is closest in level and trend to the large, author-based Hathi PR corpus. Likewise, fiction reviewed in high-status US journals over the same period allocates its geographic attention in ways that broadly resemble US fiction overall, and that are perhaps closest to the behavior of US bestsellers.

![Figure 8: Domestic literary attention in American and British high-status volumes.](image)

It is the set of postwar books nominated for US prizes that suggests, finally, why Engdahl’s claim about the chauvinism of contemporary American fiction struck so many knowledgeable observers of US literary culture as implausible. In this case alone among the US corpora do we find a sustained rise in international attention.
If the books to which one pays special attention belong to a system of prestige organized by domestic literary prizes, and if one emphasizes changes in the observed level of internationalism over the absolute level itself, then it will appear that US fiction became significantly less US-centric in the decades leading up to the new millennium. This trend is in keeping with the international turn of high-profile prizes outside the United States, most notably the Booker, which has been the subject of extensive commentary both academic and popular.

But prize-nominated literature in the US, although it became more international over time in the postwar period, was never notably international in comparison to other writing. This is true even within the United States, where the mean domestic fraction in books published between 1980 and 2000 was lower than the prize-nominated set in every corpus but the (restrictively American) Hathi PS set. The British corpora, meanwhile, never rose above 30% domestic on average over the same two decades.

There is, in short, little evidence of any fundamental reversal of relatively high domestic regard in books written, read, reviewed, and celebrated in the United States over the last century and a half. Engdahl was almost certainly wrong to assert that no (or very few) American authors today engage international themes or concerns in important ways, and Dimock was certainly correct to push American literary criticism circa 2000 toward greater awareness of global connection: after all, roughly a third of location mentions in American fiction, under multiple definitions of “American,” lie outside the United States. But American books do favor American locations and have done so at levels that have proven remarkably resistant to historical change.

**Specific attention does change**

Although American literature has consistently favored domestic locations, there have nevertheless been meaningful shifts over time in the detailed distribution of its international attention. The same is true of British literature. The simplest way to see these differences is to plot the fraction of location mentions that fall within each of several large countries by year, as shown in figure 9.
Figure 9. Literary attention to nine countries, by year, in two large, market-based corpora. (Top) Hathi US corpus, (bottom) Hathi GB corpus.
The lower-rightmost subplot for each corpus reproduces the fraction of attention devoted to the United States in the relevant data set, as previously discussed. What figure 9 adds is information about attention to selected nations outside the US and UK, which were previously agglomerated as “foreign” or “non-domestic.”

Three features stand out in figure 9. First, there was a notable decline over time in attention to several western European nations, including Italy, France, and Great Britain, that occupied significant narrative space early in the period. Second, there appears to have been a modest rise in attention to Japan and China in the second half of the twentieth century. Third, there was a detectable, if noisy and uneven, increase in attention to the major powers of the Second World War during the years surrounding that conflict, including the interwar period. This potentially conflict-related redistribution is somewhat more easily seen in the British corpus than in the American one.

It is unclear whether the geographic changes indicated in figure 9 accord with any standard view of twentieth-century literary geography. Previous work has found that the geography of war was linked to changes in literary attention, especially in the cases of the US Civil War and the Second World War, and there is certainly a rich critical tradition studying the literary effects of conflict, violence, and trauma. But the limited scope of traditional critical methods means that it has been difficult to generalize from the geography of individual texts to the collective features of national literatures. The same is true of the apparent partial shift from western European locations to Japan and China: the change is a plausible one under many theories of twentieth-century literary development, but it has not been previously documented at scale.

**Geographic redistribution in detail**

As important as are these selective nation-level developments of twentieth-century literary geography, they remain largely impressionistic and they do little to discern the specific geographic texture of the processes that gave rise to them. Decreased attention to Italy, for example, could have been driven by a shift away from general references to the country or by one or more specific sites within its borders that came to occupy less narrative space over time. Beyond the question of specificity versus
generality, we also face the problem of weighing large proportional changes in relatively small values (a doubling of attention to locations in India, say) to smaller proportional (but larger absolute) changes in large quantities.

To address these issues, we examine two statistical measures of the changes in attention to countries and to individual named locations in the periods before and after the Second World War (1900-1945 and 1946-2009, respectively) and before and after the fall of the Berlin Wall (1945-89 and 1990-2009). The first, Cohen’s $d$, is a measure of effect size. It calculates the number of standard deviations by which the means of the two groups, earlier and later, are separated with respect to the number of times a given location or country occurs (per 100,000 words) in each. The second, Welch’s $t$, is a hypothesis test. It measures the likelihood that the observed difference between the group means might arise by chance from populations that share the same true mean. Together, these two tests help to assess the importance (critically speaking) and the significance (statistically speaking) of the differences in geographic usage within each corpus across the twentieth century.

Countries first. Recall that the count for each nation collects not only mentions of the nation itself, in whatever form (“United States,” “America,” “USA,” and so on), but also all references to places within that nation. Among books published in the United States, the biggest mover by effect size -- by far -- was Great Britain, which dropped to 9% of total mentions in the postwar period from almost 16% in prewar volumes. France and Belgium also fell by large amounts, as did Monaco. Austria and Germany dropped, too, by slightly smaller amounts. This result is in keeping with the claim that European locations played generally smaller roles in postwar American fiction than they had during the first half of the twentieth century, perhaps reflecting a larger turn away from Europe as the center of both high-cultural influence and US-bound emigration. Gaining importance after 1945, beyond the United States itself, were countries including Vietnam, Japan, China, Poland, Mexico, and Iran. Note that these countries didn’t necessarily become important, full stop, after 1945: only about 1% of postwar place mentions were in Mexico or in Japan, and less than 0.3% were in Iran. But those levels represented large increases relative to the amount of prewar attention devoted to each of those nations.
Drawing on the observed changes in US-published literature before and after 1945, we make two notes. First, war or conflict appears to have been a major driver of literary-geographic attention. Many of the highest-ranking upward movers were nations with which the United States experienced major or sustained tension after 1945. Among downward movers, friendly and allied European nations generally experienced larger drops than did former Axis powers or Russia. Second, the count of countries that gained attention after 1945 is greater than the count of those that lost attention. In other words, American international literary-geographic attention became somewhat more widely dispersed in the postwar period than it had been before the war.

The second half of the twentieth century, splitting at 1989, shows similar trends. The United States rose in prominence. Western Europe became less important to American authors (the UK, Italy, France, Germany, and Spain all dropped). Russia dropped after 1989, too, while China and Latin American countries including Mexico, El Salvador, and Costa Rica all rose. Vietnam rose, as did Afghanistan and Iraq (the last below the level of statistical significance, although the effect size, about 0.7, was large). Again, American literature seems to have redistributed its geographic attention after 1989 in ways that broadly reflected changes in the foreign political investments of the nation. Economic shifts of the early twenty-first century, especially the rise of BRICS nations other than China, do not appear to correlate strongly with literary attention, in keeping with previous findings.

Aspects of this American story were present in British literature as well, although the details sometimes diverged sharply, especially around the two nations’ different colonial histories. Among books published in the UK between 1900 and 2009, decreasing attention was allocated to Great Britain, Belgium, France, and Spain after 1945. Gaining attention in the postwar decades were the United States, decolonizing nations including Nigeria and Jamaica, and newly created Israel. Between 1945 and 2009, again splitting at 1989, the trends are a bit harder to read and statistical significance is rare, even as effect sizes remain moderate to large. France, Belgium, Russia, Italy, and Switzerland all fell in frequency (the latter two below the level of statistical significance), while former colonial possessions of the UK were largely absent from the list of top movers one way or the other, with the exceptions of
Pakistan and Jamaica (which rose substantially within a context of relatively sparse usage, to around 0.25% of all mentions; \( d \approx 0.5 \), but not significant).

Unlike American fiction, British literature did not move sharply toward a wider range of geographic reference in the second half of the twentieth century. There were about the same number of nations that gained attention in UK-published texts after 1989 as there were that lost it. Examining the full century, there were only slightly more gainers than losers after 1945 in the British case.

With the exception of large proportional fluctuations is rarely mentioned locations, the declining salience of Belgian locations is perhaps the biggest surprise among British texts (Belgian places also dropped significantly in American literature after 1945, but their decline slowed later in the postwar period). One suspects this phenomenon has to do with Belgium’s dual role in the British literary imagination: at once the site of Great War battles, which became much less prominently featured after 1945 (mentions of “Flanders” dropped precipitously, for example), and the seat of European bureaucracy later in the century. The former, it seems, was a more appealing literary subject than the latter, but additional investigation is required to fully explain the case.

Returning to American books and examining the much smaller corpora of bestsellers and high-status literature, we observe a handful of differences. War and political rivalry remained major predictors of changes in literary attention, with Japan, Russia, and Iraq all among the top risers in books that sold very well after 1945. Bestsellers also displayed a preponderance of risers overall, indicating a diversification of postwar literary-geographic reference. Unlike the broader US fiction case, however, bestsellers focused somewhat less attention on American locations in the second half of the twentieth century, and showed very little change in their overall use of British locations. Prestigious volumes -- those that were reviewed in high-status journals or nominated for major prizes -- turned more frequently to Japan and Mexico, as well as to Poland and Russia, while devoting less attention to the UK and other western European locations. We stop short of firm conclusions regarding these corpora, however, since their relatively small sizes produce noisy data, which in turn leads to smaller effect sizes and lower statistical significance.
Finally, we note briefly the results of similar analyses performed not on countries in aggregate but on unique place names. On the whole, the patterns of change over time were similar: less Europe and more America, somewhat wider geographic dispersion, a move away from the sites of older conflicts and toward the sites of newer ones. Within the United States, literary attention appears to have followed population growth in the south and the west. In British literature, the regional terms “Africa,” “Caribbean,” and “Eastern Europe” were all major postwar gainers. American bestsellers and prize-nominated books followed patterns similar to their nation-aggregated results and to the directions of US fiction overall. In particular, “Africa” and “Mexico” (as well as “Atlantic” and “Pacific”) were among the top rising geographic terms in high-status American novels after 1945, in keeping with the argument that the postwar literature of distinction contained more markers of global engagement than did less critically lauded writing.

Taken together, these results suggest two nations at different stages of their imperial development. British fiction in the nineteenth century already engaged the geographic diversity of a global colonial power. By the early twentieth century, British literature had begun to devote less of its attention to the UK or to the core of western Europe, while giving more page space to the United States. After World War II, those trends continued, now shuffling an already diverse set of international investments and gradually continuing a long-established drift away from domestic attention. In the US, by contrast, we find a literary system the international orientation of which was modest and primarily European in the years before World War II, but that diversified its internationalism markedly during the second half of the twentieth century. What hasn’t happened yet in the American case is a decisive turn away from the geographic dominance of the United States itself.

Will American fiction follow the British example in the decades ahead as American power and influence decline from their post-Cold War peaks? It might; if it does, we should expect to see, for the first time in American literary history, a drop in the overall level of investment in US locations and, eventually, an approach toward a steady state of diversity among international locations. There exists modest evidence of increasing diversification in the present data, but little as yet to suggest that the mechanisms by which the US might be even slightly decentered in its own literature
(more internationalism in high-status books, a possible post-2000 dip in domestic share) have taken hold in the system of American literary production as a whole.

**Conclusions**

The results and analysis reported here constitute the first large-scale, comparative historical study of the literary geography of the United States and Great Britain. Collectively, they show that American literature from the mid-nineteenth through the early twenty-first centuries was consistently and significantly more domestically oriented than was British fiction of the same period. The stability of geographic self-regard among American-identified authors has also been striking: the fraction of domestic literary locations used by American writers started high, stayed high through two world wars, and remains high today. This is in marked contrast to British fiction, which was at almost every historical point more outwardly focused and became only more so over time. There is, in short, some justice in Horace Engdahl’s accusation that American literature has been “too isolated, too insular” in comparison to at least one other national literary tradition.

But the story is more complicated than that, of course. For one thing, a large fraction of American literary-geographic attention has indeed been devoted to locations outside the United States: a third or more and, in some instances, as much as 40-50%. There is no intrinsically correct level of international attention, but there are literally millions of references to international locations across American literature. One might note, too, that the level of domestic analysis appropriate to large, multicultural societies -- whatever value one considers appropriate -- is likely higher than the level appropriate to smaller or more homogeneous societies. The United States isn’t Sweden; what’s right for one probably isn’t right for the other.

Even if we were to believe, contrary to contemporary critical practice and to a portion of the evidence presented here, that most US novels remain fundamentally American in their orientation and concerns, it is surely important that they explore those concerns through references that are very often international. It is also true that, in recent decades, the American fiction that garnered the most prestige and critical attention became more internationally oriented than it was in the late nineteenth and early twentieth centuries. While the same was not true of other
corners of the US literary marketplace, the American books that were most nearly part of Engdahl’s contemporary “big dialogue of literature” were exactly the ones that were moving explicitly toward a more global outlook.

When we consider the specific distributions of international attention, rather than the simple domestic/foreign split, we find that the geography of US literature became more diverse during the twentieth century. That is, while the total amount of geographic attention directed beyond the borders of the US stayed relatively constant (or, in some cases, decreased) between 1900 and 2009, that constant quantity of attention was dispersed more intensively across more nations after 1945 than it had been during the first half of the century. As seen in previous work, war and political rivalry appear to have been major drivers of literary attention. Traditional sites of cultural prestige (Great Britain, France, London, Paris, Rome, etc.) did not disappear -- on the contrary, they remained frequently invoked even into the twenty-first century -- but they received a smaller portion of attention than they had in earlier decades.

The present study is also among the first explicitly to compare large national-literary corpora constructed according to divergent definitions of national belonging. These definitions include those based on author identity, on the sites of publication output, on the tastes of readers, and on the practices of critics. The goal has not been to identify a supposed best or truest version of American or British literature. There is obviously no such thing. But comparison across plausible versions of nationality has allowed the study to begin to identify features that do (and do not) differ depending on what one might emphasize as the bases of national literary affinity.

Despite the scope of the datasets examined, there remain important limitations and opportunities for future work. It has not yet been possible to explore the results of these methods in other national or regional literatures beyond those of the United States and Great Britain, but there is no fundamental barrier to doing so; the findings would be of obvious value. A comparison of US literary output to that of Europe (as a whole) and to China would be especially useful, since they represent instances of population size, social complexity, and economic weight that would provide important counterpoints to the British case.
Nor do the current corpora fully capture the literary output of the nations they do include. In addition to the systematic exclusions from library corpora discussed above, we have made no effort in the present research to capture literature published in newspapers, periodicals, or other media, which were historically important outlets for both mainstream and marginalized writers. The same is true today with respect to online publications, which have radically lowered the barriers to publication and readership, but which are not included in our data. Facets of authorial identity beyond national affiliation are obvious areas of interest, as are the comparative historical dynamics of nonfiction writing in both long form (histories, biographies, essays, etc.) and shorter, faster-moving formats such as newspaper articles, pamphlets, and social media posts. All of these are areas to be explored.

These limitations notwithstanding, the study has argued that American literature showed a preference for domestic locations compared to the British example over the last century and a half. This preference was largely and surprisingly stable over time, but its overall stability ought not to mask important shifts in its international attention that aligned with the coarse features of American foreign political engagement. While British literature was consistently more international in its geographic usage, it, too, responded in easily measurable ways to the politics of war, rivalry, and decolonization in the twentieth century.

With these results in hand, we possess not only a widely informed response to the critical and cultural reorientation of American literary studies in the twenty-first century, but also a new background against which to compare the literary geography of other national traditions, of other subsets of American and British writing, and of new directions in US literary output in the years ahead.

References

1 Engdahl’s remarks were widely reported at the time. See, for instance, the original AP story, the Guardian’s follow-up, and the New York Times’ coverage.

2 The MLA bibliography contains not a single reference to Engdahl in connection with the Nobel, apart from an article of Engdahl’s own.

3 Wai Chee Dimock, Through Other Continents: American Literature across Deep Time (Princeton: Princeton UP, 2006), 2-3.
4 Caroline F. Levander and Robert S. Levine, eds, Hemispheric American Studies (New Brunswick, NJ: Rutgers UP, 2007); Rachel Adams, Continental Divides: Remapping the Cultures of North America, (Chicago: U of Chicago P, 2009).

5 Paul Giles, The Global Remapping of American Literature (Princeton: Princeton UP, 2011); Caren Ir, Toward the Geopolitical Novel: U.S. Fiction in the Twenty-First Century (New York: Columbia UP, 2013); Paul Jay, Global Matters: The Transnational Turn in Literary Studies (Ithaca, NY: Cornell UP, 2010); Bruce Robbins, “The Worlding of the American Novel.” The Cambridge History of the American Novel (Cambridge, Cambridge UP, 2011), 1096–1106.

6 Examples of quantitative geographic analysis of literary texts include David Cooper, Christopher Donaldson, and Patricia Murrieta-Flores, eds., Literary Mapping in the Digital Age, (Burlington, VT: Ashgate, 2016); David Cooper and Ian N. Gregory, “Mapping the English Lake District: A Literary GIS,” Transactions of the Institute of British Geographers 36, no. 1 (2011): 89–108; Elizabeth F. Evans and Matthew Wilkens, “Nation, Ethnicity, and the Geography of British Fiction, 1880-1940,” Journal of Cultural Analytics, 2018; Ryan Heuser, Franco Moretti, and Erik Steiner, “The Emotions of London,” Pamphlets of the Stanford Literary Lab (Stanford, CA: Stanford University, 2016); Matthew Wilkens, “The Geographic Imagination of Civil War-Era American Fiction,” American Literary History 25, no. 4 (2013): 803–40.

7 For details of the present method, see Evans and Wilkens, op. cit., and the code supplement to this article. Note that, in the present work, the threshold for predicted fiction probability has been raised to 0.8; in previous work, we used a lower threshold (0.5). In effect, we now exclude some volumes that we are less confident contain primarily narrative fiction. See the linked article for a discussion of the systematic differences in geographic usage across fiction and narrative nonfiction texts.

8 As in previous work, we use contemporary (circa 2019) national boundaries in all cases. For the US corpora, this means that a tiny fraction of domestic references are to locations or territories that were not under US control at the time of a source work’s publication. One might also consider a slightly larger fraction (about 1%) of such references to pre-statehood territories as only ambiguously domestic. In either case, an alternate treatment would have no material impact on the present results.

9 In addition to the sources cited in note 6, see also the thoughtful treatment by Cameron Blevins in “Space, Nation, and the Triumph of Region: A View of the World from Houston,” Journal of American History 101, no. 1 (2014): 122–47.

10 For additional information, see the code supplement to this article, as well as chapter 3 of Ted Underwood, Distant Horizons: Digital Evidence and Literary Change (Chicago, 2019); Elizabeth Evans and Matthew Wilkens, op.cit.; and Matthew Wilkens, op. cit. For genre determination in the Hathi datasets, see Ted Underwood, Boris Capitanu, Peter Organisciak, Sayan Bhattacharyya, Loretta Auvil, Colleen Fallaw, J. Stephen Downie (2015), “Word Frequencies in English-Language Literature, 1700-1922 (0.2)” and associated work in progress. An overview of the Hathi fiction corpora is provided in Ted Underwood, Patrick Kimitus, and Jessica Witte, “NovelTM Datasets for English-Language Fiction, 1700-2009,” Journal of Cultural Analytics, 2020. Lists of bestselling and prizelominated novels by American authors were supplied by Richard Jean So and Teddy Roland from publicly released records. Hathi PS contains a small number (<1%) of volumes by Canadian authors.

11 Assignments of author national origin follow the guidelines of the Library of Congress, which rely on accepted scholarly use. In practice, there are relatively few difficult cases over most of the period in question, though this fact does not diminish the potential complications in any individual instance.

12 Excludes volumes by authors of unknown or ambiguous national origin.

13 Matthew Wilkens, “The Perpetual Fifties of American Fiction,” in Neoliberalism and Contemporary Literary Culture, ed. Mitchum Huehls and Rachel Greenwald-Smith (Baltimore: Johns Hopkins UP, 2016), 181–202.

14 GDP values are harmonized and calculated in inflation-adjusted dollars. US GDP share calculated relative to nine other major economies. For details of the GDP measurement method, see Wilkens, “Perpetual Fifties,” op. cit. Data
are derived from the Maddison Project Database, version 2013, Bolt, J. and J. L. van Zanden (2014); see also “The Maddison Project: collaborative research on historical national accounts,” The Economic History Review, 67, no. 3 (2014): 627–651.

15 Domestic British locations are those that fall within the present-day borders of the United Kingdom of Great Britain and Northern Ireland. The so-called Home Nations (England, Scotland, Wales, and Northern Ireland) are first-level administrative units within the UK. Thus “Britain,” “UK,” “England,” and “Wales,” for example, are all counted as British domestic locations for our purposes. All former British colonial possessions are counted as non-British, even if they were under British rule at the time a book was published. In general, British literary references to “Britain” and to locations in England significantly outnumber those to other British and (conceptually or historically) British-linked places. For more on the status of former British colonial territories in particular, see Evans and Wilkens, op.cit., and references therein.

16 Reception-oriented book-historical scholarship of the type practiced by Janice Radway, Priya Joshi, and others has proven valuable at micro- and meso-scales and might be extended profitably toward market-wide scope in the future. More strictly business-oriented studies of the publishing industry, such as Albert Greco, Clara Rodríguez, and Robert M. Wharton, The Culture and Commerce of Publishing in the 21st Century (Stanford, CA: Stanford UP, 2006), are useful, but tend not to emphasize problems of readership.

17 The motto of the American Library Association, adopted in 1892, is “the best reading, for the largest number, at the least cost.” On the historical practices of librarians and on their self-identified role as “apostles of culture,” see Dee Garrison, Apostles of Culture: The Public Librarian and American Society, 1876-1920 (New York, Free P, 1979) and Lynne Tatlock, Matt Erlin, Douglas Knox, and Stephen Pentecost, “Crossing Over: Gendered Reading Formations in the Muncie Public Library, 1891-1902,” Journal of Cultural Analytics, 2018.

18 On the role of bestsellers and blockbusters in American publishing, see Joel Waldfogel, Digital Renaissance: What Data and Economics Tell Us about the Future of Popular Culture (Princeton, NJ: Princeton UP, 2018); Alan Sorensen, “Bestseller Lists and Product Variety,” Journal of Industrial Economics, 55, no. 4 (2007): 715-738; and Greco, Rodríguez, and Wharton, op. cit.

19 The academic literature on literary prestige is too voluminous to cite in detail. For that reason, I note only that I am grateful to James English for insightful comments pointing in this direction and for his important work in The Economy of Prestige (Harvard, 2005). For attempts to work with large-scale quantitative data concerning literary prestige, see especially Mark Algee-Hewitt et al., “Canon/Archive: Large-Scale Dynamics in the Literary Field” (2016); J. D. Porter, “Popularity/Prestige” (2018); and chapter 3 of Underwood, Distant Horizons, op. cit.

20 The rise in international attention is here visible as a decline in its inverse, domestic attention.

21 To quantify the trend, the fraction of domestic locations in prize-nominated fiction in the US decreased by about 0.3 percent per year between 1945 and 2009 ($p=0.02$), or more than 10 percentage points overall.

22 On the relationship between the Booker and the geographic expansion of British fiction after 1980, see especially Kara Donnelly, “The Booker Prize: Literature, Britain, and the World, 1968-1999,” PhD dissertation, (University of Notre Dame, 2015) and Graham Huggan, “Prizing ‘Otherness’: A Short History of the Booker,” Studies in the Novel 29.3 (1997), pp. 412-33.

23 On conflict and literary geography at scale, see Wilkens, “Geographic”; and Wilkens, “Perpetual,” both op.cit.

24 Unless otherwise noted, all results are significant at the (adjusted) $p < 0.05$ level after applying the Bejamini-Hochberg procedure to account for multiple comparisons. See code supplement for details of the adjustment and for tables of results.

25 We might note further that the list of countries with which the United States has experienced some form of tension or rivalry over the last 75 years is long, indeed.
A note on Russia: The present study uses 2019 boundaries for Russia. Locations in former Soviet republics are assigned to their present-day nations. We resolve instances of “Soviet Union” to Russia and translate Soviet-era place names, so far as possible, into their contemporary Russian equivalents.

Wilkens, “Perpetual,” op.cit.

Israel also gains in the US case, though it falls further down the list of risers, likely due to the more pervasive use of biblical locations in religiously themed American fiction during the first half of the century.