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Citation analysis

An empirical approach to professional literary interpretation

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This paper presents series of historiometric studies that exemplify the value of “citation analysis” as an empirical approach to professional literary-critical interpretation, especially with respect to the question of the “literariness” of literary texts. Specifically, the studies show that professional interpreters of Wordsworth’s poetry, across more than a century of time and despite widely varying critical approaches, tend to pay more attention to and therefore more frequently cite lines that involve prospective enjambments. Lines involving nominative noun phrase and retrospective enjambments, however, did not reveal the same correlation with frequency of citation. The studies thus suggest that literariness does indeed have a relatively stable textual component that may be discriminated through citation analysis of professional interpretations of individual literary texts by authors writing in distinct genres of literature and in different periods in literary history.

Keywords: literariness, interpretation, foregrounding, citation analysis, enjambment, Wordsworth

A central project in the scientific study of literature has been the empirical testing of the hypothesis of *literariness*, which holds that the stylistic features and discursive strategies that are typical of literary texts will dependably contribute to distinctive experiential effects in readers (Miall, 2011). The theoretical construct of *foregrounding* in particular – that is, the production of attention-getting markedness through the structural imposition of phonetic, prosodic, morphological, syntactic, and conceptual parallelisms and/or through strategic deviations from conventional, contextual, or cotextual expectations – has been extensively studied and progressively refined (e.g., Bálint et al., 2016; Bohrn et al., 2012, 2013; Hanauer, 1998; Jacobs 2015a; Kraxenberger & Menninghaus, 2016; Menninghaus et al., 2015; Miall & Kuiken, 1994; van Peer, 1986; van Peer,

Hakemulder & Zyngier, 2007). However, virtually all of these studies have focused on whether and how foregrounding affects the experience of literary *reading* as opposed to other aspects of literary practice (Hanauer, 2011), including literary *interpretation*.¹ This study begins to redress the imbalance by exemplifying a methodology – citation analysis – that identifies which passages and features of a literary text have attracted the most attention from professional literary critics over time. To what extent do these most-attended passages correlate with the most foregrounded passages in the given text? Or, putting the question the other way, what do the most attention-getting passages tell us about the nature and effects of literary foregrounding, if anything?

The effort to confirm that a special kind or quality of experience results from textual foregrounding is necessarily two-pronged. As Miall (2006) has argued, “we must demonstrate that a distinctive kind of processing during reading corresponds to the presence of foregrounding. If we find evidence of such processing, we have then still to establish whether it is put in place by the reader’s literary education or is a sign of an intrinsic capacity for literary response” (pp. 192–193). Studies such as van Peer (1986), Miall and Kuiken (1994), and Miall and Kuiken (1999) have answered both demands by showing that foregrounding correlates positively with reading time, attentional focus, and affective involvement regardless of a reader’s level of literary education or expertise. Do these distinctive processing effects of literary foregrounding translate in any meaningful and measurable way

1. Devotion of attention to literary reading as opposed to other forms of literary practice (e.g., writing, publishing, distributing, marketing, reviewing, interpreting, etc.) has been motivated chiefly by pragmatic considerations having to do with empirical access to the phenomenon in question and especially our ability to manipulate it in controlled experimental situations. Readers of literature can be observed and measured in various ways as they voluntarily perform the continuous act of reading in controlled conditions. However, this kind of *in vivo* experimental design seems much less plausible for the study of what actual writers and professional interpreters of literature do, for both writing and interpreting literature are (typically) much more prolonged and discontinuous processes of *creation* that are rarely, if ever, simply to be performed on demand, as reading may be (Miall, 2006). Moreover, because of the specialized nature of their respective tasks and skill sets within the literary field (Bourdieu, 1993), the number of living writers and expert interpreters of literature at any given time is, by comparison to the number of living readers, diminishingly small, so that the representativeness of any subset is easy to question and difficult to validate. Experiments in literary reading, by contrast, can be replicated again and again with cross-validating samples from the general population, providing ever-increasing confidence in the generalizability of the findings in question (e.g., van Peer, 2007).

to the process that yields a well-formed interpretation, especially in professional readers who produce such interpretations for a living?²

For example, a number of studies have demonstrated that the graphic presentation of poetry, in which the line-ending is determined conventionally by prosodic considerations rather than arbitrarily by page margins, systematically affects the reading experience, in terms of slower reading times, differently distributed eye movements, different comprehension strategies, and greater verbatim recall, by comparison to prose controls (Fish, 1980; Hanauer, 1998; Koops van't Jagt, 2014). Furthermore, in prosodically determined lines, the way the syntax of the verbal sequence intersects with the line ending, yielding either a conjunction of syntactic and prosodic boundaries ("end-stopping") or a disjunction of syntactic and prosodic boundaries ("enjambment"), has likewise been theorized to influence reading experience, differentially distributing attention and thereby creating more or less powerful foregrounding effects, especially in predominantly end-stopped poems (Fowler, 1966; Freeman, 1968; Hollander, 1975). As many theorists have noted, however, "conjunction vs. disjunction" in this context must be a relative rather than absolute distinction, for certain syntactic boundaries subsume others (e.g., [sentence[clause[phrase[word]]]]). Enjambling a sentence across a higher-ranking boundary (e.g., between clauses) is presumably less arresting or attention-getting than enjambling it at a lower-ranking boundary (e.g., between words constituting a single phrase) (Heller, 1977; Leech, 1969).

Enjambments also appear to differ depending on whether or not they are immediately recognizable as such, that is, whether they are "prospective" or "retrospective" enjambments (Golomb, 1979). Koops van't Jagt et al. (2014), for example, found such differential effects when comparing these two types of enjambment against end-stopped and prose controls. To explain the critical distinction between prospective and retrospective enjambment, Koops van't Jagt et al. (2014) refer to the final six lines of William Carlos Williams' poem "XI" from *Spring and All* (sometimes anthologized as "The Right of Way"):

2. The distinctions between literary *reading* or *experience* and literary *interpretation*, and between either of these and literary *response* more generally, are theoretically problematic; I mean to give them their due elsewhere (Bruhn *in progress*). In the meantime, see Fialho et al., 2011; McCarthy, 2015; Jacobs, 2015a; Kuiken, 2015. For the purposes of this article, "literary interpretation" effectively means "published artifacts of the interpretative process," which are evidently different from and yet presumably related to the experiential process of reading. As Uri Margolin (2008) reminds us, "in the context of empirical historical work, reception [i.e., reading] and post processing [i.e., interpretation] are inevitably collapsed together. We have no access to past receptional activities except as recorded in texts, which ultimately makes textual analysis the only major method of verifying any claims made in the historical empirical study of literature" (p. 14).

Why bother where I went?
for I went spinning on the

four wheels of my car
along the wet road until

I saw a girl with one leg
over the rail of a balcony

(p. 4)

Of these six lines, only the first is graphically end-stopped; the final one must be end-stopped as well, but Williams' omission of terminal punctuation creates an effect similar to enjambment, a "condition of imaginative suspense," as Williams (1923) himself calls it in the prose commentary that immediately follows, as to what, if anything, might (grammatically) ensue. Of the remaining lines, the second and fourth, ending on an article ("the") and a conjunction ("until") respectively, illustrate *prospective* enjambment, in which the syntactic structure (here, a noun phrase and subordinate clause, respectively) is *obviously* incomplete at the line ending, causing the reader to "look out" or "ahead" to the next line in order to resolve a syntactic unit that has been initiated but left disturbingly incomplete (i.e., foregrounded). Lines three and five of the fragment, on the other hand, represent different degrees of *retrospective* enjambment, in which the syntactic structure is *apparently* complete at the line ending but then more or less arrestingly reopened at the start of the following line, theoretically causing the reader to "look back" to the previous line or lines as they reparse the syntax. Thus the terminus of the third line marks the actual completion of both a noun phrase ("the / four wheels of my car") and the larger adverbial phrase in which that noun phrase functions ("spinning on the / four wheels of my car"), and it marks the *potential* completion of a whole clause ("for I went spinning on the / four wheels of my car") as well. However, the fourth line begins with another adverb ("along") that modifies the main verb ("went") of the clause, revealing that the clause was only *apparently but not actually* complete at the end of the third line. The foregrounding effect of the retrospective enjambment in this case is comparatively slight, however, as the new information ("along the wet road") may be readily integrated in the reopened clause, without requiring further adjustment of the understanding already achieved. By contrast, a much more powerful foregrounding effect may be achieved by the retrospective enjambment of the fifth line, as a result of which the apparently complete noun phrase "a girl with one

leg” must be radically reanalyzed to refer to a girl with two legs, one of which she has placed “over the rail of a balcony.”³

The apparent syntactic completeness of retrospective enjambments such as “a girl with one leg” makes them function in reading rather like the kind of prospective enjambment that follows a nominative noun phrase, dividing it from its predicate. In both cases, the reader achieves a syntactic and semantic integration at the level of the phrase before proceeding to the next line to discover further (and more or less easily integrated) syntactic information. In some kinds of prospective enjambment, by contrast, there is no such integrative way-station at the line ending, as there apparently is with retrospective enjambments and actually is with nominative noun phrase enjambments. This helps to account for their different effects in the eye-tracking experiments of Koops van’t Jagt et al. (2014). For retrospective as opposed to prospective enjambments specifically, Koops van’t Jagt et al. predicted longer reading times at the end of enjambed lines and more regressions from the following line back to the enjambed line. The second effect, more regressions for retrospective than for prospective enjambments, was not confirmed. The first effect, longer reading times or “total gaze” at the line break (as compared to prose controls), held equally for end-stopped lines and retrospective enjambments, but, “[i]mportantly, prospective enjambments did not show this effect,” suggesting “that whenever it is possible to interpret the fragment, readers will do so, leading to longer reading times due to integration; when the fragment is syntactically incomplete, however, as with prospective enjambment, there is no evidence for such integrative processing” (Koops van’t Jagt et al., 2014, p. 20). Processing of the lines following prospective and retrospective enjambments also differed. While, in terms of eye-tracking, both kinds involve longer first fixations on the second word of the line following an enjambment than that word receives in prose controls (where the exact same line was presented continuously without lineation), this effect was “numerically larger for the prospective than the retrospective condition, which may be attributed to a kind of ‘deferred maintenance’ [i.e., the pause of syntactic integration that did not occur at the point of enjambment] taking place after the break” (Koops van’t Jagt et al., 2014, p. 20). In other words, while both kinds of enjambment tend to recruit additional attention to the line following the enjambment, prospective enjambments appear to do so more powerfully – except for nominative noun

3. Dolin (1993), for example, testifies to the “shocking” effect of this “enjambment par excellence” (insofar as it wittily involves two legs or *jambes*, which likewise stand at the root of the French *enjambement*).

phrase enjambments, which presumably do not heighten attention to the following line at all.⁴

These fascinating empirical results would appear both to confirm and to disconfirm literary-critical speculation about the relative attention-getting effects of prospective and retrospective enjambments. Both kinds in fact heightened attention with relatively different strengths of effect, but, contrary to expectation, the *prospective* variety, at least in this experiment, did so more dependably and forcibly. Hollander (1975) long ago identified the need for a “taxonomy” or “spectrum” of “all the possible ways of terminating lines, considered not as boundaries or termini, but as the kinds of cutting into syntax which the slant-dash notation illustrates” (pp. 98–99), but he predicted that the strongest variety would be retrospective enjambments, insofar as they “force[...] a reinterpretation of the position of the syntactic cut at the line break, based upon the discovered *contre-rejet*” (p. 106). In keeping with this theory, Koops van’t Jagt et al. (2014) predicted more regressions from the second (or post-enjambment) line back to the first line for retrospective enjambments than for prospective ones, but this effect was not confirmed. Moreover, the differential effect that did appear (namely, longer second line [or post-enjambment] fixations for prospective enjambments) seems to support the recent theoretical arguments of Heiden (2014), which call into question Hollander’s (1975) characterization of enjambment’s effects as more or less “violent interruptions” of the unfolding syntax, but which nevertheless affirm that markedly incomplete or unresolved syntax at the line ending (i.e., prospective enjambment) “cues attention” to the syntactic unit in question and signals its thematic significance (p. 275).

What is needed to adjudicate between Heiden’s (2014) and Hollander’s (1975) competing hypotheses concerning the cognitive effects of enjambment is a bevy of relevant empirical evidence, and Koops van’t Jagt et al.’s (2014) study is clearly an important contribution to that end. However, because their experimental stimuli for both non-enjambed and enjambed conditions were two-line fragments rather than complete poems, there is a serious question as to whether their results can be generalized to readers of actual poems, which often incorporate *all varieties* of line endings (end-stopped, prospectively enjambed, retrospectively enjambed) in various proportions. Do the differential effects of prospective and retrospective enjambment as reported in Koops van’t Jagt et al. obtain in reading experiences in the wild, and, if so, to what extent are these differences *meaningful*? Or, more generally and technically: Do the empirically demonstrated main effects

4. Notably, the researchers did not count a break after a nominative noun phrase as an enjambment at all, as their first example of poetry “without” enjambment shows: “The light of the lantern / does not throw suspicious long shadows on the street” (Koops van’t Jagt et al. 2014, 9).

of foregrounding on (professional) readers' attention persist in the interpretative products those readers subsequently produce? How can this question itself be answered empirically?

Backward-engineering is one solution: Take a population of literary-critical interpretations of a given text and examine it empirically (i.e., using an objective, repeatable method of measurement) to determine whether different kinds of enjambment (or any formal feature of interest) have regular or predictable effects within the population. In a series of preliminary studies, some of which are reported here, I formulated and evaluated two such "backward-engineered" empirical approaches to published literary interpretation.

The first or *hypothetico-deductive* approach borrows the methodology of pioneering studies of the effects of foregrounding on literary reading such as van Peer (1986), Miall and Kuiken (1994), and their successors. In this approach, a researcher or research team with literary expertise analyzes passages of literary texts (lines, stanzas, sentences, paragraphs, etc.) for the presence of various kinds of foregrounding (phonetic, semantic, syntactic, etc.) in order to arrive at a "cumulative foregrounding index" (CFI) for each passage; a higher CFI value predicts that actual readers will spend more time reading the given passage and will rate it as more striking and/or affecting than passages with lower CFI values. To adapt this hypothetico-deductive method to a population of published interpretations rather than actual readers of a given text, the researcher or (preferably) research team performs the same analysis to arrive at the same CFIs per passage but adjusts the resulting prediction to state that *the most foregrounded passages will be most frequently cited in professional interpretations over time*. The underlying assumptions in this case are (a) that foregrounding is indeed cumulative, (b) that more foregrounding in a passage dependably recruits more attention to that passage, and (c) that passages to which more attention has been paid are more likely to be remembered and cited as part of subsequent interpretation.

A second possible empirical approach to published literary interpretation, based on methods pioneered by Zöllner (1990) and Simonton (1989, 1990), and recently powerfully extended by Jacobs et al. (2017), may be called *historiometrical*. Effectively the reverse of the hypothetico-deductive procedure (and logically its precursor), historiometry involves collecting and measuring the empirical data set first in order to generate rather than confirm or falsify predictions. For the purposes of citation analysis, this means collecting a population of professional interpretations of a given literary text and measuring the frequencies with which discrete passages of that text (e.g., lines, stanzas, sentences, paragraphs) are cited. Subsequent analysis of the most and least frequently cited passages may reveal systematic differences that can then be reframed as hypotheses about what kinds of textual features are more and less likely to capture readers' (and therefore

interpreters') attention. In terms of underlying assumptions, this approach shares with the hypothetico-deductive approach the assumption that degree of attention will correlate with frequency of citation (FOC), but the historiometric approach does not make any assumptions, at least initially, about whether foregrounding is simply an additive function, such that more foregrounding (more kinds, realized in more deviant ways) necessarily recruits more attention. Foregrounding may be hierarchical or interactive instead, such that one kind "naturally" dominates or diminishes another (e.g., semantic in relation to phonetic), or it may be multidimensional and scalar, such that the context of use (including internal norms established by the discursive context) determines the degree to which any particular kind of feature will be experienced as foregrounded (Jacobs, 2015b).

In a first attempt to assess the viability of citation analysis as an empirical approach to literary interpretation, I adopted the hypothetico-deductive method, analyzing three Wordsworth poems for different kinds of foregrounding and predicting that passages with the greatest density of foregrounding would be, on average, the most frequently cited in the population of professional interpretations of the given poem over time. Specifically, I assigned numerical values to four sets of variables – metrical deviations, rhyme deviations, deviations with respect to average real sentence length, and emotional salience in narrative structure – in order to calculate a CFI for each stanza in two of the poems ("The Complaint of a Forsaken Indian Woman" and "The Last of the Flock") and for each line in the third ("Stepping Westward"). Though the CFI accurately predicted the relative FOC for six out of the stanzas of "The Complaint," the highly correlated CFI and FOC rankings ($r_s(6) = .636$) nevertheless indicated a trend at best ($p = .124$). Despite strategic adjustments in the CFI ranking model, this trend was not observed in the populations of interpretations for the other two poems ($r_s(9) = .399$, $p = .253$ and $r_s(25) = .168$, $p = .411$, respectively).

Having obtained mixed results with the hypothetico-deductive method, I switched to the historiometric method, beginning with the largest population of professional interpretations of a single poem that I had collected (for "Stepping Westward," $n = 64$) and analyzing it for any patterns of structural difference between the most and the least frequently cited lines. Of all the kinds of foregrounding I had ranked and summed as hypothetico-deductive CFIs, only one appeared to correlate with FOC under the historiometric approach: namely, *prospective enjambment*. To validate this finding, I analyzed three more populations of professional interpretations of three additional Wordsworth poems using the same historiometric method. Because they alone yielded significant results, I report on only these historiometric studies in the following section.

Methods and results

Citation analysis of “Stepping Westward”

Method

Rather than attempting to predict FOC in advance, the historiometric method begins by collecting interpretations, counting citations, and asking whether the resulting frequencies reveal any significant patterns distinguishing the most from the least cited passages. Sixty-four professional interpretations of “Stepping Westward” were collected, ranging in date of publication from 1876 to 2016. In a given interpretation, a line of the poem was counted as cited if any part of it was either directly quoted or indirectly paraphrased. Thus, to illustrate the minimal case, Brooke’s (1920) use of “boundless” in describing the poet’s “sense of boundless onward movement” was counted as a citation of line fourteen of “Stepping Westward,” which reads “Of something without place or bound” (Wordsworth, 1983, p. 179). The number of times a particular interpretation cited a given line was *not* tabulated, only the fact that the given line *was* cited at least once in that particular interpretation. Each interpretation was also coded for date of study, type of study (internal or “hermeneutic” readings in poetics and literary history vs. external or contextual readings in cultural studies and biography),⁵ and whether discussion of the poem was central or incidental to the critic’s main argument.

Line-by-line FOCs were then tallied and the results analyzed for any commonalities among distinct groups of lines (e.g., among the most cited lines, among the least cited lines, etc.).

Results

Of all the foregrounding factors contributing to the CFI calculation in the inconclusive hypothetico-deductive studies summarized in the introduction, only one – enjambment – appeared to be distributed non-randomly in the FOC data for “Stepping Westward.” In Table 1, the lines of “Stepping Westward” are arranged by actual frequency of citation in the interpretative literature and coded for the presence of different kinds of enjambment relations (including the fact of following an enjambed line).

Even at a glance, the table appears to show a fairly strong correlation between enjambment and frequency of citation. Eleven of the top twelve most frequently cited lines (nearly 92%) involve enjambment relations; only seven of the remaining fourteen (50%) do. Among those seven less frequently cited lines, five involve

5. The “internal/external” distinction may be found in Miall, 2006, 89–90 and is defended theoretically in Fowler, 1991.

Table 1. Kinds of enjambment and frequencies of citation, by line, for “Stepping Westward”

Line #	Enjambment (if any)	Interpretations citing line
12	FE	69%
1		64%
25	FE; EIV	64%
26	FE	64%
24	FE; EDO	63%
14	FE	59%
15	EDO	56%
23	ETV	55%
13	EC	53%
16	FE	45%
11	EC	44%
22	FEN	44%
2		36%
8		36%
21	EN	36%
20	FE	33%
4		31%
7		31%
9		31%
10		31%
5	FEN	30%
18	FEN	30%
3	EN	25%
6		23%
17	EN	23%
19	ETV	17%

Note. EC=enjambment after copula; EDO=enjambment within direct object or after front-shifted direct object; EIV=enjambment after intransitive verb; EN=enjambment after nominative phrase; ETV=enjambment after transitive verb; FE=follows prospective enjambment; FEN=follows nominative phrase enjambment.

enjambments following nominative noun phrases whereas only one in the top twelve does. This suggests that *kind* of enjambment matters and, further, that the nominative kind is significantly less striking, which is to say less attention-getting, than other kinds. Lines involving enjambment after a nominative noun phrase are thus like lines involving no enjambment relations, much less likely to be cited than

lines involving other kinds of enjambment. If nominative noun phrase enjambments are removed from Table 1, as in Table 2, the correlational picture becomes even clearer.

Table 2. Kinds of enjambment and frequencies of citation, by line, for “Stepping Westward,” excluding nominative phrase enjambments

Line #	Enjambment (if any)	Interpretations citing line
12	FE	69%
1		64%
25	FE; EIV	64%
26	FE	64%
24	FE; EDO	63%
14	FE	59%
15	EDO	56%
23	ETV	55%
13	EC	53%
16	FE	45%
11	EC	44%
22		44%
2		36%
8		36%
21		36%
20	FE	33%
4		31%
7		31%
9		31%
10		31%
5		30%
18		30%
3		25%
6		23%
17		23%
19	ETV	17%

Note. EC=enjambment after copula; EDO=enjambment within direct object or after front-shifted direct object; EIV=enjambment after intransitive verb; ETV=enjambment after transitive verb; FE=follows prospective enjambment

Now, ten of the top twelve lines (83%) cited by 44% or more critics reveal enjambment relations, as opposed to only two of the remaining sixteen lines (12.5%), which are (accordingly?) cited by 36% or fewer critics.

A series of Spearman rho analyses reveals a significant association between lines featuring prospective enjambments and FOC but only when nominative noun phrase enjambments and the lines following them are discounted in the CFI. Table 3 shows four different calculations of the Spearman coefficient between CFI and FOC, where the CFI was calculated solely on the basis of enjambment and systematically adjusted to discriminate between kinds of enjambment and their relative strengths of effect.

Table 3. Correlations between CFI and FOC for “Stepping westward” with CFI values incrementally adjusted by kind of enjambment

“Stepping Westward”	All enjambments = 1	(F)EN = .5	(F)EN = 0	FE = 1.5, (F)EN = 0
Spearman’s Rho Coefficient	.299	.487*	.583**	.637**
Two-tailed significance	.138	.012	.002	.000

EN = nominative noun phrase enjambment; FEN = line following a nominative noun phrase enjambment; FE = line following a prospective enjambment.

* Correlation is significant at the 0.05 level. ** Correlation is significant at the 0.01 level.

Thus reading from left to right, Table 3 shows the correlation coefficients and two-tailed significance for the following conditions: (a) all enjambment kinds and relations (including the fact of following an enjambment) are valued equally in the CFI, (b) lines that are enjambed following a nominative noun phrase (EN) and lines that follow a nominative noun phrase enjambment (FEN) have half the value of all other kinds of enjambment in the CFI, (c) nominative noun phrase enjambments and the lines following them (EN and FEN) have no value in the CFI, and (d) nominative noun phrase enjambments and the lines following them add no value to the CFI, but lines following the remaining enjambments add half again more value than other kinds of enjambment to the CFI. With each incremental adjustment from left to right, the correlation coefficient increases in stepwise fashion, from a low coefficient that is not significant to one that is significant at the $p < .05$ level, then to one that is significant at the $p < .01$ level, and finally to a very high coefficient that is significant at the $p < .001$ level. The increasingly strong associations between CFI and FOC under the four different conditions seem to indicate that, at least among professional interpreters of this particular poem ($n = 64$), nominative noun phrase enjambments have comparatively little attention-getting effect, other kinds of enjambment have considerably more attention-getting effect, and lines following these other kinds of enjambment have the most attention-getting effect and

are therefore the lines most likely to be cited in professional interpretations of the poem.

To assess whether the most significant of these patterns of association remains stable across interpreters from different periods working with different theoretical assumptions and methodological frameworks and different degrees of attention to the poem itself, the data represented by the fourth column of Table 3 were parsed into subsets according to these parameters and reanalyzed. If the highly significant association between CFI and FOC holds across the various subsets, it is probably *not* due to intervening historical or institutional factors but rather to the structure of the text itself. On the other hand, if a significant association does not hold across the various subsets, this may be evidence that historical and institutional facts *are* intervening and that “interpretive communities” (Fish, 1980) may affect literary interpretation as much or more than textual features do. Table 4 shows the 64 interpretations of “Stepping Westward” subdivided in three different ways: In Part A, interpretations are sorted by date of publication (note that two interpretations published prior to 1900 were not separately analyzed but are included in the “All” column at far right); in Part B, the same interpretations are resorted according to purpose, that is, whether the interpreter is *centrally* concerned with “Stepping Westward” or citing it only *incidentally*, and type, that is, whether the interpretation may be classified as an “internal” study in *poetics and literary history* (reduced to “poetics” in the Table) or an “external” study in *cultural studies, including biography* (reduced to “cultural studies” in the Table).

Table 4. Correlations between CFI and FOC for “Stepping Westward” subdivided by date of publication, purpose, and type

A. by date of publication						
“Stepping Westward”	1900–50	1951–70	1971–90	1991–2010	2011–	All
FE = 1.5, (F)EN = 0	N = 6	N = 8	N = 20	N = 17	N = 11	N = 64
Spearman’s Rho Coefficient	.503 **	.685 **	.678 **	.421 *	.181	.637 **
Two-tailed significance	.009	.000	.000	.032	.375	.000
B. by purpose (central vs. incidental) and type (poetics vs cultural studies)						
“Stepping Westward”	Central	Incidental	Poetics	Cultural Studies	All	
FE = 1.5, (F)EN = 0	N = 26	N = 38	N = 47	N = 17	N = 64	
Spearman’s Rho Coefficient	.585 **	.613 **	.609 **	.285	.637 **	
Two-tailed significance	.002	.001	.001	.159	.000	
Two-tailed significance	.002	.001	.001	.159	.000	

EN = nominative noun phrase enjambment; FEN = line following a nominative noun phrase enjambment; FE = line following a prospective enjambment.

* Correlation is significant at the 0.05 level. ** Correlation is significant at the 0.01 level.

The historical analysis in Part A of Table 4 shows that the large and highly significant correlation between prospective enjambment relations and FOC begins to diminish within the 1991–2010 group of interpretations and disappears altogether within the post-2010 group. In Part B of Table 4, while interpretive *purpose* (i.e., extent of treatment) did not alter the large and highly significant association between the CFI and FOC, *type* of interpretation did, such that studies in poetics and literary history indicate the large, highly significant association while interpretations involving a cultural studies and/or biographical approach do not. Notably, the majority of interpretations (14 of 17) classified as “cultural studies” were published after 1990; this helps to explain the tailing off of the large, significant association in the historical data, for 7 of the 17 1991–2010 interpretations, or 41%, were of the cultural studies/biography type, while 7 of the 11 post-2010 interpretations, or 64%, were so classified. The statistical divergence of this subset would appear to support the “modified Conventionalist” position according to which one’s theoretical and methodological approach, or “interpretive community,” helps to determine which textual features one pays attention to (Fish, 1980; Hanauer, 1998). Curiously enough, however, the cultural studies type of interpretation that appears to disregard the attention-getting effects of particular kinds of enjambment arrives on the scene only *after* Fish (1980) developed his theory of *the authority of interpretive communities*. Prior to that, the data are uniform in showing a large, highly significant association between the formal feature of enjambment and FOC. Though general inferences cannot be drawn from historical citation patterns in interpretations of a single poem, one wonders whether the difference-making “authority” of interpretive communities in Fish’s sense did not exist until he coined and persuasively disseminated the idea, which only thereafter authorized professional interpreters to disregard textual features to which they would naturally (rather than institutionally) have paid better attention.

Citation analysis of “To Joanna” and “To My Sister”

Method

As suggested above, the historiometric approach yields testable hypotheses: in this case, the hypothesis that Wordsworth’s use of enjambment focuses his readers’ and thus (most of) his interpreters’ attention on certain lines of his poems. A follow-up historiometric study was undertaken to see whether citation data from interpretations of two additional lyrics by Wordsworth would reveal the same strong correlation between the most and least frequently cited lines, on the one hand, and the presence and absence of particular kinds of enjambment relations, on the other. To ensure that the enjambment effects indicated in the first study were not

confined to the specific prosodic form of “Stepping Westward” (rhymed tetrameter couplets, organized in stanzas of four or five couplets), two verse epistles were chosen for this second study that differ in form both from each other and from “Stepping Westward”: “To Joanna” is a blank verse (unrhymed iambic pentameter) poem of 85 lines while “To My Sister” is a 40-line poem organized in ten ballad stanzas of either three tetrameters followed by one trimeter (lines 1–16, 37–40) or alternating tetrameters and trimeters (17–36), all with a rhyme scheme of *abab*. Both poems were analyzed for enjambment relations, citation data were collected from professional interpretations ($n = 49$ for “To Joanna,” $n = 59$ for “To My Sister”) and FOCs by line were run.

Results

The results largely supported the hypothesis although more clearly and immediately with the interpretations of “To Joanna” than with the interpretations of “To My Sister” (for reasons taken up in the “Discussion,” below). Once again, lines involving enjambment relations were much more frequently cited than lines lacking such relations, and, once again, nominative noun phrase enjambments proved an exception to this general rule, being much more randomly dispersed throughout the frequency tables. Surprisingly, in both poems, another kind or rather class of enjambments that did not feature in “Stepping Westward” – namely, *retrospective* enjambments – showed the same non-effect as nominative phrase enjambments, appearing more or less randomly throughout the frequency tables and therefore somewhat obscuring the much stronger predictive effects of all other kinds of enjambment, which may be classed together as *prospective* enjambments.

These differences of effect can be clearly seen in Table 5, which tabulates the percentage of enjambed lines in each quartile of the FOC data (i.e., among the 25% most frequently cited lines, the 25% next most frequently cited lines, the 25% next most frequently cited lines, and the 25% least frequently cited lines) for all forty-nine interpretations of “To Joanna.”⁶ The percentages in the left column take account of *all* varieties of enjambment relations, including retrospective enjambments and enjambments following nominative noun phrases; the percentages in the right column *exclude* retrospective (*r*) and nominative noun phrase (*n*) enjambments.

Both columns reveal the same trend: Lines that involve enjambment relations are more often cited than lines that do not, but, proportionately speaking, the trend is still clearer in the second column, which effectively tracks *only* prospective enjambments, apart from the prospective variety in which the line

6. The data are broken into quartiles simply to save space: a table of 85 rows becomes a table of four.

Table 5. Percentage of enjambed lines within frequency quartiles for “To Joanna”

Frequencies, high to low	All	Exclude $r + n$
First Quartile	95%	76%
Second Quartile	71%	48%
Third Quartile	52%	33%
Fourth Quartile	32%	18%

break follows a nominative noun phrase. In this more narrowly focused analysis, three out of four lines in the most frequently cited group involve prospective enjambment relations; nearly one in two lines in the next most frequently cited group involve prospective enjambment relations; only one in three of the next most frequently cited group of lines involves such relations, and fewer than one in five do in the least frequently cited group of lines. A line in the most frequently cited quartile is thus better than four times more likely to involve attention-getting prospective enjambment relations than a line in the least frequently cited quartile.

Correlation analyses support these first impressions. Table 6 shows the Spearman’s rho coefficients and the levels of significance for the association between CFI, incrementally adjusted for different kinds and strengths of enjambment, and line-by-line FOCs for “To Joanna.”

Table 6. Correlations between CFI and FOC for “To Joanna” with CFI values incrementally adjusted by kind of enjambment

“To Joanna”	All			FE = 1.5, (F)EN/ R = .5)
	enjamb = 1	(F)EN+(F)ER = .5	(F)EN+(F)ER = 0	
Spearman’s Rho Coefficient	.465 **	.471 **	.403 **	.472 **
Two-tailed significance	.000	.000	.000	0.000

EN = nominative noun phrase enjambment; ER = retrospective enjambment; FE = line following a prospective enjambment; FEN = line following a nominative noun phrase enjambment; FER = line following a retrospective enjambment.

** Correlation is significant at the 0.01 level.

As with “Stepping Westward,” incremental adjustments in the CFI values for different kinds of enjambment help to discover the best distribution for this data set. Though the differences between correlation coefficients are quite small and significance is quite high in all cases, the CFI appears most accurate when lines with nominative noun phrase and retrospective enjambments and the lines following them are ranked at half the value (or comparative strength of attention-

getting effect) of lines with prospective enjambments (.5 and 1 respectively), and lines following prospective enjambments are ranked 50% higher than prospective enjambments (i.e., at 1.5; see the rightmost column of Table 6). This measure of CFI was then used to generate Table 7, showing correlations between CFI and FOC for “To Joanna” subdivided by date of publication, purpose, and type, as with “Stepping Westward” above.

Table 7. Correlations between CFI and FOC for “To Joanna” subdivided by date of publication, purpose, and type

A. by date of publication					
“To Joanna”	1951–70	1971–90	1991–2010	2010–	All
FE = 1.5, (F)EN + (F)ER = .5	N = 3	N = 14	N = 21	N = 9	N = 49 ⁷
Spearman’s Rho Coefficient	.242 *	.501 **	.432 **	.283 **	.472 **
Two-tailed significance	.025	.000	.000	.009	.000
B. by purpose (central vs. incidental) and type (poetics vs cultural studies)					
“To Joanna”	Central	Incidental	Poetics	Cultural Studies	All
FE = 1.5, (F)EN + (F)ER = .5	N = 18	N = 31	N = 31	N = 18	N = 49
Spearman’s Rho Coefficient	.502 **	.342 **	.489 **	.383 **	.472 **
Two-tailed significance	.000	.001	.000	.000	.000

EN = nominative noun phrase enjambment; ER = retrospective enjambment; FE = line following a prospective enjambment; FEN = line following a nominative noun phrase enjambment; FER = line following a retrospective enjambment.

* Correlation is significant at the 0.05 level. ** Correlation is significant at the 0.01 level.

A sizable, highly significant correlation between prospective enjambments in particular and FOC holds across almost all sampled time periods (with only a slightly reduced significance for the one outlier, 1951–70) and all purposes and types. Thus, unlike the data for interpretations of “Stepping Westward,” the data for interpretations of “To Joanna” do not provide any support at all for the “modified Conventionalist” or “interpretive community” position of Fish (1980) and others. Instead, they suggest that, in “To Joanna” at least, prospective enjambments perform their attention-getting function regardless of the interpreter’s critical training or theoretical approach.

The FOC data for “To My Sister” do not initially reveal the same clear trend with respect to prospective enjambments, perhaps because, unlike “Stepping Westward” and “To Joanna,” “To My Sister” has extremely high *canonical* status among Wordsworth’s poems, appearing in all selected editions of Wordsworth and in the vast majority of anthology selections as well. The canonical status of the poem, in the classroom as well as among professional interpreters, may well

7. Total includes two pre-1950 interpretation not otherwise represented in the table.

impose *institutional* pressures and constraints upon citation patterns in addition to those generated by foregrounded features of the text itself. Table 8 tabulates the percentage of enjambed lines in each quartile of the FOC data for all 59 interpretations of “To My Sister”; the left column includes all enjambments while the right *excludes* retrospective (*r*) and nominative noun phrase (*n*) enjambments.

Table 8. Percentage of enjambed lines within frequency quartiles for “To My Sister”

Frequencies, high to low	All	Exclude <i>r + n</i>
First quartile	80%	40%
Second quartile	50%	30%
Third quartile	80%	60%
Fourth quartile	60%	20%

Neither column of Table 8 appears to indicate the predicted association between prospective enjambment and FOC, nor do the Spearman’s rho analyses of Table 9, no matter how the CFI for enjambment is incrementally adjusted to reflect different kinds and strengths of enjambment relations.

Table 9. Correlations between CFI and FOC for “To My Sister” with CFI values incrementally adjusted by kind of enjambment

“To my sister,” all lines	All enjamb = 1	(F)EN+(F)ER = .5	(F)EN+(F)ER = 0	FE = 1.5, (F)EN/R = 0
Spearman’s Rho Coefficient	.048	.082	.096	.088
Two-tailed significance	.770	.616	.557	.589

EN = nominative noun phrase enjambment; ER = retrospective enjambment; FE = line following a prospective enjambment; FEN = line following a nominative noun phrase enjambment; FER = line following a retrospective enjambment.

When one removes (for reasons of institutional and textual history taken up in the Discussion, below) the high and low outliers from the FOC data, that is, the top four most frequently cited lines as well as four of the least frequently cited lines, the results appear closer to the predicted trend but still do not regularly conform (See Table 10).

Comparing the right-hand columns of Tables 8 and 10, in which both nominative noun phrase and retrospective enjambments have been excluded, the proportional difference between the first and the fourth quartiles has increased from 2:1 to almost 5:1, which is in line with the 4:1 proportion in “To Joanna.” On the other hand, the still elevated proportion (63%) of prospective enjambments in the

Table 10. Percentage of enjambed lines within frequency quartiles for “To My Sister” (Excluding four most and least frequently cited lines)

Frequencies, high to low	All	Exclude $r + n$
First quartile	88%	63%
Second quartile	38%	13%
Third quartile	88%	63%
Fourth quartile	50%	13%

third quartile of Table 10 does not conform to the smooth trend illustrated by “To Joanna” and “Stepping Westward,” in which each successive quartile has fewer enjambed lines than the last. Still, the FOC data for “To My Sister” are now very close to showing a significant association with the enjambment CFI, as the revised Spearman analyses of Table 11 show.

Table 11. Correlations between CFI and FOC for “To My Sister” with lines 21–24 (Most frequently cited) and lines 37–40 (Least frequently cited) removed

A. with CFI values incrementally adjusted by kind of enjambment					
“To My Sister” w/o 21–24, 37–40	All Enjamb = 1	(F)EN + (F)ER = .5	(F)EN + (F)ER = 0	FE = 1.5	
Spearman’s Rho Coefficient	.062	.226	.316	.298	
Two-tailed significance	.735	.213	.078	.097	
B. subdivided by date of publication					
“To My Sister” w/o 21–24, 37–40	1900–50	1971–90	1991–2010	2010–present	All
FE = 1, (F)EN + (F)ER = 0	N = 9	N = 21	N = 19	N = 8	N = 59
Spearman’s Rho Coefficient	.731 **	.152	–.036	.102	.316
Two-tailed significance	.000	.406	.846	.577	.078
C. subdivided by purpose (central vs. incidental) and type (poetics vs. cultural studies)					
“To My Sister” w/o 21–24, 37–40	Central	Incidental	Poetics	Cultural Studies	All
FE = 1, (F)EN + (F)ER = 0	N = 10	N = 49	N = 44	N = 15	N = 59
Spearman’s Rho Coefficient	–.007	.337	.391 *	.058	.316
Two-tailed significance	.969	.059	.027	.754	.078

EN = nominative noun phrase enjambment; ER = retrospective enjambment; FE = line following a prospective enjambment; FEN = line following a nominative noun phrase enjambment; FER = line following a retrospective enjambment.

* Correlation is significant at the 0.05 level. ** Correlation is significant at the 0.01 level.

In Part A of Table 11, the best correlational fit between CFI and FOC, and one close to significance at the $p < .05$ level, appears when nominative noun phrase and retrospective enjambments are zeroed out of the CFI equation and all other prospective enjambment relations are valued at “1” (second column from the right). Using this CFI formula, the nine interpretations published between 1900 and 1950 (leftmost column of Part B of Table 11) show a large and highly significant association between prospective enjambment and FOC while the subset of 44 interpretations from across periods that are classified as studies in poetics and literary history (middle column of Part C of Table 11) indicates a medium-sized, significant association between prospective enjambment and FOC. These particular subsets of date of publication and type of interpretation provide support for the literariness hypothesis according to which textual foregrounding affects readers’ (and therefore interpreters’) responses regardless of institutional preparation or expertise. The other subsets may provide counter-evidence for the modified Conventionalist position (Hanauer, 1998), but the evident irregularities in the FOC data for “To My Sister” may alternatively be due to an interaction effect with the “matter-of-factness” of the semantic content in the lines in question (see the Discussion, below).

Citation analysis of “The Last of the Flock”

Method

As a final check of these findings, citation data from professional interpretations of “The Last of the Flock” were analyzed to see if line by line frequencies obeyed the same trends, such that prospective enjambment relations (apart from nominative noun phrase enjambments) predict higher frequency of citation.

Results

Table 12 presents the percentages of enjambed lines in each quartile of the citation frequencies for “The Last of the Flock,” with the left column tabulating all varieties of enjambment relations and the right column excluding retrospective (r) and nominative noun phrase (n) enjambments.

Table 12. Percentage of enjambed lines within frequency quartiles for “The Last of the Flock”

Frequencies, high to low	All ($n = 36$)	Exclude $r + n$
First quartile	64%	52%
Second quartile	28%	16%
Third quartile	28%	12%
Fourth quartile	28%	16%

The right column again shows that lines involving prospective enjambment relations are much more likely to appear in the first quartile of most frequently cited lines than in the final quartile of least frequently cited lines, by a factor of more than three times. This result is only slightly less robust than the comparable results for “Stepping Westward,” “To Joanna,” and “To My Sister”; perhaps the generic difference in this more explicitly narrative poem somehow accounts for this slight diminishment in the relative proportion of prospective enjambments between the first and last quartiles in the frequency data.

Spearman rho analyses of correlations between CFI and FOC for interpretations of “The Last of the Flock” confirm highly significant associations across the population and in most of its subsets, as Table 13 shows.

Table 13. Correlations between CFI and FOC for “The Last of the Flock”

A. with CFI values incrementally adjusted by kind of enjambment					
“The Last of the Flock”	(F)EN + (F)ER = .5	(F)EN + (F)ER = 0	FE = 1.5, (F)EN + (F)ER = .5		
Spearman’s Rho Coefficient	.281 **	.271 **	.287 **		
Two-tailed significance	.005	.006	.004		
B. subdivided by date of publication					
“The Last of the Flock”	1951–70	1971–90	1991–2010	2011-present	All
FE = 1.5, (F)EN + (F)ER = .5	N = 4	N = 12	N = 12	N = 5	N = 36
Spearman’s Rho Coefficient	.007	.127	.363 **	.168	.287 **
Two-tailed significance	.944	.208	.000	.094	.004
C. subdivided by purpose (central vs. incidental) and type (poetics vs. cultural studies)					
“The Last of the Flock”	Central	Incidental	Poetics	Cultural Studies	All
FE = 1.5, (F)EN + (F)ER = .5	N = 14	N = 22	N = 22	N = 14	N = 36
Spearman’s Rho Coefficient	.285 **	.284 **	.180	.333 **	.287 **
Two-tailed significance	.004	.004	.074	.001	.004

EN = nominative noun phrase enjambment; ER = retrospective enjambment; FE = line following a prospective enjambment; FEN = line following a nominative noun phrase enjambment; FER = line following a retrospective enjambment.

** Correlation is significant at the 0.01 level.

Interestingly, the very period (1991–2010) and type of interpretation (cultural studies, including biography) that appeared to diminish the strength of association between enjambment and FOC in the case of “Stepping Westward” are in this case the subsets that most bolster that association while the type of interpretation that most improved the associational strengths for “To My Sister,” namely, poetics and literary history, is here the sole subset among purpose and type that does not indicate a significant association.

Discussion

Discussion of the results

Most immediately, these exploratory citation analysis studies appear to confirm and refine the literary-critical intuition that different kinds of enjambment have varying degrees of attention-getting potential. For example, taken together, the findings seem strongly to support Leech’s (1969) intuition that “the most common and least startling form of enjambment is that in which the end of one line and the beginning of the following one belong to different phrases but are part of the same clause (for example, when the line-division occurs between subject and predicate)” (p. 125). As the tree diagrams of transformational grammar graphically insist, the minimal form of an English utterance is a nominative noun phrase as subject joined to a verb phrase as predicate. Because NP + VP structure is so deeply ingrained, the “natural” rhythm of language comprehension is not flouted but rather flaunted by nominative noun phrase enjambments, which divide the line exactly where the mind is already seeking a conceptual pause for syntactic and semantic integration (Attridge, 2013; Heiden, 2014). Since a line “break” after a nominative noun phrase does not violate our natural grammatical expectation but instead fulfills it, this kind of enjambment is, as Leech (1969) suggests, the “least startling” and therefore does not serve to heighten a reader’s or interpreter’s attentional focus on the lines in question, at least not as reliably or extensively as most other kinds of enjambment (p. 125). Citation analyses of interpretations of Wordsworth’s poetry bear out Leech’s expert intuition. In populations of interpretations of all four poems, the most robust associations between CFI and FOC appear when lines with nominative noun phrase and retrospective enjambments and the lines that follow them are discounted in the CFI by comparison with lines featuring other kinds of prospective enjambments and the lines that follow them. In two cases (“Stepping Westward” and “To My Sister”), giving no CFI value to nominative noun phrase and retrospective enjambments and the lines that follow them resulted in the highest correlation coefficient; in the other two cases (“To

Joanna” and “The Last of the Flock”), giving such lines half the value of other kinds of prospective enjambment in the CFI calculation resulted in the highest correlation coefficient.

Taken together, these findings indicate that most kinds of prospective enjambment are more attention-getting and thus more citation-worthy than either nominative noun phrase enjambments or retrospective enjambments, at least among professional interpreters of Wordsworth’s poetry. As Leech (1969) and others have assumed, enjambments following nominative noun phrases do not capture interpreters’ attention as effectively as almost any other kind of enjambment.

The more surprising result is that retrospective enjambments are no more effective in capturing interpreters’ attention than nominative noun phrase enjambments are. This finding, repeated across three of the four historiometric studies reported here, offers an important empirical check on expert literary-critical intuition, which has tended to valorize retrospective enjambments as the most attention-getting of all (e.g., Hollander, 1975). My citation analysis data instead support and clarify Koops van’t Jagt et al.’s (2014) findings about the (visual) attention-distributing powers of different kinds of enjambment, in which prospective ones (excluding nominative noun phrase enjambments) show greater differences from end-stopped controls than do retrospective ones. In the FOC data presented here, the distribution of retrospective and nominative noun phrase enjambments was relatively proportionate throughout the frequency quartiles: In “To Joanna,” for instance, they made up 19% of the first quartile, 23% of the second, 19% of third, and 14% of the fourth (see Table 5); in the truncated version of “To My Sister,” they made up 25% of the first three quartiles’ enjambment relations and 37% of such relations in the fourth quartile (see Table 10); in “The Last of the Flock,” they made up 12–14% of each quartile (see Table 12). The evenness of their distribution across the FOC quartiles suggests that retrospective and nominative noun phrase enjambments are not necessarily attention-getting like their prospective counterparts, which prove to be much more disproportionately distributed, by a margin of more than 4 to 1 between the first and fourth quartiles of FOC data for “To Joanna” and “To My Sister” and by a margin of more than 3 to 1 between the first and fourth quartiles of FOC data for “The Last of the Flock.” Only prospective kinds of enjambment apart from nominative noun phrase enjambments predictably attract interpreters’ attention as measured by FOC.

Another important implication of these citation analyses arises from the fact that, in most cases, the highly significant association indicated in relation to prospective enjambments holds across various historical and methodological subsets of the collected data. Within the population of interpretations of one poem as opposed to another, a particular type or period of interpretation may prove to be an exception to the overall rule, but the exceptional trend is not replicated in

the other populations of interpretations. Thus, among interpretations of “Stepping Westward,” the subsets of the type “cultural studies, including biography” and of the period “1991–2010” did not show the same large, highly significant associations between enjambment and FOC as did the subsets of the type “poetics and literary history” and of the preceding historical periods (see Table 4). This could be construed as evidence for the authority of Fish’s (1980) interpretive communities, except that, in the case of “The Last of the Flock,” these very same subsets of “cultural studies, including biography” and “1991–2010” revealed sizable and highly significant associations that bolstered the overall coefficient between enjambment and FOC for the whole population of interpretations beyond the .01 level of significance (see Table 13). The cumulative findings thus yield only slight support for the modified Conventionalist position, in which one’s theoretical presuppositions partially determine where and how one pays attention to a text, whereas the findings yield consistently strong support for the competing Formalist/Stylistics position, which holds that foregrounded features of the literary text – in Wordsworth’s particular case, prospective enjambments – will dependably capture readers’ attention, regardless of their literary education or literary-critical commitments (Hanauer, 1998).

On the other hand, the overall strength and consistency of the findings rule out the authority of interpretive communities only under Fish’s (1980) own hypothesis that institutional influence will necessarily produce significant variation over time. An alternative interpretation of the consistent associations reported here is that they are themselves evidence of an underlying institutional influence that persists despite theoretical and methodological diversification over historical time. The scholarly honor system of searching out and citing previous interpretations of a literary work may eventuate in an interpretive “mega-community” surrounding certain canonical texts, a community of scholars who, by citing certain lines or passages, establish and perpetuate the practice of citing those particular lines or passages, regardless of their formal features. This would appear to be the case, for example, for the four most frequently cited lines from “To My Sister,” which are cited with almost too much consistency across the decades. These lines (21–24) constitute a single stanza of the poem, which is cited wholesale by four of the nine interpreters from 1900–1950, both of the interpretations from 1951–1970, and three of the eight interpretations published after 2010. This tendency to cite the whole stanza is suspicious; notice that the top four lines for the other two poems represented in Table 14 are drawn from three different locations in the given poem whereas the top four from “To My Sister” all hail from this single stanza.

More than half of the critics writing about “To My Sister” between 1900 and 1970 cite the entire stanza comprising lines 21–24, including Arthur Beatty

Table 14. Historical citation frequencies for the four most frequently cited lines of “Stepping Westward” (SW), “To Joanna” (TJ), and “To My Sister” (TS)

Line #	1900–1950	1951–1970	1971–1990	1991–2010	After 2010	All
SW12e	33% (n=6)	88% (n=8)	70% (n=20)	65% (n=17)	73% (n=11)	69% (n=64)
SW1	67%	50%	55%	82%	64%	64%
SW25e	33%	63%	60%	88%	64%	64%
SW26e	33%	75%	60%	82%	64%	64%
TJ53e	null (n=0)	67% (n=3)	57% (n=14)	57% (n=21)	33% (n=9)	53% (n=49)
TJ83e	null	33%	50%	57%	56%	51%
TJ28e	null	33%	43%	52%	33%	43%
TJ82e	null	33%	50%	48%	33%	43%
TS24	44% (n=9)	100% (n=2)	38% (n=21)	42% (n=19)	38% (n=8)	42% (n=59)
TS21e	44%	100%	43%	32%	38%	41%
TS22e	44%	100%	38%	26%	38%	37%
TS23	44%	100%	33%	32%	38%	37%

Note. An “e” following a line number indicates that the line is enjambed and/or follows an enjambment.

(1922) in *William Wordsworth: His Doctrine and Art in Their Historical Relations* (republished in two subsequent editions into the early 1960s), which interprets the poem as an exemplary instance of Wordsworth’s philosophy of active feeling in relation to imagination (p.137, p.150). Thanks to Beatty’s influential reading, at mid-century James V. Logan (1947/1961), in his *Wordsworthian Criticism: A Guide and Bibliography*, singles out this particular stanza of “To My Sister,” the only one he quotes from the poem, as an epitome of “Wordsworth’s philosophy” (p.108; see 112ff), and the tradition has since persisted (e.g., Wuescher, 1980, p.97). This series of critical cross-references appears to index exactly the kind of forceful critical tradition that Fish (1980) denominates an *interpretive community*.

Just as the data for the four most frequently cited lines of “To My Sister” are anomalous in their extreme regularity, so too are the data for eight of the ten least cited lines, which likewise constitute complete stanzas. Along with lines 3 and 13, lines 9–12 (stanza 3) and lines 37–40 (stanza 10) are cited by one in ten interpreters or fewer. Stanza 3 may be interpretatively neglected in part because it lacks prospective enjambments aside from the nominative noun phrase enjambment of line 9. Stanza 10, however, is likely infrequently cited because it is largely a repeat of an earlier stanza (13–16), the lines of which are cited much more frequently in the critical literature, especially 15 and 16, which

are cited three times as often as their exact counterparts (with the exception of a semi-colon where a comma had been) at the end of the poem. Just as external institutional history can bias a professional interpreter to favor certain lines in interpretation, so the internal structure of the text itself, unfolding as a temporal (or “historical”) process with a clear beginning, middle, and end, can bias the same interpreter to neglect certain lines, especially if s/he has already cited and interpreted nearly identical lines from earlier in the poem. For these reasons, both the four most cited lines of “To My Sister” (21–24) and four of its least cited lines (37–40) were excluded from Tables 10 and 11, bringing the overall results for the 32 remaining lines of “To My Sister” into line with the correlational trend that was more strongly indicated for the other three less canonical poems. Table 15 reproduces the data of Table 14, except that now the most frequently cited lines (21–24) of “To My Sister” have been replaced by the next four most frequently cited lines, thereby bringing the FOC data for this poem into better alignment with the FOC data for “Stepping Westward” and “To Joanna”:

Table 15. Historical citation frequencies for the four most frequently cited lines of “Stepping Westward” (SW) and “To Joanna” (TJ) and the next four most frequently cited lines of “To My Sister” (TS)

Line #	1900–1950	1951–1970	1971–1990	1991–2010	After 2010	All
SW12e	33% (<i>n</i> =6)	88% (<i>n</i> =8)	70% (<i>n</i> =20)	65% (<i>n</i> =17)	73% (<i>n</i> =11)	69% (<i>n</i> =64) ⁸
SW1	67%	50%	55%	82%	64%	64%
SW25e	33%	63%	60%	88%	64%	64%
SW26e	33%	75%	60%	82%	64%	64%
TJ53e	null (<i>n</i> =0)	67% (<i>n</i> =3)	57% (<i>n</i> =14)	57% (<i>n</i> =21)	33% (<i>n</i> =9)	53% (<i>n</i> =49)
TJ83e	null	33%	50%	57%	56%	51%
TJ28e	null	33%	43%	52%	33%	43%
TJ82e	null	33%	50%	48%	33%	43%
TS26e	67% (<i>n</i> =9)	0% (<i>n</i> =2)	38% (<i>n</i> =21)	21% (<i>n</i> =19)	25% (<i>n</i> =8)	34% (<i>n</i> =59)
TS33e	22%	50%	33%	37%	38%	34%
TS15e	0%	0%	43%	37%	38%	32%
TS16e	0%	0%	24%	42%	63%	31%

Note. An “e” following a line number indicates that the line is enjambed and/or follows an enjambment.

The suspicious over-regularity of the original “To My Sister” data has disappeared, leaving results that are entirely typical when compared to those for “Stepping Westward” and “To Joanna.” Now, the four most frequently cited lines

8. Note that interpretations published prior to 1900 are counted in the “All” category but not otherwise indicated in the table (because of the uniformly tiny sample size).

And this was my reply. – “As it befell, (35)

Along the copses runs in veins of gold. (40)

The not cited and least cited lines of “To Joanna” either specify the contextual time and place of the action or, like line 19 of “Stepping Westward,” indicate that particular speech acts were performed but not their specific locutionary, illocutionary, or perlocutionary force (“His salutation had to me,” “and when he had asked,” “And this was my reply”). They illustrate, in other words, what Samuel Taylor Coleridge (2000) identified as a chief “defect” of Wordsworth’s lyric style: “a matter-of-factness in certain poems [that] may be divided into, first, a laborious minuteness and fidelity in the representation of objects, and their positions, as they appeared to the poet himself [e.g., “lofty firs, that overtop ... the steeple tower”]; secondly, the insertion of accidental circumstances, in order to the full explanation of his living characters, their dispositions and actions [e.g., “Came forth to greet me, and when he had asked”]” (p. 391). Like Coleridge (2000), who disrelished this “accidentality” in Wordsworth’s verse as somehow “contravening the essence of [lyric] poetry” (p. 391), subsequent interpreters have eschewed lines of this character, even when these lines feature kinds of prospective enjambment that otherwise dependably capture their interpretive attention.

The interaction of un-lyric-like matter-of-factness may help to explain the still elevated proportion of enjambed lines in the third quartile of citation frequencies for “To My Sister” (see Table 10). Consider the *semantic content* of the enjambed lines from the third quartile:

No joyless forms shall regulate
Our living Calendar:
We from today, my friend, will date
(Wordsworth, 1992, lines 17–19)

We for the year to come may take (31)

Like line 31, the three earlier lines reference the “Calendar” “year” in relation to the present moment of “today,” as well as the conceptual action of temporal “dating” or “taking” that the speaker and his interlocutor will initiate today. Though prospective enjambment relations are involved in all four lines (including the relation of following a prospective enjambment), the interaction of quotidian calendric concepts seems to diminish their attention-getting force, leading them to be

ultimately had to exclude them from the analyses anyway on the same deep-structural grounds that led me to exclude nominative noun phrase enjambments.

less frequently cited than other prospectively enjambed lines that eschew such genre-inappropriate matters-of-spatiotemporal-fact.

The prospective enjambments cited by fewer than one in ten interpreters of “The Last of the Flock” reveal a similar “laborious minuteness and fidelity”:

Then with his coat he made essay To wipe those briny tears away.	(13–14; frequency = 8%)
And from this one, this single ewe, ¹⁰	(32; frequency = 6%)
And I may say that many a time	(67; frequency = 6%)
And of my fifty, yesterday I had but only one,	(95–96; frequency = 3%)

These colorless lines may be compared to the one line out of the poem’s one hundred that *none* of the 36 interpretations cited, “Till thirty were not left alive” (65), which likewise indicates a too faithful attempt to square the tale to objective and even countable facts of reality. Here again, prospective enjambments that would otherwise be attention-getting are arguably slighted due to a matter-of-factness in content that is inappropriate, according to Coleridge explicitly and most other readers implicitly, in lyrical utterances (even when these utterances are simultaneously shaped by the narrative impulses of the ballad).¹¹

Discussion of the method

Prospects for citation analysis

To the extent that citation analysis may empirically reveal the specifically textual basis of literariness, the method has enormous potential to bring the vast archive of literary interpretation to the forefront of the general project proposed by the scientific study of literature. Only consider the possibilities of citation analysis for our understanding of literary styles and genres and their differential development over the course of literary history. For instance, will the foregrounding effects of prospective enjambment be found to hold across larger samples of interpretations of a greater variety of Wordsworth lyrics? What if we compare

10. Yes, there is a comma at the end of the line, indicating that an integrative pause is syntactically possible after the appositive phrase. But because the syntactic form of the clause and its general semantic thrust are woefully incomplete – “From this single ewe ... what?” – a reader will very likely carry through the line break by sheer force of the natural anticipatory desire for main clause structure. Compare lines 32–33 with lines 95–96, which have a similar effect and only *look* to be more enjambed because of the absence of a comma after “yesterday.”

11. See Coleridge’s very similar objections to “The Thorn” (2000: 339–41).

this population of interpretations to populations of interpretations of a variety of lyrics by other English Romantic poets, such as Coleridge, Keats, and Shelley? Would prospectively enjambed lines still dominate the citation frequencies across the board, revealing a period-wide main effect, or would there be systematic differences among the four writers, disclosing signature features and effects of their individual styles? How would these Romantic poets compare to Shakespeare and Milton, on the one hand, whom they all consciously imitated, and to Ezra Pound and William Carlos Williams, on the other, who meant to overthrow them and “make [poetry] new” again? Would we find that prospective enjambments have the same effect upon interpreters no matter the generic setting of the poem or the period of its production, or would we rather find, as literary theory has predicted (e.g., Hollander, 1975, p. 110), that the internal norm set by the text (e.g., a stanzaic pattern of mostly end-stopped lines as opposed to routinely enjambed free verse) affects the attention-getting potential of such enjambments? Do interpreters of Williams more frequently cite his end-stopped lines than his enjambed ones, just because end-stopped lines are comparatively rare in his verse and therefore more foregrounded by internal norms? Citation analysis could very well help to decide the case, and countless others like it.

Strengths of citation analysis

Ecological validity

Unlike most true experiments, the quasi-experimental method of citation analysis is ecologically valid in every respect. The texts used for analysis, both literary and interpretative, are produced in the wild by subjects who are perfectly unaware of the experimental design (or even its possibility), and every text is analyzed in its entirety. By contrast, Koops van’t Jagt et al.’s (2014) design was ecologically questionable in all these respects, as the authors admit (p. 21): The poetic lines and prose controls, many of which were created by the researchers, were presented as fragments on a computer screen in an eye-tracking lab to subjects who knew full well that they were participating in an experiment. Perhaps the most troublesome of these potential confounds is the fragmentary nature of the stimuli, which prevents the researchers from taking internal norms (background) and deviance (foreground) into account. While discrete pairs of lines featuring prospective or retrospective enjambments may be processed differently from discrete end-stopped pairs or prose controls, this does not tell us how these different rhythmic relations would be processed in a continuous text that features all three in different proportions. For example, a free-verse poem may have a very high proportion of enjambed lines, meaning that, by

the internal standards of the poem, such lines deviate only syntactically but not rhythmically or stanzaically, as they do in more formally patterned verse such as Wordsworth's. The two different textual environments may lead readers to process a specific kind of enjambment differently, particularly with respect to the time course of reading and the distribution of (visual) attention. Where readers of Wordsworth's rhymed couplets and quatrains and his blank verse may dedicate more attention to prospective enjambment relations, readers of Williams' free verse may pay more attention to internally deviant end-stopped lines (especially if they involve some unexpected end-rhyme relation). Similarly, perhaps the comparatively smaller effect size of prospective enjambments in the population of interpretations for "The Last of the Flock" is a consequence of that poem's generic status as a true "lyrical *ballad*" and thus its greater commitment to principles and forms of *narrative* structuring.¹² If so, the generic distinctiveness of "lyrical narratives" may be something more than a theoretical "illusion" or "chimera" (Heiden, 2014, p.272). Citation analysis could conceivably provide abundant evidence relevant to such theoretical questions and debates, revealing diverging patterns in the text-interpreter interaction that correlate in systematic ways with the formal differences at play in particular genres and styles of poetry.

Requires and refines literary-critical expertise

Citation analysis requires that researchers bring some degree of literary-critical expertise to every step of the quasi-experimental procedure. To begin with, key determinations must be made as to what will count as an interpretation (does it need to be peer-reviewed or of a certain length? Will an interpretative blog count, or a one-paragraph entry in *Notes & Queries*?) and, within an interpretation, as a citation (only material presented within quotation marks, as in Zöllner [1990], or any explicit reference to the form or content of a line, including paraphrases, as in the studies reported here?). Next, researchers will need to know where to find literary-critical interpretations (especially older ones, e.g., *British Periodicals Online*) and how to read them (e.g., being alert for the confound of sheer plagiarism in the literary criticism of Wordsworth's day); they will likewise need to have an intimate knowledge of the literary text(s) under interpretation, in order to recognize more and less direct citations when they read them. Once citations have been collected and frequencies run, the investigator(s) will need to be thoroughly trained in poetics (i.e., rhetoric, prosody, genre theory, metaphor theory, etc.) and literary history (minimally with respect to literary periods and schools) in order to identify and appropriately contextualize patterns in the data. And if they wish to report their empirical findings to the literary-critical professionals to whom these

12. As described, for example, in Hogan, 2011 and illustrated in Bruhn, 2017.

findings will presumably be most relevant, the researchers will need to speak and write comfortably in the literary-critical idiom, shifting among its many jargons (formal, historical, theoretical, etc.) with knowing and eloquent ease.

Citation analysis not only requires literary-critical expertise but also promises to refine it, precisely by putting the theoretical intuitions of literary-critical experts to the empirical proof. Hollander (1975) made a persuasive case for the attention-getting strength of retrospective enjambments and Fish (1980) for the authority of historically variable interpretation, but, if the citation analyses reported here are any indication, both positions will need to be tempered in light of the empirical facts. These are only two of literally *thousands* of expert intuitions that have been and continue to be debated in classrooms, journals, and professional societies: How many of these thousands of literary-critical hypotheses might be at least partly adjudicated through citation analysis of the very documents (i.e., interpretations) in which they have been and still are being most carefully advanced?

Because it not only *can* be done but indeed *must* be done by trained literary critics, and because it promises to pay off handsomely in terms of improved disciplinary knowledge, the method of citation analysis should be an especially inviting empirical enterprise for literary humanists who are willing to check their own theoretical intuitions.

Limitations of the citation analyses reported here

Not normed

Because I lacked the literary-critical expertise of others to check my own decisions about what to count as an interpretation, a citation, an enjambment, etc., the empirical studies reported here are really only preliminary probes towards full-fledged quasi-experiments. As a species of “observation research,” citation analysis should ideally involve a team of observers to code and score the data independently from one another in order to ensure a high rate of inter-observer reliability in the analysis and interpretation of data (van Peer et al., 2012, p.76). This is an obvious next step, given the promising results of the preliminary tests reported here.

Insufficient control for interaction effects

Though my initial studies involved hypothetico-deductive predictions based on a CFI that assumed simple additive effects among a number of foregrounded variables (metrical, rhyme, and grammatical deviations as well as affective narrative structure), the FOC data I initially collected did not support this predictive approach. Retrenching in historiometric terms, I asked what the FOC data *did*

reveal, if anything. Of all the variables I was tracking, only one correlated strongly with frequency of citation – prospective enjambment – a surprising result that was repeatedly confirmed. Yet all of the analyses seemed to reveal an interaction between prospective enjambments and topical matter-of-factness, and the possibility remains that many other interactions involving features that I did not examine (e.g., imagery, metaphor and other rhetorical figures, phonetic patterns such as alliteration, etc.) are at work in my data.

To investigate and control for possible interactions among all these formal variables requires a “multilevel” model of textual structure with empirically validated differential weightings of component variables. Such a model has recently been proposed by Jacobs et al. (2016), who likewise call for a “multimethod approach” for its ongoing refinement and verification. Just as Jacobs’ (2015b, 2015c) neurocognitive poetics model could help to predict and uncover patterns of interaction in citation frequencies, so citation analysis might return the favor by continuously feeding back into the model’s probability calculus, with respect not only to individual variables and interactions but also to background/foreground distinctions in different literary genres and periods.

Conclusion

The historiometric citation analysis studies reported here suggest that, while certain kinds of enjambment have more powerful foregrounding effects than other kinds do, as literary theorists have long believed, the most powerful are apparently not of the *retrospective* sort, as those same theorists have intuitively assumed (Hollander, 1975; Leech, 1969). Instead, the most powerful effects trace to *prospective* enjambments, a finding that supports and clarifies the eye-tracking results obtained by Kooops van’t Jagt et al. (2014) in their study of how enjambment affects the visual processing of poetry. Moreover, prospective enjambment tends to correlate with a line’s FOC in professional interpretations no matter when those interpretations were published, what type of literary critical approach they take, or the extent to which they treat the poem. This argues that the main effect of prospective enjambment is produced by the literary text itself rather than mediated by the *interpretive community* to which a particular interpreter happens to belong (Fish, 1980). More generally, these preliminary studies indicate that citation analysis of professional literary interpretation, carried out on a large scale and with increasingly sophisticated modeling, may have much to contribute to our understanding of many dimensions of literariness, including the background/foreground “ratio” (Jacobs, 2015b, 2015c), the processing implications of genre decisions and expectations (Blohm et al., 2017; Salgaro, 2015; Zwaan, 1991, 1993), and the relative effects

of educational experience on literary interpretation (Allington, 2012; Fialho et al., 2011; Hanauer, 1998; McCarthy, 2015).

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