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Generative metrics and Old French octosyllabic verse

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ABSTRACT

Both Old French meters and their Modern French descendants are usually thought to lack the internal binary constituent structure of, say, English or German iambic verse. In this article, however, an underlying iambic structure for the Old French octosyllable is established through quantitative analysis of a large corpus of texts written from c. 975 to 1180 (42 distinct works, including over 22,000 lines). Because no texts conform absolutely to the grammar of English iambic verse (Halle & Keyser, 1971; Kiparsky, 1977), certain measures are proposed for the degree to which a sample deviates from the iambic pattern; these values are then compared with the (chance) deviation of normal Old French prose. A significant correlation emerges between these measures and date of composition, author, and genre: early texts are almost perfectly iambic, and late 12th-century texts approach, but do not reach, chance levels. It is concluded that the grammar of meter used by Old French authors underwent a gradual change during the 12th century, a change comparable to more familiar phonological and syntactic changes.

Historians of French literature have long debated to what extent word accent plays a role in Old French verse. According to the predominant view, represented in handbooks such as Tobler (1894), word accent is relevant only in line-final position (and, in lines with obligatory medial caesura, also in hemistich-final position). For example, in the Old French octosyllable discussed in this article, a well-formed line consists of eight syllables, the last of which must be stressed and may be followed by an extra, uncounted stressless syllable (stressed syllables are italicized):

(1) ‘*Da*me’, dit Breng*vein*, ‘*mor*te *sui*.
Mar vi *l’u*re que vus cu*nui*,
E *vus* e Tris*tran* vos/tr[e] a*mi*!
Tut mun pa*ïs* pur *vus* guer*pi*,
E *pus*, pur vostre fol cu*rage*,
Per*di*, *da*me, mun puce*la*ge.’ (*Tristan* D 2–6)

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'My lady,' said Brengain, 'I am dead,
how unfortunate the hour I made your acquaintance,
both yours and Tristran's your lover!
All my country I left for you,
And then, because of your wild desires,
I lost, my lady, my virginity.'

As shown in (1), the distribution of word accents in pre-final position seems to be completely unrestricted. Accented syllables do appear in even-numbered positions in the line (*mor*te, *vus*, pa*ïs*, per*di*, as well as line-final position 8), as would be expected for an iambic line. But accents also occur in odd-numbered positions (*Da*me, Breng*vein*, Tris*tran*, *da*me) in a manner quite uncharacteristic of iambic verse. Moreoever, adjacent stresses are tolerated and, in this passage, quite frequent, occurring in both the first and the last line. Not surprisingly, then, the French system is often used to illustrate a "pure syllable-counting" meter in which, aside from final position, word accent is held to be irrelevant (Lote, 1951).

These observations suggest a simple template for the French octosyllable consisting of seven *anceps* positions, which may be occupied by any syllables whatsoever, followed by a strong (S) position requiring a stressed syllable and then an optional weak (W) position:

(2) X X X X X X X S (W)

Although this template is descriptively adequate, the question remains whether further refinements are possible, and, in fact, the literature on the potential significance of accent, if any, in French verse is quite extensive (Thieme, 1916). Within this large body of work, two main strands of inquiry can be discerned as follows. First, 19th- and early 20th-century scholars sought the origins of early French meter either in a folk poetry presumed to have descended from the accentual meter of popular Latin verse (Paris, 1866) or through a combination of this folk tradition with the "rhythmic" Latin verse of the early Middle Ages, in which word accent replaced classical quantity as the organizing prosodic property (Gautier, 1878). Regardless of the details of transmission, the models on which Old French meter was presumed to have been based were thought to be accentual verse types, and so it was natural to conclude that the oldest Old French verse was likewise composed of metrical feet, with an accentual ictus. Second, stemming from this work on origins, an interest arose in determining the importance of word accent and prosodic grouping in French verse from the earliest texts down to the modern era. A minority of researchers insisted that, despite appearances to the contrary, French verse forms do exhibit an abstract pattern of strong–weak alternations diagnostic of binary foot organization, although this underlying "alternating rhythm" may be phonetically obscured (for a defense of this view and overview of previous literature, see Saran, 1904; Suchier, 1952)

Benlœw (1862:20–24), in one of the earliest defenses of an underlying binarity in French verse, explicitly distinguished between strong syllables (*syllabes fortes*) and strong rhythmic times or ictuses (*temps forts*), noting that these need not coincide in French verse. In contemporary terms, Benlœw's strong syllables

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are accented, while his strong times are the strong positions of the verse. But because Benlœw was unable to conceive of an abstract pattern lacking in phonetic reflexes, he asserted that the strong times are, like phonetic accents, associated with a phonetic event such as emphasis (*appui*, *coup de voix*). In reality, however, the existence of this and other putative phonetic events, such as a "hovering" (as opposed to a normal) accent on strong syllables in W position, has never been demonstrated.

The theory of Generative Metrics, introduced by Halle and Keyser (1966, 1971), made possible a new approach to these contentious problems by explicitly distinguishing between an abstract metrical template and the surface phonological properties of lines of verse. Within this theory, the strong positions of the template need not necessarily emerge as phonetic prominences; rather, what is required is that the abstract template relate to the accentual contour of the line in a rule-governed manner. Nevertheless, research within Generative Metrics, with a few exceptions, has ignored French versification.[1] The reason for this, I argue here, is that the rules that control the distribution of word accents in Old French verse, although substantively much like those of Shakespeare's or Milton's meter, are not inviolable conditions on well-formedness. On the contrary, the adherence of a certain text or of the productions of a particular poet to the well-formedness conditions can only be studied quantitatively in terms of the degree of deviation from absolute well-formedness along various dimensions, much as Halle and Keyser (1971) defined the varying tension of lines in English verse. These values of deviation define what I call here the "rhythmic style" of a text or of a poet.

Specifically, this article presents the results of a large-scale investigation of the rhythmic style of Old French octosyllabic texts, the first such study since that of Melchior (1909). Samples were included from all Old French octosyllabic texts whose date of composition is reasonably taken as prior to 1180, and a total of over 22,000 lines of verse were examined. The rhythmic style of these samples was then compared with a control sample of prose in order to measure more accurately the intentional manipulation of rhythm in the poetic texts. Texts were provided with several measures of rhythmic style, the most important being the average complexity per line (a measure of the deviation of a line from the expected iambic pattern).

A variety of results emerge from the data. First, a significant correlation is established between complexity and date of composition. Early works show a much greater adherence to iambic meter than do works dating from after 1165, the rise in complexity being fairly gradual and uniform over the course of the early 12th century. Second, a correlation emerges between genre and complexity, with the mid-12th century *romans d'antiquité* such as *Thèbes* and *Piramus et Tisbé* being particularly conservative in rhythmic style. Additional correlations can be seen in other quantifiable indicators of rhythmic style and in trends seen in the evolution of particular authors' productions over time.

These results in concert would have no explanation if iambic form were not in some fashion an abstract property of the French octosyllable, even where particular productions within the form depart from strict adherence to iambic rhythm.

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From the perspective of a universal metrics (Fabb & Halle, 2001), this result is expected: all eight-syllable lines typically consist of a sequence of binary feet of some type. The privileged element in a binary foot may be in correspondence with a phonetic accent or it may be indifferent to phonetic accent, but in either case the abstract binary structure remains intact. The Old French octosyllable, as shown here, presents a case where the relationship between the abstract binary structure and the disposition of phonetic accents, although stylistically manipulated and variable, is nonetheless detectable through quantitative analysis.

The remainder of the article is organized as follows. I begin with a brief survey of the major 20th-century studies of Old French verse rhythm. Next, I introduce the theoretical apparatus and assumptions used here, as applied first to English iambic verse and then extended to the Old French octosyllable, along with methods for determining the rhythmic properties of prose as a baseline for the effects expected simply by chance. I then list the samples taken for study here and include the results obtained, with discussion and exemplification of representative rhythmic styles. Finally, I apply these techniques to certain controversies of authorship.

PREVIOUS MAJOR STUDIES OF RHYTHMIC STYLE

Perhaps the most forceful defense of an underlying rhythmic alternation in French verse was presented by Saran (1904), who gathered statistics on the position of word accent in both Old French and classical French poetry and drama. His work, however, was marred by a proliferation of phonetic categories for accent: Saran made use of five distinctive levels of stress, with frequent additional minor differentiations among these. Moreover, he provided no explicit procedure for determining the levels of stress adduced. Such nuances of phonetic detail, in any event entirely too speculative for the study of a dead language, seem only to have obscured whatever major generalizations might have been found.

Melchior (1909) conducted an even more ambitious study, examining the occurrence of word accents in 17 Old French octosyllabic texts. He adopted the notation for stress proposed by Saran and categorized the accentual prominence of positions along a scale of up to nine degrees. Melchior then entertained over 275 different arrangements of these stress levels within an octosyllabic line and tabulated, but did not analyze further, the information gathered. The result is a large body of work that remains difficult if not impossible to interpret.

Lote (1951), on the other hand, rejected the premise that word accent plays any role in Old French verse outside of its obligatory occurrence at caesura and line end. He rightly complained that the evolution of Old French verse from Latin accentual meter has never been demonstrated in sufficient detail and may never be, given the paucity of evidence. Medieval descriptions and treatises on verse fail to give any indications that word accent was consciously manipulated in non-final positions of the line (or hemistich). Although evidence might emerge from the fact that some early texts, most notably the Clermont *Passion Poem* of the late 10th century, were accompanied by musical notation, the rhyth-

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mic interpretation of these neumed melodies is at best obscure and gives no clear indication that particular syllables in the text were rhythmically privileged or distinguished.[2] As for the evolution of Old French meter, Lote proposed that the simple syllable-counting requirements of the form emerged from a tradition of Latin versification in which neither quantity (having ceased to be reliably known prior to the Carolingian revival of learning) nor accent served any organizing function.

Lote's work is not without weakness, however. First, it is far from clear that all Old French verse originated from liturgical Latin verse models. In showing that the most important early vernacular literature in French – the earliest *chansons de geste* – are formulaic in structure much like any other species of orally transmitted epic poetry (Duggan, 1973; Lonigan, 1976; Luethans, 1990), recent scholarship has revived Gaston Paris's hypothesis of a prehistoric "popular" Old French poetic tradition with its own independent development and history. Second, Lote looked in vain for evidence from musical settings of texts, but did not explicitly acknowledge that text meter and musical meter need not be in a simple correspondence.[3] Finally, Lote, like Benlœw, Saran, and Melchior, assumed that metrical organization is directly manifested in the text through a transparent disposition of phonetic events of some type. In other words, Lote consistently conflated the property of a metrically strong position and a requirement of a phonetic prominence. For example, in refuting the possibility of an iambic parse for a passage of *La Vie de St. Alexis*, he wrote, "if one wanted to introduce an iambic rhythm binary accent by force into this passage, it would often fall on atonic *e* . . . [and] it would, despite the meaning, neglect the valuable words by falling on syllables lacking in importance" (1951:49). But as I intend to show, on these grounds most uncontroversially iambic English verse would also fail to qualify as iambic.

Suchier (1952), continuing in the tradition of Benlœw and Saran, disputed Lote's conclusions, presuming from the outset that iambic or trochaic metrical organization is usually present in all French verse.[4] He pointed out that the recitation of French poetry adheres to various conventions – alternating rhythm, equalized rhythm, division into prosodic phrases (*Takte* 'measures'), or recitation as if prose – but the very variety of these styles reveals that the metrical structure of the verse is not to be found directly in the performance of the texts. Among the arguments in favor of binary metrical structure that Suchier presented, the most compelling is that "counts of the position of accent in French verse have shown that in 7-syllable lines the word accent much more frequently falls on the odd-numbered syllables, while inversely in 8-syllable lines . . . on the even syllables. Both verse forms also show a tendency towards alternation, in 7-syllable lines trochaic, in 8-syllable lines iambic" (1952:17). While these alternations in word accent are not obligatory, the iambic (or trochaic) rhythm is the pattern which is most compatible in general with the distribution of word accents, and so "one may well infer from this that the poets had in mind an alternating meter in the construction of their verse" (Suchier, 1952:18).

Le Mée (1978) based her study on the ideas of Robert Austerlitz: meter is conceived as any organization of linguistic properties within a text, word accent being only one such possible property. The broad outlines of Le Mée's conclu-

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sions with respect to accent agree with Suchier's and with those of this article: namely that the distribution of accents is poetically meaningful in the verse examined, but that it does not adhere to strict conditions of well-formedness. Unlike Saran, Le Mée restricted her classification of syllables to stressed versus unstressed and gave explicit rules for determining when a given syllable is treated as stressed. While Le Mée's study has the virtue of a formal rigor unknown to earlier research, it suffers from a fairly restricted scope, since the texts considered are limited to five *lais* of Marie de France. Second, on grounds of structuralist impartiality, Le Mée refused to compare the meter investigated with any other known system of accentual verse. Lines of verse were simply analyzed as strings of stressed or unstressed syllables; these strings were then compared to the least deviant such string, which consisted of unstressed–stressed, repeated four times. Deviations from this "best" iambic string were then measured in terms of the information-theoretic content of the deviant string, measured in bits. While this approach has the merit of total neutrality, it likewise has the demerit of presuming no interesting properties of the system of accentual distribution aside from the existence of the "best" iambic string.

THEORETICAL PREREQUISITES

In this section I introduce the theory of Generative Metrics as it is applied to the Old French octosyllable. To begin, I provide a brief overview of Generative Metrical theory; readers acquainted with this research program may wish to skip this section.

Metrical positions and stress maxima

The primary insight of the theory of Generative Metrics, initiated in Halle and Keyser (1966, 1971), is that the well-formedness or metricality of a particular line of verse results from the extent to which the prosodic properties of the line can be set into correspondence with an abstract pattern consisting of a sequence of metrical positions. According to the original proposal of Halle and Keyser (1971), the typical English iambic pentameter consists of an abstract pattern of W (weak) and S (strong) positions (Halle & Keyser, 1971: 169), as in (3).

(3) (W)* S W S W S W S W S (X) (X)

The initial (W)* is interpreted as a sequence of zero or more W positions, and the final (X)(X) indicates that the last S position may optionally be followed by one or two stressless syllables.

A correspondence rule then determines in what way a line of verse may be aligned with the abstract pattern to give a well-formed (metrical) line. The essential observation is that S positions may be occupied by syllables of any type, but W positions are restricted (in English). Specifically, in most varieties of English iambics, W positions may not correspond to prosodic stress maxima.

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(4) Stress Maximum
When a fully stressed syllable occurs between two unstressed syllables in the same syntactic constituent within a line of verse, this syllable is called a "stress maximum."

In other words, a stress maximum is a stressed syllable flanked by stressless syllables, provided that no syntactic juncture (such as would be frequently indicated in writing by a period or, in some cases, a comma or other punctuation) intervenes. Consider the couplet from Keats in (5).[5]

(5) She *was* / a *gor*/dian *shape* / of *dazz*/ling hue,
Ver*mil*/ion-*spot*/ted, *gol*/den, *green*, / and blue (L I, 48–49)

It is easily seen that the stressed syllables are all stress maxima, since in each case the preceding and following syllables are stressless. As expected, each of these maxima occurs in an S position. The correspondence rule can now be stated.

(6) Correspondence Rule
a. A position in the abstract pattern corresponds to a single syllable.[6]
b. Stress maxima occur in S positions only (but not in all S positions).

The Keats couplet is metrical, since there exists a correspondence relation whereby each syllable is matched to some position in the abstract pattern; moreover, the stress maxima are associated only with S positions. Whenever a stress maximum is associated with a W position, in violation of (6), I refer to this as a mismatch between the prosodic shape of the verse and the abstract template.

Two noteworthy consequences of this definition of mismatch emerge. First, there is no requirement that S positions must contain stress maxima or even stressed syllables: indeed, many lines of verse contain weakly stressed or completely stressless syllables in S positions.

(7) a. And a / few Per/sian mutes, / who that / same year (L I, 390)
b. If I / were a / dead leaf / thou might/est bear;
If I / were a / swift cloud / to fly / with thee (OWW 43–44)

In (7a), it is undeniable that *a* is not phonetically stressed (in typical utterance), but must correspond to a S position in the meter. Nor is this possibility restricted to the initial foot: in (7b), unstressed *a* is in the strong position of the second foot in both lines. Second, in verse-initial position, and also immediately following a syntactic juncture, a stress maximum cannot arise, since there is no preceding stressless syllable (within the relevant domain). Hence, in such situations it is common in English verse to find a stressed syllable in a W position.

(8) a. So can/opied, / lay an / untast/ ed feast
Teeming / with o/dours. La/mia, re/gal drest,
Silent/ly paced / about, / and as / she went (L II, 131–132)
b. And last, / *pointing* / to Cor/inth, ask'd / her sweet (L I, 342)

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In (8a), the initial syllables of both *teeming* and *silently* are stressed, but, since both words are verse-initial, these syllables do not count as stress maxima and can be safely associated with W positions in the abstract pattern. Likewise, in (8b), *pointing* follows a syntactic break (as indicated by a comma here), and so the initial syllable of this word is also not a stress maximum and is also safely associated with a W position.

Monosyllables and stress clashes

As Halle and Keyser (1971) argued, the grammar of the iambic pentameter in English far surpasses previous descriptions by explicitly defining the range of deviations from a purely iambic rhythm that are still admissible. Most notably, acceptable English iambic verse does not necessarily consist of a monotonous repetition of phonetic accents in every other syllable; rather, a line is acceptable to the extent that the phonetic accents that it does contain are properly aligned with the abstract template.

Nevertheless, the correspondence rule as stated in (6) is not quite specific enough, since it does not precisely delineate under what circumstances a particular syllable counts as stressed or as unstressed, properties that are crucial for the definition of stress maxima. For polysyllabic words, the location of the primary and secondary stressed syllables is usually self-evident and can, in any case, be determined by well-known tests (Hayes, 1995). But in the case of monosyllabic words, some additional specification is needed. Not uncommonly, an entire line may consist of monosyllables.

(9) And for / her eyes: / what could / such eyes / do there
But weep, / and weep, / that they / were born / so fair? (L I, 61–62)

For the lines in (9), it seems intuitively plausible that the monosyllables found in S positions are stressed while those in W positions are not stressed. But even supposing that some satisfactory method could be devised for determining when a monosyllable would count as stressed, Kiparsky (1977) pointed out that the correspondence rule in (6) would make incorrect predictions for a line such as that in (10).

(10) Than are / *dreamt* of / in your / philo/sophy (Ham. 1.5.156)

Dreamt, if admitted as a stressed syllable, is reasonably construed as a stress maximum, since flanking *are* and *of* are presumably unstressed. But then a stress maximum would correspond to a W position, leading to an unmetrical line. Kiparsky's response to these cases was, in part, to restrict the syllables that count as stress maxima to the stressed syllables of polysyllabic content words only (in his terms, to lexical stresses). The correspondence rule can now be restated as a negative condition.

(11) Alternative Correspondence Rule
A primary stressed syllable of a polysyllabic word may not occupy a W position.

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Hence (10) is metrical, since *dreamt*, though stressed, is a monosyllabic word and therefore is not a stress maximum. Note that now the concept of stress maximum no longer plays a significant role in the correspondence rule. So while stressed monosyllables such as *dreamt* are now allowed to occupy W positions, as desired, a variety of situations that were freely allowed under the Halle–Keyser correspondence system are now excluded by the condition in (11). The clearest such exceptions are phrase- or verse-initial "inversions," shown in (8a) and (8b). While in the Halle–Keyser view the stressed syllables of such polysyllables cannot be stress maxima, in light of the condition in (11) such syllables will induce mismatches and must be exempted from doing so.[7]

The correspondence rules in (6) and (11) also make different predictions for stress clashes, situations in which two stresses are adjacent. The stress maximum approach, unless further modified, predicts that abutting stresses should effectively cancel each other: neither can be a stress maximum, since neither will be both preceded and followed by a stressless syllable. Such cases then ought to be freely permitted in iambic verse that obeys the conditions in (6). On the other hand, the condition in (11), unless further modified, prohibits the stressed syllables of polysyllables from occupying W positions, irrespective of whether a stressed syllable should precede or follow.

Poets in English appear to vary in their treatment of stress clashes, and the question is rendered complex by the possibility that, owing to the English Rhythm Rule, retraction may sometimes repair a clash. In general, Shakespeare appears to avoid clashes except under certain syntactic conditions, but metrically less conservative poets such as Shelley allow them much more freely.[8]

(12) a. With zeal, / as *men* / *study* / some stub/born art (Jul. 571)
b. And *wild* / *roses* / and i/vy serpentine (Ques. 3.5)
c. *Forbade* / *Shadow* / to fall / from leaf / and stone (Tri. 90)
d. He *be/gan play/ing* on / the lyre / at noon (Merc. 17)
e. The *dis/tinct val/ey* and / the va/cant woods (Al. 195)

Not only does Shelley allow stress maxima in W position where the word in question is at the left edge of a foot (*study, roses, Shadow*), as does Milton (see note 7), but he also allows foot-medial clashes (*began playing, distinct valley*) despite the correspondence rule.

To summarize, the treatment of stress clashes and of stressed monosyllables varies from poet to poet within the English metrical tradition. The most permissive usage, as seen perhaps in Shelley, conforms to the expectation of the stress maximum concept: wherever stresses are adjacent, neither stress contributes a mismatch. But more stringent requirements are seen in Shakespeare and Milton, for example, and these motivate Kiparsky's alternative constraint, stated in (11).

The abstract pattern of the Old French octosyllable

Having reviewed the formal apparatus that is used here, we can now consider how the Old French octosyllable may be analyzed. As mentioned before, an octosyllabic line consists of eight syllables, the final one of which must be stressed.

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A supernumerary unstressed syllable may follow the eighth syllable provided that it is contained in the same word. Such lines are termed feminine; otherwise a line is masculine. The opening lines of *Piramus et Tisbé* exemplify a masculine couplet followed by a feminine couplet (stressed syllables are italicized).

(13) En Ba/bi*loi*/ne la /ci*té*
*Fu*rent / dui *ho*/me re/no*mé*
Dui ci/te*ain* / de grant / hau*te*ce
De pa/ren*té* / et de / ri*che*ce. (*Pir.* 1–4)

'In the city of Babylon there were two famous men, two citizens of great stature, ancestry and wealth.'

It is easily seen that the four lines in (13) are perfectly iambic under either of the systems discussed previously. The abstract pattern for the octosyllable is shown in (14).

(14) Iambic Pattern
W S W S W S W S (X)

But as the example from *Tristan* (1) showed, there are many octosyllabic lines that either correspondence rule would rule out as unmetrical on the Iambic Pattern. Faced with such cases, which are by no means rare, one might retreat to the less restrictive pattern, shown in (15).

(15) Null Pattern
X X X X X X X S (W)

This template with no internal constituency is the Null Pattern. Undeniably, all "correct" Old French octosyllabic verse conforms to the Null Pattern.[9] So as an inviolable condition on the well-formedness of the verse type, the Null Pattern is an accurate description and the usual one. However, in relaxing utterly the requirement of internal rhythmic organization, the Null Pattern also fails to make any predictions about the internal structure of the line. If we accept that metrical forms are composed of linguistic primes, it would indeed be surprising that a string of eight positions of this sort could itself be a metrical form with no internal constituency. Instead, other things being equal, we must in the absence of data to the contrary assume that some internal structure exists within this template, the simplest assumption being that a template of eight positions consists of four constituents of two positions each. Since position 8 is a strong position, iambic feet are the most likely candidate for the constituents. This reasoning leads of course to the Iambic Pattern in (14).

The remainder of this article is devoted to showing that the Iambic Pattern, although violable, must still be postulated as part of the metrical system of Old French octosyllabic verse. Instead of looking for inviolable well-formedness conditions in Old French verse, we instead focus here on the degree to which various poets admit mismatches with the Iambic Pattern.

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Measuring iambicity and complexity

Since it is the degree to which a poet's work conforms to the Iambic Pattern that is of interest, we require some means of quantifying this property for a sample of verse. The simplest such measure involves counting the number of lines that are unmetrical for any reason and then calculating the percentage of metrical lines. I call this the iambicity of the sample. Iambically perfect samples, such as (13), have 100% iambicity, whereas mixed samples, such as (16), have much less (mismatches are italicized).

(16) Issu/e fu / de l'o/vreor.
Quant e/le le / cheva/*lier* voit,
qu[e] onques/ mes ve/ üe / n'avoit,
un pe/*tit* ar/*rie*re / s'estut
por ce / *qu'e*le / ne le / quenut (*Erec* 443–446)

'She had come out of the workshop.
When she saw the knight,
whom she had never seen before,
she stayed back a bit
because she did not know him'

In (16), a mere 1 out of 5 lines is metrical, giving an iambicity value of 20%.

In addition, more informative measures can be devised for the degree of deviation that a sample shows from the Iambic Pattern. Halle and Keyser (1971), for example, proposed particular measures for the tension of a line of verse, but here I adopt a simpler measure, proposed by Kiparsky (1977:195), for the complexity of a line.

(17) Complexity
The complexity of a line is measured by the number of mismatches in it.

It is clear that all four lines in the iambically perfect (13) have no mismatches, and so these lines have a total complexity of 0 and an iambicity of 100%. But for (16) there are $0 + 1 + 1 + 2 + 1$ mismatches, giving a total complexity of 5. A simple means of calculating the complexity of a sample of verse is to obtain the mean value of mismatches per line. For (13) the value is 0, and for (16) the value is $5/5 = 1.0$ (roughly one mismatch per line).

(18) Complexity of a Sample
The complexity of a sample equals the total number of mismatches in the sample divided by the number of lines in the sample (i.e., the mean value of mismatches per line of verse).

In addition to iambicity and complexity, I also make use of a modified measure of complexity which penalizes line-medial stress clashes. For example, consider the instances of stress clash in (19).

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(19) a. en*sems* / *cri*dent / tuit li / judeu
'Together all the Jews cried' (*Pass.* 239)
b. enui/*eus es*/tes et / vilains
'you are irritating and base' (*Yvain* 90)
c. que par / san*blant* / *cui*dent / et croient
'that, judging from appearances, they thought and believed' (*Erec* 5453)
d. se nus / li por/*roit di*/re voir
'whether anyone could tell him rightly' (*Erec* 5332)
e. "mere/ Deu, da/m[e]" Isem/*barz dist*
'"mother of God, lady," Isembart said' (*Gorm.* 635)

For convenience I refer to the positions in the line by numbers from 1 to 8. We can then say that the five examples in (19) show a 23-, 34-, 45-, 56-, and 78-clash, respectively.[10] Of these, the 45-clash is by far the most frequent, perhaps because the clash is mitigated by occurring at the boundary between the first two feet and the second two feet.[11] Moreover, the 78-clash can be considered less disruptive inasmuch as the monosyllable in position 8 does not constitute a stress maximum, but counts as stressed only in virtue of occupying position 8 in the line. The remaining three clash types are in fact considerably rarer, especially in early texts. For this reason, it seems reasonable to assign a value of 2 for lines containing 23-, 34-, or 56-clashes. When using this modified measure of deviation from the Iambic Pattern, I refer to the weighted complexity of a line:

(20) Weighted Complexity
The weighted complexity of a line is the number of mismatches it contains plus 1 for each instance of a 23-, 34-, or 56-clash.

The weighted complexity of a sample is then the mean weighted complexity per line.

Estimation of chance likelihood

Although we now possess a means for quantifying the deviation of a sample from the Iambic Pattern, we still have no idea at what point a sample of verse deviates so much that one might legitimately view it as having no iambic rhythm at all. In other words, we would like a measure of the chance likelihood of deviation from the Iambic Pattern.

Although one might imagine that, say, a value of 50% iambicity would constitute a chance distribution, this is not necessarily the case, since the distribution of stresses within phrases could in principle automatically give rise to a frequent pattern of iambic rhythm, even without a poet's deliberate manipulation.

In order to determine an approximate measure of this tendency, I examined a sample of unadorned Old French narrative prose: paragraphs 100 to 149 of Geoffroi de Villehardouin's chronicle *La conquête de Constantinople* (Dufournet, 1969). The prose was divided into strings, where each string ended with a period or comma in the edition consulted. In each such string, if the eighth-to-last syllable (or ninth-to-last, in case the phrase-final syllable was stressless) was also word-initial, the substring in question was taken as a pseudo-verse: that is, a

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sequence of prose words that could, technically at least, function as a line of octosyllabic verse.[12] Consider paragraph 110 in (21).

(21) Ensi partirent cil ‖ de l'ost / con vos / a*vez* / oï:
‖ mult fu / granz do/*ma*ges / à l'ost,
‖ et granz / *hont*[e] à / cels qui / le firent.
Lors commencierent à ‖ mo*voir* / les nés / et li / uiss*ier;*
et fu devisé ‖ qu[e] il pren/*droi*ent / port à / Cor*fol*,
‖ une / *ys*le / en Ro/men*i*e,
et li premier attendroient les darraiens tant qu'il seroient ensemble;
et il si fistrent.

'So these ones left the army as you have heard: there was great damage to the army and great shame upon those who did this. Then the ships and the boats for transporting horses began to set sail, and it was determined that they would make landing at Corfol, an island in Romania, and the first ones waited for the last ones until they were all together, and then they did this.'

Each initial segment of the prose is shown on its own line. The first five segments contain a pseudo-verse at the end, the beginning of which is indicated by ‖, while the last two segments do not admit a final pseudo-verse. The material in each line (segment) to the left of ‖ is discarded; only the material to the right of ‖ up to the end of the line contributes to the pseudo-verse.[13] The pseudo-verses in (21) have 0, 1, 1, 0, and 1 mismatches, as diagnosed by polysyllabic words. With respect to the stressing of monosyllables, certain choices are required, such as whether *port* in the second-to-last pseudo-verse contributes a mismatch. These choices are discussed in detail in the next section.

A total of 267 pseudo-verses were obtained, with the following results:[14]

(22) Rhythmic Properties of Prose Pseudo-Verses
Iambicity: 41.9% ± 6.0%
Complexity: 0.66 ± 0.09
Weighted complexity: 0.69 ± 0.09

These values give some indication of the chance likelihood of iambic rhythm in Old French. As one can see, a perfectly iambic line occurs quite often (36% to 48% of the time) simply by chance. A sample of verse then cannot be considered an intentionally constructed iambic rhythm unless it exceeds, to some degree, the values shown in (22). For this reason, in the remainder of the article we are mostly concerned with the ratio of the values obtained to the values shown in (22): this is called the percentage of chance value for a given sample. For example, the weighted complexity as percentage of chance of a sample (abbreviated WC/ch) is the weighted complexity of the sample divided by the weighted complexity of prose (0.69).

Correspondence rules for Old French

A priori there is no particular reason to prefer the stress maximum definition of mismatch, as in (6), or the more restrictive definition focusing on polysyllabic

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words, as in (11). But on either choice some additional specifications are needed. On the stress maximum approach, some definition is required regarding which monosyllables are stressed and which are not. Any such choice has an element of arbitrariness, but here I adopt the following.[15] All monosyllables are stressable except: (1) direct and indirect object clitics when proclitic on the verb, (2) conjunctions *e(t)*, *si* 'and', *ou* 'or', and *mes* 'but', (3) the pronoun *que* 'which', (4) the locative clitic *i* (Mod. Fr. *y*), (5) definite and indefinite articles (but not *un(e)* used as a number), (6) negative *ne*, and (7) monosyllabic subject pronouns when in the syllable preceding the verb (but not when separated from the verb by other clitics comprising at least one syllable, or when postverbal). Moreover, I assume that the following word types are unstressable, whether polysyllabic or monosyllabic: (8) auxiliary (but not main verb) uses of *estre* 'to be' and *avoir* 'to have' and (9) prepositions when preceding their object (unstressable words are italicized).

(23) *Li* cuens / *est* ve/nuz *an* / *la* place;
as vi/lains vient, / *si les* / menace:
une / verge / tient *an* / *sa* main;
arriers / *se* trai/ent *li* / vilain.
Li che/valiers / *s'est* a/vant trez;
a sa / puce/le dist / *an* pez … (*Erec* 801–806)

'The count came into the field; he came toward the commoners and threatened them: he held a switch in his hand; the commoners drew back. The knight advanced; he said tranquilly to his maiden …' (trans. Carroll, 1987)

Only stressable monosyllables contribute mismatches and only when these are flanked by stressless syllables. Thus, *tient* in the third line of (23) is a stress maximum and a mismatch, since the preceding word *verge* ends in a stressless syllable and the following preposition *an* is not stressable.

In assessing the complexity of a sample of verse I adopt the following correspondence rules for Old French.

(24) a. Polysyllable Rule
The main stress of a stressable polysyllabic word, unless verse- or phrase-initial, may occupy only a S position.
b. Monosyllable Rule
A stressable monosyllabic word, occurring between two stressless syllables (a stressless syllable of a polysyllabic word or any syllable of an unstressable word) within a line of verse, and not preceded or followed by a major phrase boundary, may occupy only a S position.

For concreteness I assume that major phrase boundaries are those that, in the editions consulted, correspond to the location of punctuation such as commas or periods.[16] Applying both the Polysyllable Rule and the Monosyllable Rule to (23), the lines have 1, 1, 2, 0, 1, and 0 mismatches (for *venuz*, *vilains*, *verge*, *tient*, and *avant*), with a rather high mean (relative to chance) of 0.83 mismatches per line. We can then conclude that this sample deviates highly from the Iambic Pattern.

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These two rules together impose rather tight restrictions on matching to the Iambic Pattern, more so than either correspondence rule introduced earlier for English iambic verse. There are two reasons for this. First, by adopting not only the Polysyllable Rule but also the Monosyllable Rule, we control for the greater preponderance of polysyllabic words in more elevated styles, because the same metrical requirements obtain in texts in which polysyllables are less frequent. Second, since our present concern is not to find those conditions that are inviolable (since all samples contain at least some non-iambic lines on even the loosest interpretation of the correspondence rules), it is most informative to assume the least flexible strictures as the basis of measuring line complexity.

Stylistic indicators

Two additional properties of a sample of verse can now be used as indicators of what I call its rhythmic style. These are, first, any preference for location of mismatch within the line and, second, any significant tolerance of (or dispreference for) stress clashes. As I intend to show, these stylistic indicators are in some cases quite robust for certain poets.

It is easily seen that these two properties can vary independently of total complexity. A sample in which all mismatches occur in position 5 (the first syllable of the third foot) would be highly skewed with respect to location of mismatches, but might otherwise appear equally as complex as a sample where mismatches occur randomly in the line. Likewise, since the Polysyllable Rule makes no special exemption for stress clashes, these contribute mismatches to total complexity, but a sample may vary in respect to whether such a contribution to the total is large or small.

WORKS SURVEYED

This section enumerates the text samples included in the study. In all, 38 samples, varying in size from 250 to 2,000 lines, were randomly chosen from a total of 42 distinct poetic works.[17] In order to avoid biasing statistical findings in cases where a single poet happened to produce a large surviving *oeuvre* of similar texts, I have chosen, in the case of Philippe de Thaün, Wace, and Crestien de Troyes, to group together into one sample two or three works that are close in time and of the same genre. Where a single poet wrote in more than one genre or where the works are separated by about 10 years in date of composition, I have in some cases treated works by the same poet as separate samples.

In the list that follows, each sample is introduced by the abbreviation used to designate it here, followed by the full title of the work(s) included in the sample, a brief description, the size (number of lines) of the sample, followed in parentheses by the total number of lines in the work and the percentage of this total taken as the sample, and finally an approximate date of composition assigned for this study. Additional information, including the editions consulted, exact sections of texts examined, and remarks on dating of texts, is provided in the Appendix.

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Pass. The *Passion de Clermont*, 500 lines (516, 96.9%), c. 1000.

Leger *La vie de Saint Leger*, 240 lines (entire poem), c. 1000. *Leger* and the *Passion* poem, known together as the Clermont poems, are anonymous works known from a late 10th century manuscript of Clermont-Ferrand.

Gorm. *Gormont et Isembart*, 610 lines (entire poem), c. 1086. Anonymous and fragmentary *chanson de geste*, preserved in a single manuscript known as the Brussels Fragment.

Alex. The *Alexandre* fragment by Alberic de Besançon (Pisançon), c. 1100. Only 106 lines remain of this early Franco-Provençal life of Alexander, of which 103 lines (97.2%) were used in this study.

Bren. *The Voyage of St. Brendan* by Benedeit, an Anglo-Norman monk, 500 lines (1,834, 27.3%), c. 1114.

Marg. *La vie de Sainte Marguerite* by Wace, a Norman cleric, 500 lines (750, 66.7%), c. 1134.

PhTh. Lapidaries ascribed to Philippe de Thaün, an Anglo-Norman cleric, including: *Le Bestiaire* (*Best.*), 250 lines (304, 82.2%);[18] the *Apocalyptic Lapidary (Apoc.)*, 282 lines (297, 95.0%); and the *Alphabetic Lapidary (Alph.)*, 750 lines (1372, 54.6%). Total for all three works: 1,282 lines, c. 1145.

Est. The *Estoire des Engleis* by Geffrei Gaimar, an English chronicler, 750 lines (6,526, 11.5%), c. 1138.

Adam *Play of Adam*, also called *Jeu d'Adam* or *Mystère d'Adam*, an anonymous Anglo-Norman biblical drama, 250 lines (737 octosyllabic lines out of 944 lines total, 33.9%), c. 1140.

Wace Two religious poems of Wace, *The Conception of Nostre Dame* (*Nos.*) and *La vie de Saint Nicolas* (*Nic.*), 1,000 lines (500 lines from each work; 1,810, 27.6%; 1,562, 32.0%), c. 1145.

FrLap. The so-called *First French Version* of Marbode's Lapidary, a verse translation of *De Lapidibus* of Marbode, Bishop of Rennes, 500 lines (966, 51.8%), c. 1145.

Theb. *Le roman de Thèbes*, anonymous continental *roman d'antiquité*, 500 lines (10,562, 4.7%), c. 1150.

Prov. The *Proverbes de Salemon* by Samson de Nantuil, an Anglo-Norman didactic work, 500 lines (11,852, 4.2%), c. 1150.

Pir. *Piramus et Tisbé*, anonymous continental adaptation of the myth in Ovid's *Metamorphoses*, 500 lines (921, 54.3%), c. 1150.

Brut *Le roman de Brut* of Wace, a chronicle of English history, 500 lines (14,866, 3.7%), completed 1155.

Edm. *La passiun de Seint Edmund*, anonymous Anglo-Norman saint's life, 500 lines (1,696, 29.5%), c. 1155.

Eneas *Le roman d'Eneas*, anonymous continental *roman d'antiquité*, 500 lines (10,156, 4.9%), c. 1160.

Narc. *Le lai de Narcisus*, anonymous continental adaptation of the myth in Ovid's *Metamorphoses*, 500 lines (1,002, 49.9%), c. 1160.

Floire The so-called aristocratic version of *Le conte de Floire et Blancheflor*, anonymous continental *roman byzantin*, 500 lines (about 3,340, 15.0%), c. 1160.

Sages *Le roman des sept sages*, anonymous continental version of the Legend of the Seven Sages of Rome, 500 lines (5,068, 9.9%), c. 1160.

Troie *Le roman de Troie* of Beneeit de Sainte-More, continental *roman d'antiquité*, 500 lines (30,316, 1.7%), c. 1165.

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Laur. *La vie de Saint Laurent*, anonymous Anglo-Norman saint's life, 250 lines (949, 52.7%), c. 1165.

Erac. *Eracle*, by Gautier d'Arras, continental *roman byzantin*, 500 lines (6,567, 7.6%), c. 1165.

Lais The *Lais* of Marie de France, short works based on Celtic folklore (la matière de Bretagne), 500 lines (5,786, 8.6%), c. 1167.

Grac. *Le Gracial* of Adgar, an Anglo-Norman collection of miracles of the Virgin Mary, 500 lines (8,786, 5.7%), c. 1170.

Mich. *Le roman du Mont-Saint-Michel* of Guillaume de Saint-Pair, Norman chronicle of the history of the monastery of Mont-Saint-Michel, 500 lines (3,781, 13.2%), c. 1170.

Guil. *Guillaume d'Angleterre*, continental *roman d'aventures* sometimes attributed to Crestien de Troyes, 500 lines (3,306, 15.1%), c. 1170.

Edw. *La vie d'Edouard le Confesseur*, Anglo-Norman saint's life written by a nun of the abbey of Barking, 750 lines (6,685, 11.2%), c. 1170.

Ille *Ille et Galeron*, a *roman breton* by Gautier d'Arras, 500 lines (about 6,650, 7.5%), c. 1172.

Tris. The *Tristan* of Thomas, fragmentary Anglo-Norman *roman breton* of the story of Tristan and Iseut, 500 lines (3,136, 15.9%), c. 1172.

Phil. *Philomena*, continental adaptation of the myth in Ovid's *Metamorphoses*, usually attributed to Crestien de Troyes, a Champenois, 500 lines (1,468, 34.1%), c. 1172.

Cres1 Two early *romans bretons* of Crestien de Troyes: *Erec et Enide* (*Erec*) and *Cligés* (*Clig.*), 1,000 lines (500 from each *roman*; 6,725, 7.4%; 6,762, 7.4%), c. 1173.

Rou *Le roman de Rou* of Wace, a chronicle of the dukes of Normandy, 750 lines (11,440 octosyllabic lines, 6.6%), c. 1175.

Cath. *La vie de Sainte Catherine d'Alexandrie* of Clemence of Barking, an Anglo-Norman nun of that abbey, 500 lines (2,700, 18.5%), c. 1176.

Livre *Le livre des manières* of Estienne de Fougères, bishop of Rennes, 500 lines (1,344, 37.2%), c. 1176.

Cato The *Afaitement Catun*, an Anglo-Norman translation of *Cato's Distichs (Disticha Catonis)* by Elie de Wincestre, 136 lines (all octosyllabic lines in poem), c. 1179.

Cres2 Two later *romans bretons* of Crestien de Troyes: *Le chevalier de la charrete (Lanc.)* and *Le chevalier au lion* (*Yvain*), 2,000 lines (1,000 lines from each *roman*; 6,164, 16.2%; 6,818, 14.7%), c. 1179.

Godf. The conclusion (about ll. 6165ff.) of Crestien de Troyes' *Le Chevalier de la charrete (Lancelot)*, written at Crestien's request by Godefroy de Lagny, a Champenois, 500 lines (948, 52.7%), c. 1179.

RESULTS

Table 1 shows the values obtained for iambicity (I), complexity (C), weighted complexity (WC), and weighted complexity as a percentage of chance (WC/ch) for the 38 samples studied. The various complexity values are provided with a confidence interval for $p < .05$ as determined by a *t* test. In the genre column the works are classified as hagiographic/scriptural (R), *roman d'antiquité*

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TABLE 1. *Iambicity, complexity, and weighted complexity*

Work	Genre	Date	Size	I	C	WC	WC/ch
Pass.	R	1000	500	82.6	.186 ± .038	.190 ± .039	.276 ± .057
Leger	R	1000	240	85.0	.158 ± .050	.167 ± .050	.242 ± .078
Gorm.	O	1086	610	82.1	.203 ± .038	.208 ± .057	.302 ± .057
Alex.	A	1100	100	93.0	.070 ± .051	.080 ± .060	.116 ± .089
Bren.	R	1114	500	67.2	.376 ± .054	.390 ± .057	.566 ± .083
Marg.	R	1134	500	62.8	.446 ± .060	.466 ± .064	.676 ± .093
PhTh.	O	1136	1282	56.8	.515 ± .038	.536 ± .042	.778 ± .061
Est.	O	1138	750	72.3	.319 ± .041	.336 ± .045	.488 ± .065
Adam	O	1140	250	69.2	.364 ± .077	.376 ± .081	.545 ± .118
Wace	R	1145	1000	58.5	.491 ± .043	.509 ± .046	.739 ± .067
FrLap.	O	1145	500	61.2	.492 ± .066	.522 ± .072	.758 ± .067
Theb.	A	1150	500	71.4	.322 ± .050	.344 ± .055	.499 ± .08
Prov.	R	1150	500	59.7	.450 ± .054	.462 ± .057	.670 ± .083
Pir.	A	1150	500	75.0	.264 ± .042	.288 ± .049	.418 ± .071
Brut	O	1155	500	57.6	.510 ± .063	.526 ± .066	.763 ± .095
Edm.	R	1155	500	67.2	.378 ± .054	.384 ± .055	.557 ± .080
Eneas	A	1160	500	67.6	.360 ± .051	.378 ± .055	.549 ± .080
Narc.	A	1160	500	73.2	.334 ± .053	.350 ± .056	.508 ± .081
Floire	B	1160	500	62.2	.448 ± .059	.464 ± .064	.673 ± .091
Sages	B	1160	500	62.6	.428 ± .056	.442 ± .059	.641 ± .118
Troie	A	1165	500	65.8	.412 ± .058	.426 ± .061	.618 ± .089
Laur.	R	1165	250	56.8	.548 ± .098	.564 ± .102	.818 ± .148
Erac.	A	1165	500	73.6	.292 ± .047	.308 ± .051	.447 ± .074
Lais	B	1167	500	61.6	.476 ± .063	.486 ± .065	.705 ± .094
Grac.	R	1170	500	55.8	.522 ± .062	.552 ± .067	.801 ± .097
Mich.	O	1170	500	72.0	.338 ± .055	.366 ± .055	.531 ± .090
Guil.	O	1170	1000	56.7	.514 ± .043	.532 ± .044	.772 ± .064
Edw.	R	1170	750	55.7	.543 ± .054	.552 ± .055	.801 ± .080
Ille	B	1172	500	69.6	.358 ± .055	.378 ± .059	.549 ± .086
Tris.	B	1172	500	56.6	.532 ± .066	.556 ± .070	.807 ± .102
Phil.	A	1172	500	57.0	.524 ± .064	.564 ± .064	.818 ± .105
Cres1	B	1173	1000	56.3	.539 ± .046	.561 ± .048	.814 ± .070
Rou	O	1175	750	57.1	.510 ± .053	.549 ± .057	.797 ± .083
Cath.	R	1176	500	56.8	.534 ± .066	.550 ± .069	.798 ± .100
Livre	O	1176	500	58.8	.496 ± .062	.514 ± .066	.746 ± .096
Cato	O	1179	136	58.8	.463 ± .107	.493 ± .107	.712 ± .173
Cres2	B	1179	2000	58.3	.498 ± .031	.508 ± .032	.736 ± .046
Godf.	B	1179	500	54.4	.532 ± .061	.558 ± .066	.810 ± .096
Prose			267	41.9	.663 ± .085	.689 ± .093	1.00

or *roman byzantin* (A), *roman breton* (B), or other (O) such as *chanson de geste*, chronicle, drama, didactic, and so on.

The WC/ch values are plotted in Figures 1, 2, and 3. Figure 1 shows weighted complexity (as a percentage of chance) against date of composition. The regression line is a simple linear regression showing a correlation between complexity

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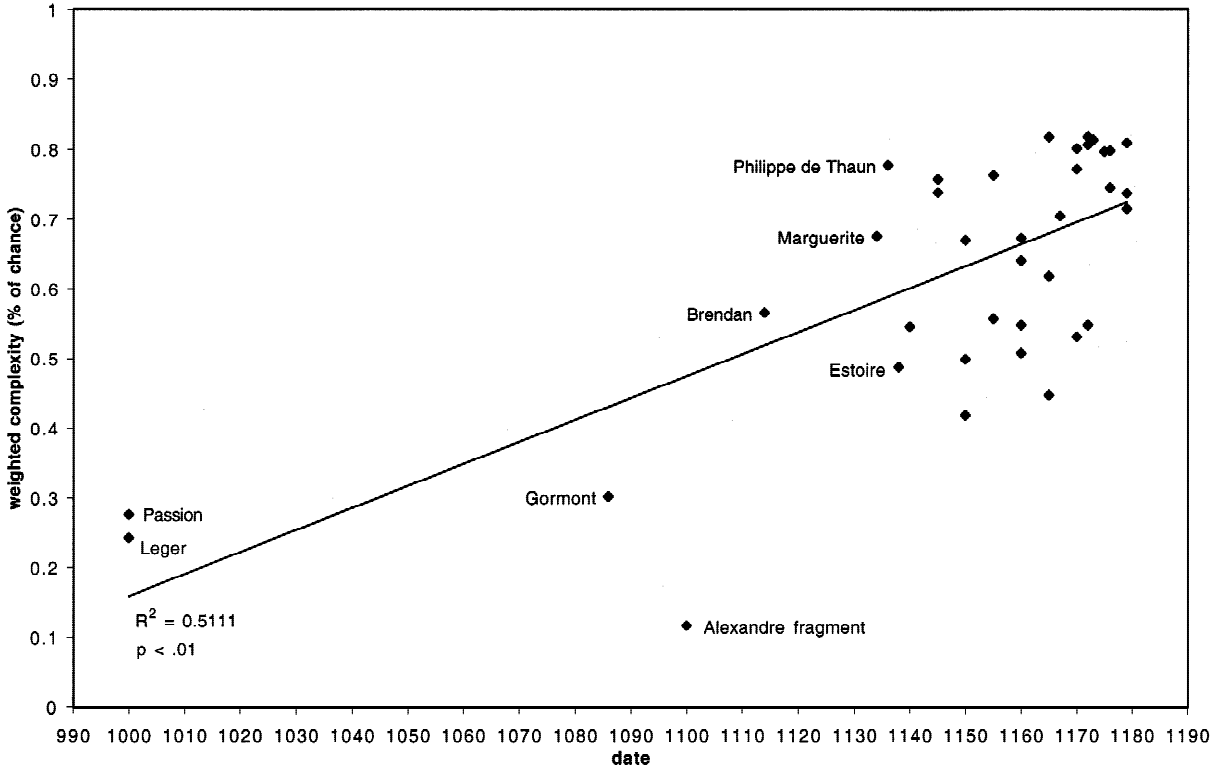


FIGURE 1. Weighted complexity (% of chance) versus date.

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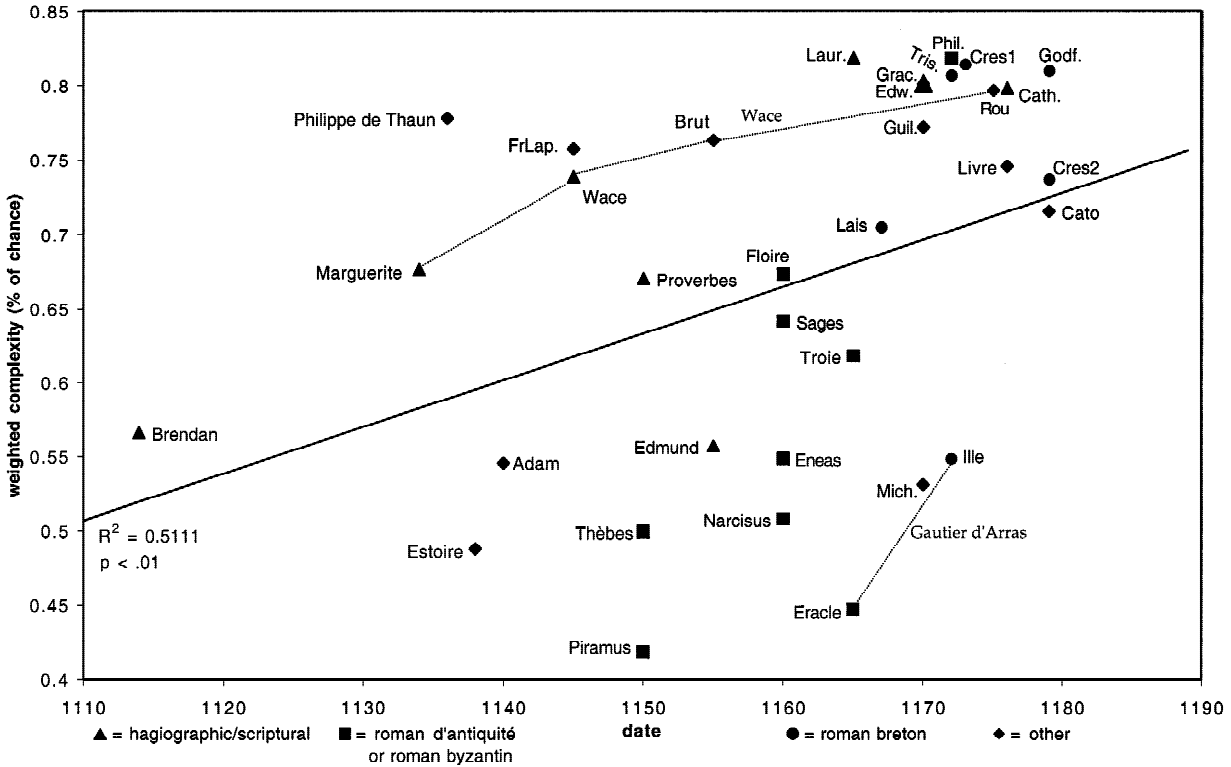


FIGURE 2. Weighted complexity (% of chance) versus date (detail).

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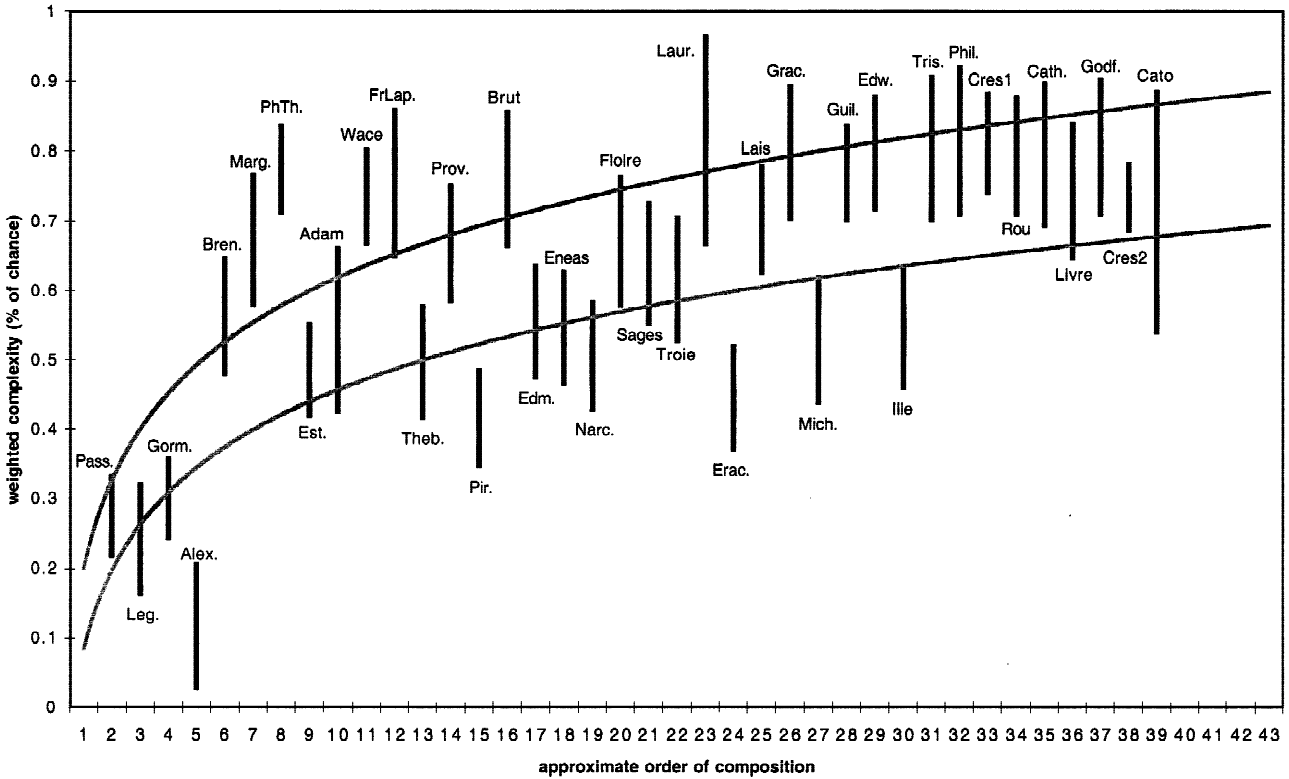


FIGURE 3. Weighted complexity (% of chance) versus order of composition.

and date of composition at the statistically significant level of $p < .01$. Figure 2 is a detail of Figure 1, showing the results for works written from 1110 onwards. The central line is the regression, while the points for the various samples taken from Wace's work (*Marg.*, *Wace*, *Brut*, and *Rou*) are connected by a line, as are the two works of Gautier d'Arras (*Erac.* and *Ille*). In Figure 2, the shape of the data point encodes genre: triangles for genre *R*, squares for genre *A*, circles for genre *B*, and diamonds for all others. Within the time interval shown in Figure 2 there is considerable variation, although the trend is clearly still towards greater complexity, as can be seen from the clustering of works (*Laur.*, *Grac.*, *Edw.*, *Guil.*, *Tris.*, *Phil.*, *Cres1*, *Rou*, *Cath.*, and *Godf.*) in the upper right during the period 1165–1180.

Inspection of Figures 1 and 2 reveals certain interesting findings. We first consider the influence of genre. Of the 11 works classified as *roman d'antiquité* or *roman byzantin* (*A*: squares), 8 occur below the regression line (this includes *Alex.*, not shown in Figure 2). As for the remaining 2, *Floire* is only just slightly above the regression line; only *Phil.*, Crestien de Troyes' sole work within this genre, is markedly complex in rhythm, being on a par with Crestien's other early works (*Cres1*). Admittedly, there may be a confounding influence of date of composition: the *romans d'antiquité* enjoyed a vogue in the period 1150–1170, after which time fashion turned to *romans bretons*. However, even during this interval one can see that works of other genres, such as Wace's early religious poems (*Marg.*, *Wace*) and chronicle (*Brut*) as well as Samson de Nantuil's *Prov.*, show much higher complexity on average. Conversely, of the 10 hagiographic/scriptural works (*R*: triangles), a genre that continued in popularity all during the time period considered in this study, only *Edm.* is below the regression line. Likewise, 5 out of 6 of the *romans bretons* (*B*: circles) are above the regression line. Again, the outlier (*Ille*) is by an author whose other work is of similar complexity: Gautier d'Arras's *Erac.* and *Ille* both conform to the Iambic Pattern much more closely than would be expected for their date of composition. We can conclude that date of composition and genre together are more accurate indicators of complexity than either alone.

The second important observation is that the trend toward greater complexity not only characterizes the set of samples as a whole, but also is revealed in the works of individual authors. For instance, the value for WC/ch of Wace's earliest known work, *Marg.*, is .68, whereas by the end of his career, in *Rou*, it has risen to a mean of .80. The change seen between Gautier d'Arras's *Erac.* and *Ille* is similar. Again, genre presents a potentially confounding influence, since *Erac.* is a *roman byzantin* and *Ille* is Gautier's (somewhat unconventional) foray into the *roman breton*. But the differences in rhythmic style (at least within the samples studied) is quite striking. The exception to the trend toward greater complexity within an author's work is in the drop seen from Crestien de Troyes' early works (*Cres1* and *Phil.*) versus his later works (*Cres2*), a question which is discussed in detail later on.

Figure 3 shows the confidence interval ($p < .05$) for weighted complexity (as a percentage of chance) versus approximate order of composition.[19] The regression lines are best-fit logarithmic functions for the minima and maxima of the

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TABLE 2. *The 3/5 ratio and clash value*

Work	Genre	Date	Size	3/5	Deviation	Clash
Pass.	R	1000	500	0.87	−1.21	3.6
Leger	R	1000	240	1.00	−0.88	3.3
Gorm.	O	1086	610	1.63	+0.73	4.9
Alex.	A	1100	100	2.00	**+1.68**	2.0
Bren.	R	1114	500	3.23	**+4.82**	6.6
Marg.	R	1134	500	1.47	+0.32	6.4
PhTh.	O	1134	1282	1.05	−0.75	5.6
Est.	O	1138	750	1.56	+0.55	6.7
Adam	O	1140	250	1.05	−0.75	4.4
Wace	R	1145	1000	1.38	+0.09	5.6
FrLap.	O	1145	500	1.56	+0.55	7.8
Theb.	A	1150	500	2.42	**+2.75**	5.4
Prov.	R	1150	500	1.25	−0.24	3.4
Pir.	A	1150	500	1.76	+1.06	5.2
Brut	O	1155	500	1.25	−0.24	4.8
Edm.	R	1155	500	0.94	−1.03	2.8
Eneas	A	1160	500	1.68	+0.86	6.4
Narc.	A	1160	500	1.19	−0.39	5.0
Floire	B	1160	500	1.12	−0.57	6.2
Sages	B	1160	500	1.32	−0.06	4.0
Troie	A	1165	500	1.24	−0.27	4.0
Laur.	R	1165	250	1.12	−0.57	7.2
Erac.	A	1165	500	1.06	−0.73	4.2
Lais	B	1167	500	1.15	−0.50	4.8
Grac.	R	1170	500	1.11	−0.60	6.2
Mich.	O	1170	500	2.55	**+3.08**	9.4
Guil.	O	1170	1000	1.06	−0.73	6.6
Edw.	R	1170	750	0.88	−1.19	4.9
Ille	B	1172	500	0.93	−1.06	6.4
Tris.	B	1172	500	1.22	−0.32	6.2
Phil.	A	1172	500	1.16	−0.47	9.2
Cres1	B	1173	1000	1.15	−0.50	7.3
Rou	O	1175	750	1.44	+0.25	6.9
Cath.	R	1176	500	1.15	−0.50	6.0
Livre	O	1176	500	1.50	+0.40	8.0
Cato	O	1179	136	1.85	**+1.29**	7.4
Cres2	B	1179	2000	0.94	−1.03	6.1
Godf.	B	1179	500	1.23	−0.29	6.8

Mean 3/5 ratio: 1.34 ($SD = 0.39$)

confidence intervals. The trend toward greater complexity is significantly correlated with approximate order of composition ($p < .01$). From the confidence intervals shown, one can begin to get a sense of the extent to which two works may legitimately be construed as having a similar rhythmic complexity.

Besides the mean value of complexity for a sample, other stylistic indicators can be derived from the data collected. Table 2 gives two such values of interest.

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The column labelled "3/5" shows the ratio of the number of mismatches incurred at position 3 in the line to the number occurring at position 5. The column to the right shows the deviation (expressed in standard deviations) from the mean for this value. Values shown in boldface are either below the 10th percentile or above the 90th. The column labelled "clash" shows the percentage of lines which contain clashes, including 78-clashes.

EXAMPLES AND DISCUSSION

Although the data do not easily lend themselves to, or require, an interpretation in terms of a hierarchy of discrete categories of rhythmic complexity, it is useful for the purposes of illustration to divide the works into four categories, based on their mean complexity scores:

(25) a. WC/ch $<$ .45 : highly iambic
b. WC/ch from .45 to .61: moderately iambic
c. WC/ch from .61 to .77: transitional
d. WC/ch $>$ .77: mixed rhythm

(26) a. highly iambic: Pass., Leger, Gorm., Alex., Pir., Erac.
b. moderately iambic: Bren., Est., Adam, Theb., Edm., Narc., Eneas, Mich., Ille
c. transitional: Marg., Wace, FrLap., Brut, Prov., Floire, Sages, Troie, Lais, Livre, Cres2, Cato
d. mixed rhythm: PhTh., Laur., Grac., Guil., Edw., Tris., Phil., Cres1, Rou, Cath., Godf.

Examples of each type are provided in the following discussion.

Highly iambic works

The binarity hypothesis is strikingly confirmed in the earliest extant octosyllabic texts in Old French. The Clermont poems are almost entirely iambically regular on the assumptions adopted here, and the *Alex.* fragment is even more so. In the 103 lines of the *Alex.* fragment that scan reliably as octosyllabic, a mere 7 lines are non-iambic (of which two involve a stress clash and one a monosyllable; hence these would still be iambic under a less stringent correspondence rule).[20] *Alex.*, however, is a Franco-Provençal poem and might on these grounds be dismissed as having come under metrical influences not properly Francien. But the iambic regularity of the purely Francien texts *Gorm.*, *Pir.*, and *Erac.* is still quite remarkable, as shown in the following passage from *Gorm.* (mismatches are italicized).

(27) Quant Lo/owis, / li reis / preisiés,
vit si / murir / ses che/valiers
e ses / compaig/nes des/trenchier,
mult fut / dolenz / e es/maiés.
"Aï/e, Deus, / pere / del ciel!"

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dist Lo/owis, / li reis /presiés.
"Tant par / me tiegn / por en/gignié
que n'i / jostai / ui de / premiers
tot cors / a cors / a l'a/versier!
Ja est / il reis / e reis / sui jié:
la no/stre jo/st[e] aven/*ist bien*.
Li quels / de nus / idunc / venquiest
n'en fus/sent mort / tant che/valier
ne tant / franc ho/me de/trenchié.
Ber sainz / Denis, / or m'en / aidiez!
Jeo tiegn / de vus / *quite* / mun fief:
de nul / *altre* / n'en co/*nois rien*,
fors sul / de Deu, / le veir / del ciel. (*Gorm.* 360–377)

'When Louis, the famous king, saw his knights die this way, and his companions cut down, he was very sad and dismayed. "Alas, God, Father of Heaven!" said Louis, the famous king, "I was so badly deceived that I did not first do battle man-to-man with the enemy today! He is a king and I am also a king: [the time for] our combat has indeed arrived. Whichever of us should then be the victor, so many knights will not die from it, nor so many free men be cut down. Noble St. Denis, help me now! From you I hold my fief in liberty: I recognize nothing of it from any other, save only God, the truth of heaven."'

This passage is quite representative: it has 4 mismatches in 18 lines and a weighted complexity .22, WC/ch = .32, quite close to the mean for the sample as a whole (.29 ± .06). Note that verse-medial stresses after a juncture, as in line 364 *pere*, do not contribute mismatches, nor does each iambic foot have to contain a phonetic stress. These properties perhaps have obscured the fact that *Gorm.* is, with only occasional exceptions, an instance of iambic verse.

It is not known for certain whether *Gorm.* and other highly iambic texts, such as the much later *Life of St. Modwenna* (c. 1230; Baker & Bell, 1947), were actually sung, although some scholars have assumed that if a text shows marked rhythmic regularity this is evidence that it was a sung text. If this were so, however, we should expect to see a sharp distinction between sung texts showing a high preference for iambic rhythm and read texts with little or no rhythmic regularity. In fact, the data gathered here suggest that the change from high to low iambicity was gradual, and that regular iambic rhythm persists in some works, such as *Pir.* and *Erac.*, well into the period of change to mixed rhythm forms designed for reading alone. In *Pir.* it is not at all uncommon to find long passages with only a few non-iambic lines:

(28) Ne la / tint us / ne ferm/eüre:
De la / *chambr*[e] ist / *toute* / seüre,
Sole / par nuit / et sans / paour:
Tel har/dement / li don[e] / Amour.
Quant fu / issu/e de / la sale
Et el/e de/valoit / l'eschale,
Si mist / avant / le pié / senestre;
Toner / oï / de de/sus destre,

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Senti / tot le / palais / fremir
Et vit / la lu/ne em/palir,
Vit le / huant, / vit la / fresaie,
Mais nis / uns sig/nes ne / l'esmaie,
A quel / fin qu'el/e doi/e traire,
Que ne / parfac/e son / afaire. (*Pir.* 632–641)

'Neither doors nor gates held her back: she came out of the room entirely with assurance, alone in the night and without fear: Love gave her such boldness. When she came out of the room and descended the stairway, she put her left foot forward and heard thunder below on the right, she felt the whole palace resound, and saw the moon become pale, she saw the owl, she saw the screech-owl, but not a single omen discouraged her from whatever goal she might pursue in order to complete her affair.'

Similarly, in *Erac.*, a text certainly not written to be sung, passages consisting of mostly iambic lines are easily found:

(29) Li mes/sagier / sont es/leü,
vers le / river/e sont / meü.
Illuec / se font / li mes/sagier
en un/e nef / *outre* / nagier.
Ne voe/lent pas / passer / au pont,
qu'il ert / plus d'u/ne liu/e lonc;
ne voe/lent lor / cevaus / lasser,
por ce / les font / illuec / passer.
Quant d'au/tre part / sont a/rivé,
montent / et sont / *tuit* a/brievé.
Trespass/ent ce/le gent / menue;
onques / n'i ot / *resne* / tenue
entreus / qu'il vie/nent a / celui
qu'il vont / querant, / et pres / de lui
sont *tres*/*tout qua*/*tre* des/cendu. (*Erac.* 5518–5533)

'The messengers rushed forward, they moved toward the river. There the messengers sailed forward in a ship. They did not want to cross the bridge, as it was more than a league long; they did not want to tire their horses in order to make them cross there. When they arrived at the other side, they mounted and all continued on their way. They passed by the unimportant people; never was rein held while they were coming to him whom they came seeking, and all four came down near him.'

Moderately iambic texts

Although *Pir.* and *Erac.* show that highly iambic texts continued to be written in the mid-12th century, Figure 2 shows that, beginning with Benedeit's *Bren.*, one finds increasingly less adherence to the Iambic Pattern. Nevertheless, most works of this period are still well below chance levels of iambic rhythm. As an example of a moderately iambic text we may consider the following passage from Gaimar's *Est.*, relating the death of Edward and the omens presaging the Norman

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Conquest. Here, mismatches occur in about every third line, as opposed to about every fifth line for *Gorm.*

(30) En i/*cel* an / Edward / transit,
Vint e / *quat*r[e] anz / regnat, / ço quit,
Le miel/dre rei / e le / meillur
Qu[e] Engleis / eüs/sent a / seignur
E la / reï/n[e] Edit / murut,
Si cum / Deu plot / e es/tre dut,
A West/muster / furent / posez
En dous / sarcuz / mult bien / ovrez.
Aprés / lur mort / une / comete —
Un[e] est/*eill*[e] est / dunt li / prophete
E li / *bon* as/trono/mïen
Sevent / qu'espelt / u mal /u bien —
Se de/mustrat / al fir/mament,
Asez / la vir/ent mein/te gent.
La nuit / de Le/*taine* / majur
Fist tel / clarted / cum se / fust jur,
Mult plu/*surs hu*/mes l'es/gardirent
En meint / endreit / en de/venirent,
Chascun / diseit / sa de/vinaille.
Mais tost / survint / la grant / cuntraille
E la / *grant* tri/bula/tïun
Qui puis / avint / el re/gïun. (*Est.* 5131–5152)

> 'In that year Edward passed away; he reigned twenty-four years, it seems, the greatest and best king which the English had as lord; [and] Queen Edith died, as God willed and as it had to be. They were placed in Westminster in two very well-wrought coffins. After their death a comet – it was a star which the good astronomers knew portended either bad or good – showed itself in the heavens; many people saw it. The night of Greater Litany it made such a brilliance that it was like day; many different people watched it and it appeared in many places; each person pronounced his own conjecture. But soon there unexpectedly came that great misfortune and great tribulation which occurred then in the region.'

This passage, with 8 mismatches, has a weighted complexity of .36 and is quite representative of the sample taken (WC/ch = .336 ± .05). Again, there is no requirement that each foot contain a phonetic stress: feet such as *e le* (l. 5133), *e la* (ll. 5135, 5151), *une* (l. 5139), and *-sent a* (l. 5134) do nothing to create a phonetic sense of iambic rhythm, but nevertheless are metrically acceptable as iambic feet.

Eneas is only a little more complex. Some passages show abundant mismatches; others show nearly none:

(31) a. Ançois / que nus / d'aus s'i / armast,
ne que / saire/*ment* i / jurast,
mostre / Ene/*as* sa / raison
tolt soi / li rois / et li / baron:
"Seignor, / mon droit / mostrer / vos voil

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que nel / m'ator/*noiz* a / orgoil
que par / *force* / *voille* / conquerre
autrui / enor / ne au/*trui terre* (*Eneas* 9343–9350)

'Before any one of them armed himself or swore the oath, Aeneas revealed his cause, the king and the barons holding silent: "Lords, I want to explain to you my rights, so that no one may with arrogance accuse me of wanting to forcefully conquer the domains, the land of another."'

b. Li rois / et cil / qu'iluec / estoient
bien l'as/eü/rent et / otroient
que, s'an / batail/l[e] est lo / jor morz,
Asca/nïus / o son / esforz
s'an puet / aler / tot qui/temant
a Mon/talban / seü/remant (*Eneas* 9395–9400)

'The king and those who were with him guaranteed and agreed that, should he die that day in the battle, Ascanius and his troops would be able to go in complete peace and security to Montalban.'

(31a) contains 6 mismatches in 6 lines and therefore is a highly non-iambic passage, whereas (31b) has no mismatches in 6 lines. Texts such as *Eneas* show the beginnings of that conscious manipulation of rhythmic patterns, introducing variety in the verse, which is the hallmark of later French poetry.

Transitional texts

With the exception of the lapidaries of Philippe de Thaün (*PhTh.*), which we return to shortly, all texts written prior to about 1165 have a WC/ch value of less than .77. Those texts that, while less iambic than those just discussed, still have an average of about less than one mismatch for every two lines are reasonably viewed as transitional. At most half the lines can be non-iambic, and in practice the range for texts in this descriptive category varies from about 57% to 66% iambic lines.

Wace's early religious works *Marg.*, *Nos.*, and *Nic.* are all transitional in this sense, and his final work of the mid-century, the chronicle *Brut*, is just slightly below the cut-off for this category. The following passages from *Nic.* are representative of the period.

(32) a. Oez, / seignurs, / ben fait / a dire;
Un tens / fut d'u/ne grant / famine
Que gent / n'avei/ent que / mangier
Ne s'en / savei/ent con/seiller.
Al tens / de la / greinnur / cherté
Quant grein/*nur ven*/t[e] esteit / de blé,
Out seint / Nicho/*las* un / message
Que pres / d'iloc / a un / rivage
Aveit / plusurs / niefs a/riveez
De blé / et de / forment / combleez. (*Nic.* 275–284)

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'Listen, lords, surely it should be told; there was a time of great famine so that people did not have anything to eat, nor did they know how to obtain help. At the time of the greatest expense when there was a very large tax on wheat, St. Nicholas heard a message that very nearby on the coast numerous ships had arrived, filled with wheat and grain.'

b. Getro / lur dit: / "Seignurs, / dez draz
Me do/*nez* de / *seint* Ni/cholaz,
Sis en/porte/*rai* en / ma terre.
Meillurs / reli/ques ne / puis querre.
Si ma /*fem*m[e] a/*ver* les / poeit,
Mult ri/chement / les gar/dereit." (*Nic*. 979–984)

'Getro said to them: "Lords, give me some of the clothes of St. Nicholas, and I will bring them to my country. Better relics I could not look for. If my wife may have them, she will watch over them with great power."'

The passage in (32a) is quite regular, but the one in (32b) shows less adherence to the Iambic Pattern. Together they contain 8 mismatches for 16 lines, giving a weighted complexity of .50, nearly identical to the mean for *Nic.* and *Nos.* taken together (WC = .51 ± .05). As discussed before, Wace's works appear to show a steady decline in iambicity over time, so that passages like (32a) become less frequent in *Brut* and rarer still in *Rou. Brut*, which is known to have been completed in 1155, shows the beginnings of a move toward greater rhythmic variation, which was to become the norm later in the century.

More iambic on average than Wace's early works, but still less so than its counterpart *romans d'antiquité* and *romans byzantins*, *Floire* also exhibits a transitional degree of complexity.

(33) "Tes pe/res fe/me te / donra
del miex / de tres/*tout* son / barnage,
puce/le de / *grant* pa/rentage."
Amors / respont: / "J'oi grant / folie!
Raler? / Et ci / lairas / t'amie?
Dont ne / venis / tu por / li querre?
Sans li / veus a/*ler* an / ta terre!
Dont ne / te mem/bre de / l'autrier,
que del / *graffe* / de ton / graffier
por li / ocir/re te / vausis,
et or / *penses* / de ton / païs!
Et se / tu sans / *li* i / estoies
voelles / u non, / ça re/venroies.
Porroi/es tu / dont sans / li vivre?
Se tel / *cuides*, / dont es / tu yvre." (*Floire* 1616–1630)

'"Your father will give you a wife from among the best of all of his baronage, a girl of great ancestry." Love responded, "I hear a great folly! Return? And you will leave your mistress here? But then didn't you come looking for her? You want to go back to your country without her! So don't you remember that yesterday you wanted to kill yourself for her with the stiletto from your dagger

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sheath, and now you're thinking of your country! And if you are there without her, whether you want to or not, you will return for her. So would you be able to live without her? If you think so, you are drunk [with foolishness]."'

As can be seen, many passages of the transitional texts show a continuous vacillation between iambic and non-iambic lines. With 7 mismatches in 15 lines (WC = .47), (33) is typical of the rhythmic style of *Floire*.

Mixed rhythm texts

Octosyllabic works having on average roughly more than one mismatch for every two lines were apparently first commonly written around 1165 and became the normal style for the influential early *romans bretons* of Crestien de Troyes as well for Thomas of Britain's *Tris.* But although the rhythmic complexity of this era is sometimes equated with the *roman breton* genre, the data show that during this period works of other genres, such as the saint's lives (*Edm.* and *Cath.*), Wace's chronicle (*Rou*), and Adgar's collection of Miracles of the Virgin (*Grac.*), are all of equal or even greater rhythmic complexity. Consider the following verses from Clemence de Barking's *Cath.*:

(34) a. Trestous / les ci/*teins* en / apele
E l'em/pere/re kis / chaele:
'Seignurs, / cumbien / suffe/*rum* nus
Ceste/ *fole* / *ci* en/tre nus?
Male/*ment* a / noz deus / rendum
Le bien / que nus / d[e] els re/cevrum,
Se nus / tost nes / venjum / de li
Ki lur / nun ad / *si* es/charni.
De lui / quidai / grant sens / oïr,
E pur / *ço* nus / fist l'um / venir.
La fa/ble nus / *dit* de / Jhesu
Ki ja/*dis* fud / en croiz / pendu.
Un suen / disci/ple le / traï
Ki as / *mals* Ju/*deus* le / vendi.' (*Cath.* 736–748)

'He called out about it (to) all the citizens and (to) the emperor who rules them: "My lord, how long will we suffer this madwoman among us?[21] We poorly return to the gods the good which we receive from them if we do not soon get revenge on her who has derided their name in this way. I thought I would hear great understanding from her and for this reason we were sent for. She tells us the story of Jesus who was hanged on a cross some time ago. One of his disciples betrayed him, selling him out to the bad Jews."'

b. 'Li fort / empe/reur / Maxence
Mande / comu/nement / saluz.
Si co/m[e] est du/*tez* e / cremuz
Que tuit / *viengent* / a curt / oïr
Sa vo/lenté / e par/furnir.
Se nul / de vus / le cun/tredit
Ja pois / n'avrad / de mort / respit.'

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Ceste / paro/l[e] est / entendue
E sa / mana/ce mult / cremue. (*Cath.* 80–88)

'"The mighty emperor Maxentius sends greetings to all. And frightening and fearsome as he is, [he commands] that everyone come to court to hear his wishes and to fulfill them. If any one of you contradicts him then that person shall have no escape from death." They paid attention to his speech and greatly feared his threat.'

(34a) has 10 mismatches in 13 lines, for a very high weighted complexity value .77, even higher than that for prose; (34b), however, has only 2 mismatches in 8 lines, a very low rate. The value for both passages taken together is 12/22 or .55 (WC/ch = .79), a typical rate for mixed rhythm texts.

One exception to the generalization that mixed rhythm texts emerged only after 1165 appeared at quite an early date. Philippe de Thaün's lapidaries, some of which may have been written as early as 1121, have the same mean rhythmic complexity as do works written roughly 35 years later. Although Philippe could be construed as being in the vanguard of metrical experimentation, other explanations for the prosiness of his work are available. First, Philippe's work was, like many early learned texts, a translation from Latin source material. When learned and polysyllabic Latin source vocabulary is grafted into Old French verse, the result is often a clumsy and unnatural rhythmic style, as in the following passage from the *Bestiary*:

(35) Jaspe / *ruge* / demus/tr[e] amur,
La ver/te, fei, / blanche, / dulçur;
Saphi/res mus/tre ki / fei at
Qu[e] ensem/ble od / *Dé* re/gnerat;
Chalce/*doines*, / ki est / fuïn,
Mustre / qu'od Dé / serum / veisin;
Esma/*ragde* / demus/tre fei
Que li / crestï/*ens* at / en sei;
Sardo/*nix mus*/tre chas/teé
Entre / *sainz* e / humi/lité;
Sardi/*us mus*/tre la / dolur
Qu'el munt / *ourent* /pur Dé / amur,
Criso/*lite* / *vie* / celeste
Qu'avrunt / aprof / *vie* / terestre;
Beriz / demus/tr[e] espur/gement
Que saint / pronun/*cierent* / a gent;
Topa/cius / nus si/gnefie
La co/*rune* / de sain/te vie;
Criso/pas*sus* / *mustre* / luier
Que li / saint u/m[e] avrunt / mult chier;
Ïa/cin*tus* / *mustre* / luur
Que li / saint unt / del cre/atur;
Ama/ti*us* / *mustre*, / ço qui,
Le mar/*tire* / que Deus / sufri. (*Best.* 2981–3004)

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> 'Red jasper indicates love, green (jasper), faith, white, gentleness; sapphires show who has faith that he shall be resurrected together with God; chalcedony, which is the color of fire, shows that we shall be neighbors with God; emeralds represent the faith which the Christian has within himself; sardonyx indicates chastity among saints and humility, sard indicates the suffering which they had in the world for the sake of God's love, peridot, the celestial life which they will have after the earthly life; beryl, the purification which saints pronounce upon people; topaz signifies for us the crown of a saintly life; chrysoprase indicates the reward which saintly men will hold very dear; jacinth indicates the light which the saints have from the Creator; amethyst shows, I think, the martyrdom which God suffered.'

Most critics have rated Philippe's literary abilities as mediocre, despite his technically correct versification. As Legge (1966) observed, Philippe's style is pedantic in the extreme: here he monotonously repeats each stone and its significance in a single couplet, hardly varying at all from his choice of the verb *mustre* or *demustre* 'means'. This repetition gives rise to no fewer than five stress clashes. Moreover, the name of each stone is stated at the very beginning of each couplet, irrespective of whether the result is metrically iambic or not. In *Alph.*, Philippe ends the description of each stone with one among a set of sterotyped and monotonous cadential formulae. Rhythmic considerations seem to be of no real concern in his construction of the line, and so it is hardly surprising that his work, while quite early, is nevertheless lacking in the rhythmic qualities of most contemporaneous verse.

Although the mixed rhythm texts approach the rhythmic properties of mere prose, it is noteworthy that no work examined in this study shows a mean complexity equal to that of prose. Indeed, even if the actual chance value for prose is much lower than the mean value of the sample (say, WC = .65), the probability of any of the texts having a complexity greater than or equal to this value, combined with the likelihood of the prose value being this low ($p < .225$), is not statistically significant ($p < .05$). We can therefore safely conclude that all poets writing in octosyllabics maintain a greater than chance adherence to the Iambic Pattern. For this reason, I propose here that, although mismatches to the Iambic Pattern appear with varying frequency, nevertheless the Iambic Pattern must be considered the abstract metrical structure of octosyllabic verse.

DIFFERENTIATION OF RHYTHMIC STYLES

The value of mean mismatches per line reveals something about a poet's rhythmic style, but in many respects the complexity value is a fairly imprecise measure because it says nothing about where in the line the mismatches occur. Two other values give a better indication of the location of mismatches: first, the ratio of mismatches in position 3 versus position 5 in the line (hereafter the 3/5 value) and, second, the percentage of lines containing clashes. The findings for these values were introduced in Table 2.

3/5 ratio

The mean value for 3/5 for all texts is 1.34, with a standard deviation of .39, showing that in general mismatches appear in the second foot of the line a bit

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more frequently than in the third foot.[22] Some samples, however, are significantly deviant. *Bren.*, with a 3/5 value of 3.23, is a remarkable 4.82 standard deviations above the mean. This pattern is immediately explicable by the fact that Benedeit adheres very closely to a requirement that the end of the second foot must coincide with a word boundary. More precisely, consider the following list of situations in which a mismatch may occur at position 5. In these schemata 5 designates the stressed syllable in position 5, while x designates an adjacent unstressed syllable; # is as usual a word boundary.

(36) a. . . . x 5 x . . .
b. . . . x 5 # x . . .
c. . . . x # 5 x . . .
d. . . . x # 5 # x . . .

Of these four possibilities, only (36c) and (36d) are available to Benedeit.

(37) a. Quar la / *terre* / *tute* / muveit
'For the whole earth was moving' (*Bren.* 455)
b. Pur quei / icil / *crement* / la mort
'For which reason they fear death' (*Bren.* 910)

(38) a. En sun / *arbre* / *dun* de/valat
'To its tree from which it had flown down' (*Bren.* 554)
b. Cil res/*punent* / *mult* vo/lunters
'He answered most willingly' (*Bren.* 961)

Both (36a) and (36b) are impossible for Benedeit, since there is no word boundary between positions 4 and 5. This leaves only half of the situations for a mismatch at position 5 in Benedeit's verse, compared with meters in which the caesura is not observed consistently. Dividing the 3/5 value for *Bren.* by 2 gives 1.62, a rough indication of Benedeit's preference for mismatches at position 3 relative to position 5 once the effects of the caesura are factored in. This value is comparable to many of the early texts, such as *Gorm.* (1.63), *Marg.* (1.47), *Est.* and *FrLap.* (1.56), and *Pir.* (1.76).

A high 3/5 ratio is also seen in *Theb.*, which does not exhibit an obligatory caesura after the second foot. With a 3/5 ratio of 2.42, *Theb.* is 2.79 standard deviations above the mean. Since only about 2 out of 5 lines in *Theb.* are noniambic at all, a fairly long passage, as in (39), is required to give a sense of the predominance of mismatches at position 3.

(39) Bien ont / leur roi / asse/üré,
mes tra/*ï* l'ont / et mal / mené,
car li / *enfes* / qui en / haut pent
avra / secours / prochai/nement.
Par i/*cel* bois / vet che/vauchant,
si com / Fortu/ne vet / menant,
li rois / de Pho/ces la / cité
qui a / l'enfant / pendant / trové.

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Despen/*du* ot / le filz / le roi,
danz Po/lybus / l'empor/t[e] o soi.
Norrir / le fet / si l'a / tant chier
com s'il / eüst / de sa / moullier.
Edyp/*pus*, quant / il ot / *quinz[e] anz*,
preuz fu / et genz, / sages / et granz.
Li rois / le tint / en tel / chierté
com s'il / fust ses / filz de / verté;
mout l'a / debon/*naire* / trouvé,
son dru / en fet / et son / privé;
ne croit / nul mal / que on / l'en die,
car tuit / li au/tr[e] en ont / envie.
Li rois, / pour ce / que tant / l'a chier,
adou/*bé* l'a / a che/valier;
envi/[e] en ont / si com/paingnon,
a fol / le tien/nent et / gaingnon.
Tuit li / serjant / de la / meson
le le/*disent* / de leur / reson;
plus de / cent foiz / l'ont a/pelé
filz a / putain, / bastart / prové:
"D'autre / *vile*, / d'autre / cité,
vous trou/*va* l'en / u bois / gité.
Ici / n'est pas / *vostre* / regnez,
ainz fu/stes en / *autre* / lieu nez." (*Theb.* 125–156)

'They reassured the king, but they have betrayed and misled him, because the child who hangs on high shall soon have help. Through this wood came riding, as Fortune led him, the king of the city of Phocis, who found the hanging infant. Taking down the son of the king, Lord Polybus carried him away. He had him brought up and held him as dear as if he had had him by his own wife. Oedipus, when he was fifteen years old, was noble and well-born, wise and tall. The king held him in as much esteem as if he were in fact his son; he found him to be so high-born that he made him his friend and his intimate; he believed nothing bad that one might say about him, for all the others were envious of him. The king, because he held him so dear, equipped him as a knight; his companions were jealous, and they considered him to be mean and nasty. All the servants of the house would abuse him with their language; more than a hundred times they called him the son of a whore, an undeniable bastard: "From another town, from another city, you were found thrown out in a wood. This is not your kingdom, rather you were born in another place."'

Here, 9 mismatches occur in the second foot, whereas only 3 occur in the third foot (3/5 = 3.00, which is 1.49 standard deviations above the sample mean of 2.42). It is also noteworthy that a fairly high 3/5 ratio is seen in *Pir.* (1.76, or 1.15 standard deviations above the mean), as well as in *Eneas* (1.68, or .93 standard deviations above the mean). These three works are perhaps the three oldest instances of the genre of *roman d'antiquité*. Conversely, all instances of *roman breton* studied here show a 3/5 ratio below the mean. The 3/5 values for Crestien de Troyes's, *Phil.*, *Cres1*, and *Cres2* are 1.16, 1.15, and .94, respectively (.47, .50, and 1.03 standard deviations below the mean).

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A reasonable conclusion is that, in general, the greater rhythmic complexity shown in the later 12th century texts was accompanied by a tendency to locate mismatches evenly within the line rather than predominantly in the first half of the line. These findings are especially surprising given the frequent claim in the literature that early octosyllabics show a preference for stressing the fourth syllable in particular. For instance, as Waters (1928:xl–xli) asserted, "[t]wo tendencies, sometimes mutually conflicting, governed the construction of the octosyllabic line in the earliest French and Provençal poetry: (a) the tendency to place an ictus on the fourth syllable, and (b) the tendency to divide the line into two equal portions (or hemistichs)." Waters observed that, on his count of the 1,840 lines of *Bren.*, 1,330 (or 72%) have an ictus at position 4. Similarly, Jenkins, Manly, Pope, and Wright (1943: lxxviii), in the preface to their edition of the late Anglo-Norman play *La seinte resurreccion*, remarked that "[t]he older type of line with stressed fourth syllable still preponderates." For the Penrose manuscript of this work, they counted 53 out of the first 70 metrically correct lines with an ictus at position 4; of the last 70 such lines 44 (63%) have a fourth-syllable ictus.

Nevertheless, the data analyzed here suggest that, comparatively speaking, metrical regularity in the third and fourth foot (the second hemistich) and metrical variety in the first and second foot (first hemistich) is typical of earlier octosyllabic texts, with the important exception of the very earliest works, the Clermont poems. Aside from these, the earliest work to show a significant departure from this model is *Edm.*, which shows a marked preference for second-hemistich variation.

Several reasons may be offered for why previous scholars isolated what appears to be a particular association between the fourth syllable and an ictus. First, a stress maximum at position 4 is consistent with the Iambic Pattern, while a stress maximum at positions 3 or 5 (and not, therefore, at position 4) produces a mismatch with the Iambic Pattern. In addition, because stress maxima do not by definition occur in position 1, a strong stress may appear in position 1 (along with lack of stress in position 2) without mismatch to the Iambic Pattern. Since earlier texts show greater adherence to the Iambic Pattern, the only consistent surface effect necessarily exhibited in the first hemistich of such texts is a preponderance of stresses in position 4 relative to other locations. But in fact the phenomenon is not particular to position 4. Position 6 is likewise privileged, and, as the data from 3/5 ratios show, position 6 is less likely than position 4 to be stressless and to follow a stressed syllable.[23]

Stress clash value

Data from the prevalence of stress clashes provides an additional parameter of rhythmic style. Clashes are rare in the earliest texts, the Clermont poems and *Alex.*[24] Later works, such as the *romans bretons* and, in particular, *Phil.* and *Livre*, exhibit a higher tolerance of adjacent stresses than do earlier works, on average.

A particularly deviant rhythmic style can be seen in Guillaume de Saint-Pair's *Mich.* Both the 3/5 ratio (2.55) and the clash value (9.4%) for *Mich.* are the highest observed for all the samples (excluding *Bren.*, which, for reasons reviewed earlier, has an inflated 3/5 value). These factors together give a unique

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style in which the first hemistich shows rhythmic variation quite frequently and other mismatches tend to arise as clashes, particularly at positions 7 and 8.

(40) Des que / cil ou/rent tot / conté,
En-es/-le-pas / a com/mandé
A dous / *moisnes* / de la / meison,
De molt / *grande* / reli/gion,
Qu[e] a la / *dame* / *augent* / parler.
J'eis sei / tres bien / andeus / nummer:
Dan Hi/deman / e dan / Fromont,
Ambe/*dui frei*/re char/*nel sunt.*
Li moi/ne sunt / aval / venu
Dreit a / l'ostel, / la ou / el fu;
Sa con/tenan/c[e] unt es/guardée,
E puis / si l'unt / arai/sonée,
Que, se / en sei / pechié / saveit
Nul qui / *unques* / crimi/*nal seit,*
Sil re/gehis/s[e] a / un pro/vaire,
Puis mon/tera / trestot / en eirre
A l'ig/*lise*, / si que / l'entrée
Ne li / sera / ja puis / veiée.
Encon/tre ceu / respon/*du a*
Que pie/*chei* nul, / certes, / fait n'a
De tel / manie/re cum / oieit,
Ne nul /*altre* / *qui* me/*nor seit,*
Par quei / li dei/[e] estre / creuée
Cest[e] hon/te ne / ave/nuée (*Mich.* 3074–3098)

'When they had told him everything he immediately asked two monks of the house who were greatly religious if they might go speak with the lady. I (too?) can indeed name both of them very well, the honorable Hideman and the honorable Fromont, both brothers of the same family. The monks came down directly to the dwelling where she was; they saw her appearance, and then they bade her if she knew any sin within her that was ever criminal, to confess it to a priest, then climb up in all haste to the church, so that the entrance will not be forbidden to her anymore. She answered them that she had in no way done any sin like what she had heard, nor any other which was lesser for which this shame should have arisen or occurred.'

The passage in (40) contains 8 mismatches at position 3 as opposed to a mere 2 at position 5. Moreover, there are four instances of clash, one at 34 (*ambedui frere*) and the three at 78. The avoidance of mismatches at position 5, while not categorical, is nevertheless strongly characteristic of Guillaume's rhythmic style. In the 500 lines sampled no instances of the pattern *x 5 x* in (36a) or of 56-clash were found at all, but 18 instances of 78-clash occurred.

SPECIFIC AUTHORS

In this section, I provide more specific data for individual poets and works, while touching briefly on certain controversies of authorship.

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TABLE 3. *Subsections of* Gormont et Isembart

Section	Size	I	WC/ch	3/5	Deviation	Clash
Gormont (laisses 1–13)	396	83.8	.264±.064	1.48	+.35	3.5
Isembart (laisses 14–23)	210	79.0	.373±.109	1.87	+1.35	7.5
Total	610	82.1	.302±.057	1.63	+.73	4.9

Gormont et Isembart

As its title suggests, *Gormont et Isembart* is concerned with the exploits of two pagan rebels. The first 13 laisses of the fragment remaining to us depict Gormont's combats with French heroes, and the remaining 10 laisses depict those of Isembart. Numerous scholars have detected a stylistic difference between these sections; in particular the Gormont section is known to be more formulaic (see Lonigan, 1976, for details). The rhythmic properties of the two sections are also different, as can be seen in Table 3.

The Gormont section, with WC/ch = .26, deviates to about the same degree from the Iambic Pattern as the early Clermont poems. Likewise the rate of clash, a mere 3.5%, is also comparable to these early works. The Isembart section, on the other hand, is more complex along both dimensions; its WC/ch value of .37 is roughly halfway between that of the Clermont poems and the later highly iambic works such as *Pir.* (at .418), *Est.* (.488), or *Erac.* (.447), and its clash value at 7.5 is more than double that of the Gormont section. These data are important for two reasons. First, they support the division of *Gorm.* into layers: one a (probably) more archaic, iambically more regular verse, and the other a more rhythmically flexible and less formulaic style. Second, the complexity value of the Isembart section fills in a small gap in the gradual cline of increasing rhythmic complexity seen prior to 1150. Since the number of texts from this period is unfortunately so small, such indications, while hardly conclusive, are the only evidence available for tracing this change during its critical incipient period.

Clemence de Barking

As mentioned earlier, the two saint's lives, *Edw.* and *Cath.*, were both written by nuns at the abbey of Barking in Essex. The latter work is signed by a certain Clemence, but in the former work the poet, professing modesty, refuses to identify herself by name. Naturally the question has arisen whether the Nun of Barking, author of *Edw.*, is indeed also Clemence (MacBain, 1964). The comparison of the rhythmic properties of both works in Table 4 is certainly consistent with identifying Clemence as the author of *Edw.*, although the data of course do not prove the connection. The complexity values of both samples are nearly identical. The difference in 3/5 values is not likely to be informative; the rise in the rate of clash is consistent with the changes seen in the evolution of both Wace's and Gautier d'Arras's styles over time and may reflect a similar development in Clemence.

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TABLE 4. *Saints' lives from the Abbey of Barking*

Work	Date	Size	I	WC/ch	3/5	Deviation	Clash
Edw.	1170	750	55.7	.801 ± .08	0.88	−1.19	4.9
Cath.	1176	500	56.8	.790 ± .10	1.15	−0.50	6.0

TABLE 5. *Anglo-Norman lapidaries*

Work	Date	Size	I	WC/ch	3/5	Deviation	Clash
Apoc.	1132	282	54.3	.736 ± .108	0.93	−1.06	4.6
Best.	1134	250	54.0	.795 ± .131	1.21	−0.34	6.4
Alph.	1142	750	58.7	.787 ± .085	1.04	−0.78	5.7
Philippe total	—	1282	56.8	.778 ± .063	1.05	−0.75	5.6
FrLap.	1145	500	61.2	.757 ± .109	1.56	+0.55	7.8

The Anglo-Norman lapidaries

Table 5 shows the data gathered for the four Anglo-Norman lapidaries of the early to mid-12th century. Of these, only the lapidary portion of the *Bestiary* is known for certain to be the work of Philippe de Thaün.[25] While the *Apocalyptic* lapidary is usually attributed to Philippe, the *Alphabetic* lapidary is less securely ascribed to him. The *First French Version* of the lapidary of Marbode, on the other hand, is so distinct in style from these other works that it has been uncontroversially ascribed to an anonymous author (Studer & Evans, 1924).

The data analyzed here clearly separate the rhythmic style of *FrLap.* from the other three works, which together form the aggregate sample *PhTh.* in this study. The 3/5 ratio for *FrLap.* is considerably higher than that of Philippe's works: at 1.56 it stands more than a half of a standard deviation above the mean, while Philippe's works taken together fall .75 standard deviations below the mean. It is noteworthy that the relatively high 3/5 value for *FrLap.* is similar to that of most contemporaneous texts. The lower 3/5 value seen in Philippe's work is characteristic of late 12th-century style and is in keeping with Philippe's departure from the contemporary norm. Similarly, the stress clash values for the texts are also divergent: *FrLap.* has a rather high value of 7.8, whereas Philippe's works are each from 1 to 3 percentage points lower.

With respect to the three works ascribed to Philippe, the data do not warrant as clear a conclusion, but they are certainly consistent with ascribing *Alph.* to Philippe. In particular, along the dimensions of complexity, 3/5, and clash, *Alph.* occupies a point intermediate between *Apoc.* and *Best.* Only in iambicity is *Alph.* an extreme among the three works. To the extent that the attribution of *Apoc.* to Philippe is accepted, we may conclude that parameters of rhythmic style do not in themselves point toward a distinct author for *Alph.*

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TABLE 6. *Works by or in the style of Crestien de Troyes*

Work	Date	Size	I	WC/ch	3/5	Deviation	Clash
Guillaume	1170	1000	56.7	.772 ± .064	1.06	−0.73	6.6
Erec	1170	500	55.2	.786 ± .094	1.24	−0.27	7.0
Philomena	1172	500	57.0	.818 ± .105	1.16	−0.47	9.2
Cligés	1176	500	55.0	.842 ± .105	1.07	−0.70	7.6
Lancelot	1178	1000	57.5	.757 ± .067	0.98	−0.93	5.6
Yvain	1179	1000	59.0	.715 ± .064	0.90	−1.13	6.5
Cres1	—	1000	56.3	.814 ± .070	1.15	−0.50	7.3
Cres2	—	2000	58.3	.736 ± .046	0.94	−1.03	6.1
Crestien total	—	3500	57.2	.770 ± .036	1.03	−0.81	6.9
Godefroy	1179	500	54.4	.810 ± .096	1.23	−0.28	6.8

Crestien de Troyes

A total of five works known to be Crestien's are studied here: *Phil.*, *Erec*, *Clig.*, *Lanc.*, and *Yvain*. In addition, data was obtained on Godefroy de Lagny's completion of *Lancelot* (*Godf.*), as well as the *roman d'aventures*, *Guil.*, which some scholars attribute to Crestien de Troyes and others to a skillful imitator.[26] Holden (1988), in his recent edition of *Guil.*, concluded that the work is not Crestien's, and Legge (1966:141) vigorously concurred, writing, "the fact that he [the author] twice names himself 'Crestiiens' in the prologue, and a few resemblances in vocabulary, particularly in rhyme-words, are not necessarily sufficient to outweigh the difficulty in believing anything so dull in composition and so flat in style could possibly have come from a master hand." It will be useful then to compare these works individually.

Table 6 summarizes the data (all dates of composition are, of course, approximate). Unfortunately, these data are insufficient to allow rhythmic style to be used as a determinant of authorship. The WC/ch values for the works known to be by Crestien range from a low of .72 for *Yvain* to a high of .84 for *Clig.*, and *Guil.* at .77 has a complexity squarely within this range. Indeed, the mean value for all 3,500 sampled lines of Crestien's work is .77, very close indeed to the mean value for *Guil.* Values for clash are likewise inconclusive. Moreover, a review of Table 1 shows that many other poets of the same period were equally capable of writing verse with comparable complexity values, including Godefroy de Lagny, whose completion of *Lancelot* is clearly written in imitation of Crestien's style. With respect to rhythmic style, the poet of *Guil.* is at least a clever enough imitator of Crestien to make these properties uninformative.

Within Crestien's works, two trends can be detected in the data. First, the latest work sampled, *Yvain*, is the most iambic, reversing the trend seen in Wace and Gautier d'Arras, according to which works composed later in the poet's career show less iambicity.[27] Likewise, *Lanc.*, presumably the second-to-last in date of composition of Crestien's works sampled here, is the second most iambic.[28] While it must be acknowledged that these variations might be simply the result of sam-

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pling bias, it is noteworthy that a second trend is also visible in the data. The values for 3/5 show a steady decline from *Erec* at 1.24 to *Yvain* at .90.

An analysis of these results is perhaps premature, given the range of error made unavoidable by the present method. Nevertheless, I offer the following conjectures. It is usually inferred that Crestien abandoned work on *Lancelot*, leaving the remainder to Godefroy, in order to devote his full attention to *Yvain*. Moreover, critics have frequently surmised that the illicit love theme in *Lancelot*, which was chosen by Crestien's patron Marie de Champagne, was not to Crestien's liking, since Crestien's other works celebrate marriage and the triumph of rational love over the destructive forces of passion. *Yvain* then would appear to be Crestien's return to an art entirely of his own design and a carefully crafted work that required his full poetic attention. The very low value for 3/5 indicates, I believe, Crestien's mature rhythmic style, in which rhythmic variety is spread evenly through the line, where each line is conceived as a whole undivided by structural caesura. The higher iambicity of *Yvain* relative to Crestien's earlier works, if indeed not an artifact of sampling, may also reflect a mellowing of his rhythmic style. Critics have generally agreed that *Yvain* is Crestien's greatest work, and its popularity is no doubt partly due to the evenness and beauty of its versification. Approximately 3 out of 5 lines are iambic, and no more than 2 out of 5 non-iambic lines are interspersed to give rhythmic variety.

(41) Li un / seisi/rent mon / cheval,
Que li / *buens* va/vassors / tenoit;
Et je / *vi* que / vers moi / venoit
Une / puce/le be/l[e] et jante.
An li / esgar/*der* mis / m'antante:
Ele / fu lon/gu[e] et gres/l[e] et droite.
De moi / desar/*mer* fu / adroite;
Qu'ele / le fist / et bien / et bel.
Puis m'a/fubla / un cort / mantel,
Ver d'es/carla/te pe/onace,
Et tuit / nos guer/*pirent* / la place,
Que a/vuec moi / ne a/vuec li
Ne re/*mest* nus, / ce m'a/beli;
Que plus / n'i que/*roie* / veoir.
Et e/le me / mena / seoir
El plus / bel pra/elet / del monde,
Clos de / bas mur / a la / reonde. (*Yvain* 224–240)

'Some [of the retainers] seized my horse, which the good vavasor had taken; and I saw that a pretty and graceful girl was coming towards me. I gave my attention to looking at her: she was tall and slender and erect. She was adroit at removing my armor, which she did well and beautifully. Then she dressed me in a short cloak, a miniver fur of fine peacock-blue woollen cloth, and everyone left us, so that with me and with her there remained only us, which pleased me, since I didn't want to see anything else. And she led me away to sit in the most beautiful lawn in the world, enclosed all around by a low wall.'

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Although aesthetic judgments are not our central concern here, it would not be unreasonable to conclude that the rhythmic style that Crestien adopted for *Yvain* served as an influential model for future poets. Moreover, it is most likely not an accident that the poet whose rhythmic style most closely approximates that of *Yvain* is Marie de France, the only poet of the period to receive (modern) critical acclaim approaching Crestien's (Fox, 1974:167).[29] Neither Marie nor Crestien in *Yvain* show as extreme a departure from the Iambic Pattern as do other poets of the period, and the work of neither is especially rich in stress clashes: both are transitional in the sense defined earlier. The smooth and balanced motion of this verse epitomizes the poetic style of the late 12th century and set a standard of excellence for French poetry for the next four hundred years.

CONCLUSIONS

The conclusions from this study include both empirical observations and points of theoretical interest. The data analyzed here establish that during the period 1000–1180 Old French octosyllabic texts exhibited a gradual change in their deviation from the Iambic Pattern along several dimensions, the most important being the mean number of mismatches per line verse. While no text at any period conforms absolutely to the Iambic Pattern in the sense of classical English verse (Shakespeare, Milton, or even Shelley), departures from this formal scheme are fairly limited in the earliest works, the Clermont poems, the *Alexander* fragment, and the first section of *Gormont et Isembart*. Mid-12th century texts such as the *Estoire des Engleis*, the *Roman de Thèbes*, and the life of *St. Edmund* conform moderately to the Iambic Pattern, but the tendency, beginning with such Anglo-Norman works as the *Voyage of St. Brendan*, the Anglo-Norman lapidaries, Samson de Nantuil's *Proverbes*, and the early hagiographic works of Wace show a greater complexity of rhythm. After 1165, numerous texts in all genres show a high deviation from the Iambic Pattern. The later works of Crestien de Troyes, such as *Yvain*, as well as the *Lais* of Marie de France, though more iambic than many late 12th century texts, exemplify the mean end state of the gradual change and are rightly esteemed as epitomes of the new verse style. Nevertheless, some fairly late works, such as Gautier d'Arras's *Eracle* and *Ille et Galeron* and Guillaume de Saint-Pair's *Roman du Mont-Saint-Michel*, are markedly conservative in rhythmic style.

Methodologically, I have emphasized the importance of establishing the rhythm of ordinary prose as a baseline against which to measure a poet's intentional manipulation of rhythmic effects. The data show that all texts exhibit a rhythmic style closer to the Iambic Pattern than does the prose of Villehardouin. These findings support the view that the Iambic Pattern, although not an absolute condition on well-formedness, still plays some role in characterizing the grammar of meter used by all poets of the period. In other words, I reject the null hypothesis that Old French octosyllabic verse is well-formed provided that each line has eight metrical syllables. The practices of all poets in the period considered indi-

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cate that internal rhythmic effects above and beyond this bare requirement are essential characteristics of the form.

Aside from a gradual change in rhythmic complexity, the data also establish a correlation of complexity with genre. *Romans d'antiquité* and *romans byzantins* in particular are significantly more iambic than contemporaneous works in other genres, whereas the opposite is true of both hagiographic texts and *romans bretons*. However, although the *roman breton* is sometimes equated with a more complex rhythmic style, the data show that works of other genres are equally complex in the late 12th century.

I have also presented findings about locations of mismatches in the line: in particular, the preference for variation in the first hemistich shown in nearly all works dating from 1100 to 1150, such as the *Roman de Thèbes* and *Piramus et Tisbé*. This tendency appears to be connected – in the case of Benedeit demonstrably so – with the frequent (or obligatory) presence of a caesura between the first and second hemistichs. By the late 12th century such a tendency declines, so that mismatches are evenly dispersed in the line in, for example, Crestien de Troyes's verse.

The status of adjacent stresses in iambic verse is ambiguous within the English verse tradition; the range of clashes permitted varies from poet to poet. In Old French, early texts show few clashes whereas later texts allow them more frequently. The *Roman du Mont-Saint-Michel* is markedly deviant, admitting a high proportion of clashing lines, a moderately iambic style throughout, and an extremely low rate of third-foot mismatches. The gradual rise in complexity over the course of the 12th century has a parallel in the stylistic evolution of individual poets such as Wace, whose earliest works are more iambic than the later chronicles, in particular *Rou*. Gautier d'Arras's early work, *Eracle*, is likewise highly iambic, whereas his later work, *Ille et Galeron*, is less so. Crestien de Troyes, however, reverses this pattern: the samples studied present a steady increase over time in both iambicity as well as in an even spreading of mismatches through the line. If these findings are not the result of sampling bias, they may indicate a progressive mellowing of Crestien's rhythmic style.

More generally, this study demonstrates that changes in metrical practices resemble other varieties of linguistic change in their trajectories, and that they can be studied using the same methods.[30] On the one hand this should come as no surprise: a principal tenet of Generative Metrics is that poetic productions are controlled by grammars whose rules and primitive elements are limited by universal cognitive principles. Naturally, these grammars may change over time like any other sort of grammar. On the other hand, metrical grammars are "unnatural," artificial in the sense that they are subject to at least some degree of conscious creative manipulation on the part of the poet. Nevertheless, the extent to which metrical and poetic styles are accepted as a norm within a culture is not wholly unconnected with the phonological and syntactic properties of the language spoken in that culture. We should therefore expect that purely linguistic changes may have a significant relationship with – indeed might even cause – a change in metrical grammar. One would like to determine, for example, whether the loss of

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iambicity in Old French meter is connected with the gradual erosion of word-level ictus in Old French and with its replacement by a prosodic organization based on the phrase, as seen in Modern French (Pope, 1934).[31] Similarly, a change in prosodic organization has been implicated in the loss of syntactic verb-second in Old French (Adams, 1987a:160ff.; see also Adams, 1987b, 1987c; Vance, 1989). Whether these phenomena are indeed part of one general change is a question for future study.

In sum, I hope to have demonstrated the utility of Generative Metrics as a tool for the analysis of rhythmic style, even under conditions in which well-formedness conditions are not absolute. This style of reasoning has an important parallel in the study of natural languages. Where early work in generative grammar sought to characterize a grammar as a device for generating all and only the well-formed expressions of that language, a more contemporary view is that the generative device assigns properties to structural descriptions (of expressions), where ill-formedness and well-formedness are simply two among many properties of a structural description. Likewise, the grammar of iambic meter does not merely divide lines into those that are metrical and those that are not, but rather determines the set of potential structural descriptions for a given line of verse, including the metrical complexity of each such description. What I have called a rhythmic style is then a characterization of both the range of and degree of departures from absolute adherence to well-formedness that a particular poet's verse exhibits. Any hypothesized grammar of meter, like a grammar of natural language in general, must then be evaluated not only in terms of whether it classifies expressions as permitted or not permitted, but also in terms of how well the structural descriptions it entails explain the data obtained from the study of language change.

NOTES

1. See, however, Roubaud (1971), Lusson and Roubaud (1974), Roubaud (1978), and Verluyten (1982) for examples of generative approaches to Occitan and modern French verse.

2. The literature on the problem of rhythm in Gregorian chant is immense (Rayburn, 1981), but see Apel (1958:126–132) for a brief but balanced overview of the debate. Lote adopted the so-called equalist interpretation of Gregorian chant rhythm, according to which all syllables save those at line end are given equal duration; on this basis he concluded that musical rhythm can provide no evidence for accentual organization in Old French verse. Indeed, Gautier (1878:291) early on proposed that the performance of liturgical verse in equalist rhythm may have in fact contributed to the erosion of rhythmic regularity in Old French verse. If the authors of the earliest vernacular oral poetry sought to adopt liturgical Latin meters but were acquainted with these meters only by hearing them sung in equalist rhythm, and if they could not have discerned by other means where the word stresses were located (inasmuch as the texts were in classical Latin, a language known only by the highly educated), then they might easily have concluded that such meters required merely a specific number of syllables per line.

3. Most contemporary scholars of both Gregorian chant and of troubadour lyric emphasize that the rhythmic shape of the melodies most likely depended on the prosodic properties of the texts accompanying the melodies (Aubrey, 1996:240; Stevens, 1986:416–423). If so, then there would of course be no need to indicate in the melodic notation such properties of rhythm as would be enforced by the texts themselves.

4. Suchier (1952:27) argued for alternating rhythm in modern French verse as well. He also acknowledged that anapestic rhythm may occur in the 12-syllable alexandrine and in the second (6-syllable) hemistich of the decasyllable, but always less frequently than binary rhythm.

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5. For English texts, the following abbreviations are used: Keats, "Lamia" (L); Shelley, "Ode to the West Wind" (OWW), "The Triumph of Life" (Tri.), "Hymn to Mercury" (Merc.), "Alastor" (Al.), "The Question" (Ques.), *The Cenci* (Cen.), "Julian and Maddalo" (Jul.); Milton, *Paradise Lost* (PL), *Paradise Regained* (PR); Shakespeare, *Hamlet* (Ham.), *Antony and Cleopatra* (Ant.), *Othello* (Oth.), *Romeo and Juliet* (RJ), and *Richard II* (R2).

6. In English, in fact, the conditions are a bit more complex. First, a sequence of a vowel plus a sonorant or /v/ and another vowel may be scanned as a single syllable, as in the frequent resolution of *heaven* as a single metrical position. Second, a word-final vowel may sometimes coalesce with a following word-initial syllable, giving elision. This possibility is quite frequent, of course, in Old French. In the examples cited here elided vowels are enclosed in brackets.

7. Kiparsky (1977) showed that in fact different English poets adopt different exemptions from that in (11). All poets admit phrase- or verse-initial inversion, but Milton, for example, also permits a lexical stress in a W position provided that the word containing this stress is also foot-initial (mismatches italicized):

(i) a. Burned af/ter them / to the / *bottom*/less pit (PR 6.866)
b. By the / *waters* / of Life / where'er / they sat (PL 11.79)

8. Kiparsky (1977) observed that Shakespeare permits violations of the correspondence rule when the left edge of a word coincides with a phrase boundary, as in (i).

(i) a. Upon / the slime / and ooze / *scatters* / his grain (Ant. 2.7.22)
b. Monta/no and / myself / *being* / in speech (Oth. 2.3.225)

Outside of such situations, violations of the correspondence rule are usually claimed not to occur in Shakespeare's verse; apparent instances are frequently attributed to a different location of stress in various words in early Modern English (Kökeritz, 1953). However, many (although not all) such putative stress retractions appear in Shakespeare only under conditions of stress clash. For example, *absurd*, *assure*, *austere*, *cashier*, *compel*, *conceal*, *condemn*, *confess*, *confine*, *confirm*, *congeal*, *consign*, *contrive*, *corrupt*, *create* are the first fifteen words that Kökeritz claimed have, at least sometimes, initial accent in Shakespeare's verse. But all instances of putative retraction for these words are also instances of clash. What is more suspicious still, Kökeritz inferred a stress shift in some cases even where it is not justified on Kiparsky's assumptions, as in (ii) and (iii).

(ii) Nor with / thy sweets / *comfort* / his rav/enous sense (R2 3.2.13)
(iii) By leav/ing earth? / *Comfort* / me, coun/sel me! (RJ 3.5.208)

Here *comfort* does not need to show stress on the second syllable, given Kiparsky's observations.

9. Complications do arise for Anglo-Norman verse, which is frequently incorrect by continental standards in virtue of showing too few or too many syllables (Legge, 1950, 1966; Vising, 1923). A discussion of these issues is beyond the scope of the present study.

10. It should be noted that, in using the definition of stressed syllables adopted here, neither a 12-clash nor a 67-clash can occur at all. A 12-clash cannot arise since a monosyllabic word counts as stressed only if preceded and followed by stressless syllables. Thus position 1 cannot by definition contain a syllable whose stress might contribute to a 12-clash. Now consider the 67-clash. There are two cases. First, suppose that position 7 contains a monosyllabic word. Since position 8 must be stressed in an octosyllabic line, a monosyllabic word in position 7 does not define a stress maximum, and so no clash is possible. Second, suppose then that position 7 contains a stressed syllable of a polysyllabic word. Since position 8 must be stressed, there must be a word boundary between positions 7 and 8 (since we presume that no word has two primary stresses). Therefore, since position 7 contains a syllable in a polysyllabic word, it follows that the syllable in position 6 is in the same word as the syllable in position 7. Yet by hypothesis, the syllable in position 6 must also be stressed for a 67-clash to arise. By parity of reasoning, the syllables in positions 6 and 7 must be in separate words. Therefore a word boundary precedes and follows position 7. Thus the hypothesis that position 7 contains a syllable in a polysyllabic word leads to contradiction.

11. Although not as prominent a juncture as the end of the line of verse, the boundary between the second and third foot (the midpoint of the line) is often the location of a caesura and thus has been

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widely hypothesized to be an important structural juncture. As such, it could, like line-medial syntactic junctures (cf. (8b)), contribute to licensing exemptions from the normal iambic pattern of the line. Space does not permit a full discussion here of all the issues relating to the controversy surrounding the placement of caesura (if any) in continental versus Anglo-Norman verse. See, in particular, Tobler (1894), Melchior (1909), Baker (1912, 1916), and Waters (1928); for a more general overview of the Anglo-Norman situation, see Legge (1950, 1966).

12. Some remarks need to be made about elision within the line. I assume that word-final schwa may be elided before a vowel-initial word under usual circumstances in Old French verse. In the segmentation of pseudo-verses, I attempted in each case to read the prose with elision. If a reading with elision yielded an eight-(or nine-) syllable string with initial word boundary, then this reading was employed. If, however, elision produced a string where the initial syllable did not coincide with a word boundary, then an alternative reading with hiatus was considered. It should also be noted that passages consisting of lists of names were excluded from the study as being unrepresentative of typical prose.

13. Of course, many of the obtained pseudo-verses are aesthetically unsatisfactory, but the point of the experiment was simply to assess the prevalence of iambic rhythm in Old French.

14. The ranges shown in the data are confidence intervals ($p < .05$): that is, the range of values that are predicted with 95% probability to be the actual value observed in the work as a whole.

15. Quite similar although not identical assumptions were made by Le Mée (1978:44–46). I differ from Le Mée in not treating possessive pronouns and the words *en*, *car*, *quant*, *cum*, *or*, and *qui* as unstressable. But since the results of this study depend largely on the comparative analysis of texts, what is essential is that the same assumptions are applied equally to all texts. While the number of unstressable clitic forms tends to be fewer in the very earliest texts, the only effect this might in principle have on the results of this study would be to make such earlier texts less iambic, inasmuch as a greater proportion of positions might then contribute mismatches. Since the results to be reviewed strongly indicate exactly the opposite trend in iambicity, the comparative frequency of unstressable clitic forms in the texts appears to have no important consequences.

16. In the case of unpunctuated editions, I have had to infer plausible locations for such breaks. Moreover, I have ignored the commas before restrictive relative clauses that have been inserted in some editions in conformity with German punctuation conventions.

17. As can be verified in the Appendix, each sample, where possible, consists of one or more fragments of 125 to 250 contiguous lines; the first line in each such set of lines, where possible, was chosen randomly subject to the condition that no overlapping fragments were examined. In the case of works naturally divisible into subparts (collections of stories, *lais*, or miracles), the subparts from which sample fragments were drawn were also chosen at random. Some texts contain fewer than 250 lines in all. In such cases, the entire text was taken as the sample.

18. Philippe's *Bestiary*, as it is currently known, actually consists of three parts: a bestiary proper, a section treating birds, and a short celestial lapidary from which this passage was drawn. The relationship of the celestial lapidary here and the other lapidaries possibly attributed to Philippe is unsettled (Legge, 1963:23; Vising, 1923:50).

19. See note 14.

20. These lines are the following:

(i) Dit Sal/omon / al pri/*mier pas* (1)
'Salomon says in the first passage [of his book]'
Toylle / *s'en* o/tïo/sitas! (6)
'May idleness go away!'
En tal / *forma* /fud naz / lo reys (54)
'From birth the king was of such type'
Tal re/*gard* fay / cum leu / qu[i] est preys. (59)
'He makes a look like a captured lion.'
Cum tres/*tot tey*/ne ja / l'empeyr (81)
'As if he already governed the empire'
Li quarz / lo duyst / *corda* / toccar (100)
'The fourth [teacher] taught him to strum the strings [of instruments]'
Et en / toz tons / *corda* / temprar (102)
'And to temper the instrument in all the tones'

21. Old French *combien* is rendered here as 'how long', following MacBain (1964:96), who presumably had in mind the original Latin source text: "usque quo hec stulta christianorum supersticio injurias diis nostris irrogabit?" (Jarník, 1894:24).

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22. To prevent outliers in the data from unduly affecting the result, the mean 3/5 ratio was calculated by trimming the top and bottom scores and then averaging the remaining scores.
23. The 3/5 ratio data do not in fact speak to the likelihood of stresses appearing in position 4 relative to position 6. Rather what is measured is the likelihood of a stress occurring in positions 3 and 5, respectively, with concomitant lack of stress in positions 4 and 6.
24. It should be noted however that the sample size for *Alex.* is exceedingly small, making the conclusion uncertain.
25. On the lapidary portion of *Best.*, see note 18.
26. The attribution of *Phil.* to Crestien de Troyes has also been questioned by Voretzsch (1951), among others, but scholarly opinion now seems to have accepted that this work is indeed Crestien's.
27. An anonymous reviewer has suggested that the unexpected effects seen in the data obtained from Crestien's work might be due to the manuscripts chosen as the basis for the editions used. In particular, many of Crestien's works are well preserved in manuscripts attributed to the 13th century scribe Guiot, whose native dialect was very close to that of Crestien's and whose careful scribal practice is widely admired by modern editors; moreover, current editions of Crestien's works vary considerably in their attitude toward emendation. On one extreme we find editors who insist on a near-total adherence to a single "best" manuscript; on the other extreme are editions which present a (possibly arbitrary) synthesis of presumed best readings from many or all known manuscripts. Of the editions consulted for this study, *Lanc.* and *Guil.* (as well as *Godf.*) are the most conservative in emendation style, while *Erec* and *Clig.* are still conservative but somewhat less so. On the other hand I have also made use of W. Foerster's edition of *Yvain*, which represents the synthetic style in its extreme form and may have contributed to the decline in iambicity seen in the sample taken from that poem. Clearly the role of these factors, although unaddressed here, merits close attention in future work.
28. Crestien's final and uncompleted work *Perceval* was not included in this study, since its date of composition is usually taken to be after 1180. A comparison of the rhythmic styles of *Perceval* and *Yvain*, as well as more extensive sampling of all of Crestien's works, must be left for future study.
29. Marie's style shows a lower rate of clashes, but only a slightly higher concentration of rhythmic variety in the second foot and of iambicity overall.
30. A similar conclusion was drawn by Verluyten (1982) in a study of the progressive loosening of restrictions on caesura placement in the French alexandrine.
31. As Pope (1934:82) noted, the beginning of the 12th century corresponds to the onset of several changes which characterize what she called Period II of Old French: "The dominant factors in the evolution of pronunciation in Later Old and Middle French [c. 1100–1600] are the gradual lessening of the heavy tonic stress that characterized Period I [c. 500–1100] and a new tendency to link closely together words closely connected in thought."

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APPENDIX

For each sample taken, the following list gives the edition(s) consulted, the lines examined, and remarks on the dating of the text for the purposes of this study. Lines that were not "correct" (i.e., with more or less than eight syllables) or where choice of elision yielded an ambiguous scansion were left out of consideration. Thus, in many cases the total number of lines consulted exceeds the sample size. In a few cases the sample size is seemingly larger than expected given the range of lines; this arises when, as in *Piramus et Tisbé*, interpolated lines are designated by, say, 1a, 1b, 1c, and so forth.

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Pass. Koschwitz (1879) and Urbina (1973), ll. 1–515.

Leger Koschwitz (1879), entire poem. Both of the Clermont poems were probably originally written in a northern French dialect, but showed extensive influence of Franco-Provençal copyists, particularly in the case of the *Passion* poem (Ortiz de Urbina, 1973:11). Both are usually dated to the last quarter of the 10th century (Voretzsch, 1951:47).

Gorm. Bayot (1921), entire fragment. The repeated refrain in the first section of this poem was omitted from the sample after its first occurrence. Gaston Paris dated the poem at c. 1133, and a date of c. 1125 is commonly cited. Nevertheless, the high density of formulaic language in the text reflects an archaic oral tradition (Lonigan, 1976; Luethans, 1990). *Gorm.* exhibits linguistically archaic features as well, such as occasional pluperfect verbal forms. Although the the Brussels Fragment itself is undoubtedly 12th century, Luethans (1990) concluded, "[t]he period of the actual composition of the song . . . is clearly much earlier than the manuscript," meaning that *Gorm.* is in fact contemporary with the earliest extant *chansons de geste* such as *Roland* and *Guillaume*. For this reason, I follow Duggan (1973) in assigning a range for *Gorm.* between 1068 and 1104. Here, 1086 is taken as the mean within this range for statistical purposes.[1]

Alex. Foulet (1949) and Bartsch and Wiese (1951), selection 7. Usually dated to c. 1100 (Voretzsch 1951:237).

Bren. Short and Merrilees (1979), ll. 39–803. As is well known, Benedeit treats the final syllable of a feminine line as contributing to the metrical count; thus feminine lines have a pattern XXXXXXSW. Since the rhythmic properties of such lines are not commensurable with those of normal octosyllabic feminine lines, these lines were not counted in this study. As a result, the number of lines in the sample for *Bren.* (500) is far fewer than the number of lines consulted (764). The edition of Waters (1928) is heavily emended (perhaps correctly), many lines being reconstructed to conform with Waters's views on Benedeit's versification.[2] For this study, I have made use of Short and Merrilees (1979), a single-manuscript edition based on the oldest and most complete text, *A* (British Library, Cotton Vespasian B, X(I), ff. 1–11). Dating of the poem remains controversial and ranges from c. 1106 to c. 1122; I have assigned 1114, the arithmetic mean.

Marg. Keller (1990), which included diplomatic texts of the three manuscripts preserving the work. The samples studied here are taken from *M* (Tours, Bibliothèque municipale 927), ll. 2–276 (250 lines) and *A* (Paris, Bibliothèque de l'Arsenal, 3516), ll. 490–746 (250 lines). This saint's life is generally acknowledged to be prior to Wace's other short religious poems (see *Wace*; Keller, 1990:40ff.)

PhTh. Walberg (1900), *Best.* 2889–3138; Studer and Evans (1924), *Apoc.* 9–297, *Alph.* 188–222, 297–391, 446–572, 763–891, 1066–1192, 1247–1375. Legge (1963:23) suggested a dating for *Best.* between 1121 and 1135 and surmised that "between the first and second drafts of his *Bestiary* Philippe had discovered the virtues of the octosyllabic couplet," during which interval he composed the Apocalyptic lapidary, which he referred the reader to for more information at *Best.* 3005–3008. Thus *Apoc.* appears to predate what may have been a revised version of *Best.*; *Alph.*, also usually ascribed to Philippe (Studer & Evans, 1924:200), presumably follows both. I have chosen 1136 as

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a statistical compromise to date these works taken as an aggregate sample of Philippe's versification.

Est. Bell (1960), ll. 853–1110, 4157–4416, 5131–5392. I follow here Bell's conclusion that "Gaimar's work was written towards the close of the five-year period 1135–40" (1960:lii).

Adam Odenkirchen (1976), ll. 8–46, 314–385, 472–517, 745–882, 907–937. Precise dating is controversial, but here I follow Legge (1963: 312), according to whom the work "is generally supposed to have been written in England about 1140." The versification is mixed, but several long speeches, as well as much of the dialogue, is in octosyllabic couplets.

Wace Ashford (1933), ll. 304–428, 480–604, 1111–1235; Ronsjö (1942), ll. 104–228, 230–354, 397–522, 978–1104. It is generally agreed that both *Nos.* and *Nic.* were written after *Marg.* but before Wace's longer works, the first of which, *Brut*, was completed in 1155. Although Levy (1957) assigned the date c. 1145 to *Nos.*, the text's editor, Ashford (1933:xvi), suggested 1130–1140. I use c. 1140 here. For *Nic.*, Ronsjö (1942:26) recommended a date around 1150, which I adopt. For statistical purposes, both works are here grouped together as *Wace* with a date c. 1145.

FrLap. Studer and Evans (1924), ll. 14–138, 140–264, 354–478, 648–775. Precise dating of this work is difficult to establish, but Studer and Evans argued for a date somewhat prior to 1150 on the basis of some (admittedly controversial) linguistic evidence, as well as the observation that *FrLap.* apparently formed the basis for a French prose version known to be from c. 1150.

Theb. Lage (1966), ll. 21–272, 2531–2780. *Theb.* is usually acknowledged as the earliest extant example in its genre in French (Voretzsch, 1951). Fox (1974:134) suggested a date of "about 1150."

Prov. Isoz (1988), ll. 716–967, 4972–4223. Although earlier dates have been proposed for this work (Vising 1923:41), here I follow Legge (1963:41–42), who surmised that *Prov.* was probably written as a moral textbook for Roger de Condet, who would have been about 12 years old in 1150.

Pir. Boer (1921), ll. 111–375, 452–750. Among the several *imitations de l'antique* from the mid-12th century, *Pir.* exhibits a constellation of archaisms that led de Boer to suggest a date of 1170 at the latest and a date of composition most likely prior to *Eneas* (see *Eneas*).

Brut Arnold (1938), ll. 647–771, 2944–3088, 4884–5008, 7461–7565. Known to have been completed in 1155.

Edm. Nabert (1915), ll. 364–494, 856–984, 1151–1279, 1556–1680. Dating is quite uncertain, but the text shows many archaic properties. I follow Vising (1923:43), who suggested 1150–1160 as a reasonable range.

Eneas Grave (1968), ll. 3977–4101, 6989–7113, 7140–7264, 9283–9407. Voretzsch (1951) suggested that *Eneas* probably preceded *Troie*, for which the range 1160–1170 is conventional (see *Troie*). The date of c. 1160 appears to now be fairly standard in the literature.

Narc. Thiry-Stassin and Tyssens (1976), ll. 305–430, 583–707, 721–845, 862–986. The dating of *Narc.* is quite uncertain. Voretzsch (1951: 245) saw the work as not long after *Pir.*, which is clearly very early; but Fox (1974), for example, suggested 1170. Thiry-Stassin and Tyssens (1976:50–53) pointed to allusions in *Narc.* to *Eneas*, but also to allusions in *Troie* to *Narc*. Within this window of 1155–1165, I adopt c. 1160 as a reasonable compromise.

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Floire Leclanche (1980), ll. 958–1082, 1557-1681, 1716–1970.

Sages Misrahi (1923), ll. 1153–1403, 3075–3326. Opinions on the date of this work are remarkably diverse, ranging from 1135 to 1200 (Levy, 1957; Voretzsch, 1951:375), but Misrahi found no evidence either to support or challenge Gaston Paris's conjecture of c. 1155. In view of the quite distinct possibility of a later date of composition, however, I find it prudent to assign the slightly later date of 1160.

Troie Baumgartner and Vielliard (1998), ll. 3787–3912, 5506–5630, 15121–15246, 26450–26574. This extremely long work is thought to have been composed in the interval between 1160 and 1170.

Laur. Russell (1976), ll. 35–335. No precise date can be assigned, but Russell pointed to linguistic evidence suggesting an interval 1140–1170 and (it seems to me) a date most likely later rather than earlier within this range (Russell 1976: 22–23).

Erac. De Lage (1976), ll. 736–860, 1616–1740, 3205–3329, 5716–5840. The dating of *Erac.*, as well as of *Ille*, also by Gautier d'Arras, is quite uncertain. Voretzsch (1951) argued that *Erac.* is certainly after 1164, but that it precedes *Ille et Galeron*.

Lais Rychner (1973). Samples were taken from four different lais: *Fresne* 340–464, *Eliduc* 832–956, *Guigemar* 567–691, and *Milun* 247–371. Voretzsch (1951:128, 264) observed that the *Lais* were probably written over a long span of time, and that some, such as *Eliduc*, are in all likelihood much earlier than others. He suggested a dating of some time in the middle 1160s. Le Mée (1978:11–12) also discussed the evidence bearing on the dating of the *Lais*. Some scholars have seen influences of *Brut* and *Eneas* (c. 1155) in the *Lais*, while Gautier d'Arras makes allusion in ll. 929–30 of *Ille* (c. 1172) to the *Lais*. For present purposes the date of c. 1167 appears to be a reasonable conjecture.

Grac. Kunstmann (1982). The miracles in the collection are numbered with Roman numerals. The following sample was taken: XIV (1–103), XV (22–55), XXVII (18–148), XXXI (21–168), XXIV (1–40), XXXV (12–109), XL (1–140). Kunstmann stopped short of proposing any particular date for Adgar's work and disputed the inferences made by Legge (1963) as to both the identity of Adgar and the date of his works. Nevertheless, for the sake of concreteness, I adopt a compromise date among Legge's proposed range 1165–1180 (see also Vising, 1923:43, who proposed 1160–1170).

Mich. Francisque-Michel (1856), ll. 260–387, 2824–2949, 3075–3200, 3612–3737. Dating is fairly uncontroversial (Voretzsch, 1951: 232).

Guil. Holden (1988), ll. 18–267, 1000–1250, 1376–1616, 2742–2992. This work, whose author identifies himself as "Crestiiens," has long been the subject of an authorship controversy, and the date of the work is equally contentious. I follow Legge (1963: 141), who gave 1170 as a possible date. For discussion, see the text.

Edw. Södergård (1948), ll. 277–403, 919–1045, 1885–2010, 2796–2920, 3764–3890, 4423–4548. The author of this life clearly identified herself as a nun of Barking, but whether the Nun of Barking is the same as Clemence of Barking, author of *Cath.*, remains unsettled. Nevertheless, there appears to be substantial agreement that *Edw.* precedes *Cath.*; indeed, it may have been written before Clemence felt confident enough to name herself explicitly

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(MacBain, 1964:xxiv–xxvii). MacBain suggested a range of 1163–1189 for *Edw.*, disputing the 1170 *terminus ad quem* proposed by Södergård. I adopt c. 1170 as a reasonable compromise date.

Ille Lefèvre (1988), ll. 781–899, 2987–3109, 5288–5407, 5608–5730. Based on *Eliduc*, one of the *Lais*, and alluding directly to them, *Ille* must post-date the *Lais*. Lefèvre (1988:12) suggested a range of 1167–1178, and 1172 is chosen here as the mean.

Tris. Wind (1950). Samples were taken from the Sneyd ms. (siglum *Sn*), ll. 1–284, and the Douce ms. (siglum *D*), ll. 309–599. No decisive evidence places Thomas's *Tristan* in a particular time, but, as Wind observed, debate has centered on the question of whether *Tris.* preceded or followed Crestien's *Cligés*, in which Crestien quite obviously expressed his attitude toward the Tristan legend (although perhaps not to Thomas's work per se). For present purposes, I assign the date c. 1172 as a comfortable compromise in the range 1155–1190 (the extremes proposed in the literature).

Phil. de Boer (1974), ll. 172–296, 578–702, 838–962, 997–1123. Certainly composed prior to *Cligés*, the prologue to which alludes to *Phil.*, but otherwise the work remains impossible to date with certainty.

Cres1 *Erec*: Carroll (1987), ll. 27–277, 5271–5520; *Cligés*: Gregory and Luttrell (1993), ll. 913–1162, 3086–3210, 4070–4194. The dating of all of Crestien's works is fraught with uncertainty. Earlier scholars assigned a date of c. 1164 to *Erec* (Levy, 1957), but later dates for all Crestien's works are now being proposed. Luttrell, for example, suggested 1184–1186 for *Erec* (Gregory & Luttrell, 1993). For present purposes I assign here a compromise date of c. 1170 to *Erec* and date the remaining works accordingly. For statistical purposes I assign a date of c. 1173 to the grouped sample for Crestien's early *romans*.

Rou Holden (1970), section 3: ll. 761–887, 3100–3224, 4188–4312, 5320–5444, 5684–5988, 7255–7382. Only the third section of this long work was written in octosyllabic couplets, and this section is known to have been written after 1170. It is not clear when Wace finished the work, but c. 1175 is a good estimate of the date of composition of the octosyllabic sections.

Cath. MacBain (1964), ll. 173–322, 752–896, 1412–1551, 1865–2012. Jarník (1894), in an earlier edition of the work, recommended a date of c. 1175, but MacBain, who suggested a range 1175–1200, found no evidence to support (or challenge) such an early date.

Livre Lodge (1979), ll. 72–196, 400–524, 807–932, 1076–1200. The date range of 1174–1178 was established by Lodge (1979: 22).

Cato Stengel (1886), ll. 1–80, 315–465. Stengel's edition includes three extant Anglo-Norman translations of Cato's Distichs (Elie de Wincestre, Everard, and an Anonymous), and the relative dating of these has been the subject of some controversy (Legge, 1950). While Vising (1923) dated the translation by Elie to 1140, on the grounds that Elie's work predates Everard's, Legge (1950:16), following Stengel (1886), disputed Vising's conclusions for the post-dating of Everard's work and insisted that Elie's translation is from the early 13th century. I adopt here a reasonable compromise of c. 1179, the latest date possible for a work to be included within the parameters of the present study.

Cres2 *Lanc.*: Roques (1978), ll. 190–439, 1744–1993, 4740–4989; *Yvain*: Reid (1942), ll. 175–674, 2665–3030, 5338–5461. This grouped sample of the later *romans* of Crestien is assigned the date 1179 for statistical purposes.

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Godf. Roques (1978), ll. 6558–6807, 6862–6986. A completion of *Lanc.*, presumably written soon after Crestien turned to work on *Yvain.*

NOTES

1. Voretzsch (1951) suggested a date of 1080–1100. See also Bartsch and Wiese (1951), who also admitted the possibility of a late 11th century date.

2. In particular, Benedeit appears to have adopted the stricture that the boundary between the second and third foot must coincide with a word boundary. This is true for nearly all lines, and Waters argued that violations of this stricture in most instances resulted from scribal error or revision.

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