

## ‘One is the loneliest number . . .’: the semibreve stands alone

THE 14th-century music theorist Jacobus devoted a complete chapter of his *Speculum musicae* (SM vii.37) to a critique of what he termed ‘solitary’ semibreves (*semibreves solitarias*). He listed several arguments against the use of solitary semibreves. Some are less than convincing, such as his claim that due to its geometrical shape—a lozenge balanced on its pointed end—a semibreve cannot stand alone since it lacks the firmness and stability of a flat-bottomed note (such as a breve or long).<sup>1</sup> But his primary argument was that semibreves should be notated in groups: one semibreve always requires at least one other semibreve notated with it so that taken together they return the value of a proper (*recta*) breve (*sed requirit aliam vel alias sibi iunctas ad totum reddendum suum*).<sup>2</sup>

Book VII of *Speculum musicae* was written as a defence of the ancient art of music against the innovations of modern musicians. Jacobus was particularly focused on notational novelties. Earlier in Book VII he outlined the properties of semibreves according to the 13th-century authorities Franco of Cologne and Petrus de Cruce, stressing that the old masters ‘never claimed that semibreves are divisible, or are allowed to have stems, or to occur singly’ (*nunquam semibreves posuerunt esse divisibiles, caudabiles, solitarias*).<sup>3</sup> In fully fledged Ars Nova notation, however, Franco’s rules of imperfection were extended to the breve–semibreve relationship (the tempus level of mensuration in the Ars Nova system), and solitary semibreves were permitted.<sup>4</sup> When a semibreve is understood as possessing the property to imperfect the breve it follows or precedes, semibreves can indeed stand alone, as it does in the pattern breve–semibreve–breve (■ ◆ ■).

While Jacobus was critical of a variety of post-Franconian notational practices, his lengthy criticism of solitary semibreves implies that his critique was written *after* the Ars Nova systematization of the breve–semibreve relationship. When Jacobus cites the moderns’ use of the solitary semibreve, it may also indicate that he knew motets notated in this manner.<sup>5</sup> The present article considers what this motet repertory might be.

The beginning of the French Ars Nova is often identified in music history textbooks with the newer motets copied in the Paris, Bibliothèque Nationale de France, fr. 146 manuscript of the *Roman de Fauvel* (copied c.1317–22; hereafter **Fauv**).<sup>6</sup> While some **Fauv** motets employ some novel post-Franconian techniques (such as red notation, and duple mensuration at the level of modus), the solitary semibreves of Jacobus’s complaint are not found in the motet repertory of **Fauv**. In the following I propose that, in the main, Jacobus’s complaints against the ‘new art’ target the systematization that extended the Franconian rules of perfection and imperfection to the breve and semibreve, and that he may not have been as put out by the tweaks to Franconian notation **Fauv** exhibits (he never mentions red notation, and at times seems somewhat ambivalent towards descending stems). When Jacobus critiques the Ars Nova, then, I suggest that his criticisms were aimed at post-**Fauv** theory and practice, the period for which I contend the current use of the term ‘Ars Nova’ ought to be reserved.

First, I examine some ambiguities that **Fauv**’s notation of semibreves presents. I then consider the evidence of another group of pieces classified as Ars Nova motets by music historians since

they now survive in copies explicitly notated in Ars Nova notation (the notation that Jacobus critiques), and copied later than **Fauv**. These motets contain clues indicating that they were originally copied in a notation similar to **Fauv**'s notation. That is, even these motets too (originally) had no solitary semibreves. To find the solitary semibreves of Jacobus's complaint then, and *per consequens*, the music of Jacobus's 'ars nova', this article concludes with a brief consideration of compositions explicitly composed in perfect tempus that appear to have been originally conceived in Ars Nova notation.<sup>7</sup>

### Semibreve ambiguities in post-Franconian notations

Ars Antiqua notation, as codified in Franco's *Ars cantus mensurabilis* of c.1280, separates strings of semibreves into groups of two or three semibreves—each group comprising a *recta* breve unit—through the use of dots to separate the groupings.<sup>8</sup> Franco's breve was only ever ternary, and his semibreves could signify two different durations while maintaining the same grapheme (♠): the *semibrevis maior* is twice as long as the *semibrevis minor*. Two semibreves notated in the place of one breve are sung in the ratio 1:2 (*semibrevis minor*–*semibrevis maior*); and three semibreves are each equal, in the ratio of 1:1:1 (*semibrevis minor*–*semibrevis minor*–*semibrevis minor*).

By some point in the 14th century, probably around the mid to late 1320s, in France it had become more common to write motets that were measured by a binary breve, that is, with breves divided into two equal semibreves.<sup>9</sup> Most of the sources that transmit French Ars Nova motets (these manuscripts date from c.1350 or later) are copied in an unambiguous Ars Nova notation that clearly indicates whether the underlying breve is binary or ternary.

But for a number of sources copied in the late 13th and early 14th centuries, assessing the relative durations of semibreves that comprise a breve is tricky. For starters, at this time, a breve unit could comprise more than three semibreves—as it does in, for example, some motets found in the later fascicles of **Mo**, and in **Tu** and **Fauv** and a number of English fragments (a list of manuscript abbreviations is provided at the end of this article).<sup>10</sup> It may have been

this development that prompted some scribes, singers, and/or composers to clarify relative durations of semibreves. While a number of treatises outline common patterns for realizing undifferentiated semibreves, a handful of manuscripts and theoretical treatises are witness to a practice of adding stems (*caudae*) to semibreves, which they called 'signing' the semibreve (*semibrevis signata*).<sup>11</sup> Apparently a somewhat flexible practice, this signing of semibreves, according to theorists, could clarify and/or change relative durations within the expected semibreve patterns, in all likelihood because the speed of the breve had slowed down enough to allow for this sort of differentiation. While ascending stems became the norm in French Ars Nova later on (the Ars Nova *minim*), descending stems on lozenge-shaped notes are found in the earliest sources of the transitional repertory such as **Fauv**, **Pn571** (copied c.1325–6 according to Andrew Wathey) and **Br** (copied c.1334–5 according to Karl Kügle).<sup>12</sup> It should be noted that, as Edward Roesner suggested, the descending stems may also have had other functions, for example, as an 'aid to declamation', or, within the context of **Fauv**, simply to mark a motet as a modern work.<sup>13</sup>

Early Ars Nova theorists wrote that a descending stem indicated a note longer in duration, even if the note's position with respect to the other notes indicated that it ought to receive a short duration. For example: within a composition measured by a ternary breve (that is, with three equal semibreves per breve, as described in Franconian theory), a descending stem added to the first semibreve of two (♠ ♠) would indicate that the semibreve pair was to be sung in the ratio 2:1 (*semibrevis maior*–*semibrevis minor*). Without the stem, as mentioned above, it would be sung 1:2 (*semibrevis minor*–*semibrevis maior*).

Because undifferentiated semibreves (that is, notated without stems) admit of different interpretations and can be made to fit into breves in different ways, it is sometimes unclear from the notation in practical sources whether a composition is measured in ternary or binary breves (recall that in the Ars Antiqua of the 1280s the ternary breve was favoured, whereas the transmission of new motets after the mid to late 1320s shows the popularity of the binary breve).<sup>14</sup> In the transitional repertory

(the **Fauv** motets, and perhaps even including some **Mo** and **Tu** motets that have strings of paired semibreves) it can be hard to tell whether the underlying breve is binary or ternary. In his edition for the series *Polyphonic Music of the Fourteenth Century*, Leo Schrade edited all but one of **Fauv**'s motets as if the breve was evenly divided into two semibreves, that is, with binary breves (a mensuration that would later be termed 'imperfect tempus' by *Ars Nova* theorists).<sup>15</sup> For the medieval singers of **Fauv**'s motets, the placement of stems on certain semibreves may have told them something about how to sing the groups. For us modern-day editors they may offer clues (but perhaps not explicit answers) as to the underlying metric organization of the breve.

Table 1 summarizes a set of possibilities for how groups of two to four semibreves might have been sung depending on the decision as to whether the underlying breve is binary or ternary. There was no term in Franconian theory for a semibreve of shorter duration than the *semibrevis maior* (worth 2/3 of the breve) and the *semibrevis minor* (worth 1/3 of the breve), and before the later systematization of such shorter values, they may all have fallen into a catch-all category that Jacobus refers to as the 'semibrevis minima'.<sup>16</sup> Table 1 employs this term, translating them as equal quavers for convenience, and not parsing their durations further.<sup>17</sup>

If the first lozenge of a group of three has a descending stem (♠ ♠), and the breve is ternary, the note with the descending stem was probably equivalent to a *semibrevis maior*, and the following two notes comprise the final third of the breve. This is also true of the two-note pattern, where the first note with a stem is also a *semibrevis maior*. If the breve is binary, in a three-note pattern with a stem on the first note, the first note is likely held for a *semibrevis*

*minor*, with the remaining two notes taking up the rest of the binary breve. It is less clear how a two-note pattern with a stem on the first semibreve may have been interpreted within a binary breve: lengthened in some way, perhaps, but neither of the notes would be equivalent to any pre-existing Franconian value. One could argue that the presence of several two-semibreve groups with descending stems on the first semibreves indicates a ternary-breve composition, since the stem makes more sense in a context where the default interpretation of two semibreves is in the ratio 1:2, and the descending-stem reverses that interpretation to 2:1. However, in some cases these stems may have had other meanings that are now unknown.<sup>18</sup>

Only eleven **Fauv** motets have semibreves with descending stems, and of these, only three use descending stems within two-semibreve groups.<sup>19</sup> Table 2 outlines possible breve divisions for this group of motets. For the reasons given above, it is possible that the three motets with two-semibreve groups whose first semibreve has a descending stem (♠ ♠) may have a ternary division of the breve (*Aman / Heu, Garrit / In nova* and *Trahunt / Ve qui gregi*), although perhaps the ♠ ♠ pattern indicated something like this kind of realization (♠ ♠) within an underlying binary breve.<sup>20</sup> *Inflammatis / Sicut* may also be based on ternary breves, given its high proportion of three-semibreve groups without a descending stem on the first note (♠ ♠ ♠) that may signify a Franconian equal division of the breve into three semibreves. In contrast, the sparsity of three-semibreve groups without descending stems (♠ ♠ ♠) in *Firmissime / Adesto, Servant / O Philippe, Nulla / Plange* and *Tribum / Quoniam* combined with their relative frequency of three-semibreve groups with a descending stem on the first semibreve (♠ ♠ ♠)

Table 1 A set of possibilities for interpreting groups of semibreves with descending stems and/or undifferentiated by stems

binary breve		ternary breve	
♠ ♠	<i>s. minor</i> – <i>s. minor</i>	♠ ♠	<i>s. minor</i> – <i>s. maior</i>
♠ ♠ ♠	<i>s. minima</i> – <i>s. minima</i> – <i>s. minor</i>	♠ ♠	<i>s. maior</i> – <i>s. minor</i>
♠ ♠ ♠	<i>s. minor</i> – <i>s. minima</i> – <i>s. minima</i>	♠ ♠ ♠	<i>s. minor</i> – <i>s. minor</i> – <i>s. minor</i>
♠ ♠ ♠ ♠	<i>s. minima</i> – <i>s. minima</i> – <i>s. minima</i> – <i>s. minima</i> <sup>21</sup>	♠ ♠ ♠	<i>s. maior</i> – <i>s. minima</i> – <i>s. minima</i>
		♠ ♠ ♠ ♠	<i>s. minima</i> – <i>s. minima</i> – <i>s. minor</i> – <i>s. minor</i>

and four-semibreve groups (••••) in all likelihood point towards a binary breve mensuration for these motets.<sup>22</sup> *Detractor / Qui secuntur* has mensuration signs in **Fauv** and its concordant source **Pn571** that are thought to indicate a binary breve.<sup>23</sup> The remaining **Fauv** motets (*Scariotis / Iure*, *Orbis / Vos pastores*) are more ambiguous in their pattern distribution. Several **Fauv** motets (marked with an asterisk in Table 2) survive in later manuscripts notated in an unambiguous Ars Nova notation that specifies imperfect tempus (that is, binary breves). Whether we should retroactively apply these interpretations to the notation of **Fauv** is less clear. Perhaps all that can be said for sure is that the scribe's use of descending stems in **Fauv** demonstrates a desire to clarify breve divisions.

### The updating of *Colla / Bona*

In addition to the above-discussed **Fauv** concordances, there are indications that other motets—now surviving only in sources copied in a fully developed Ars Nova notation—were also originally conceived in a post-Franconian notation like that found in **Fauv**. One such motet is the well-known *Colla / Bona*—a motet solidly attributed to Philippe de Vitry and apparently one of his most popular, copied in at least nine music manuscripts.

One of *Colla / Bona*'s music sources, a *rotulus* that Charles Brewer dated to the third quarter of the 14th century and localized to Picardy, is housed in Wrocław University library. In the **Wrocław** copy

of *Colla / Bona*, dots of division separate many groups of notes into breve units. (Illus. 1, which shows the beginning of the triplum, highlights these dots of division with arrows.) The dots are superfluous, since the consistent use of ascending stems in **Wrocław** to mark minims obviates the need for dots of division. Dots would only be necessary (per Franco) if the strings of semibreves were undifferentiated, in which case they would group the semibreves into breve units. These dots are not present in the other manuscript sources for this motet. Illustration 2 shows the beginning of the triplum in **Cambrai**, which may be compared to the version in **Wrocław** in illustration 1.

The dots in **Wrocław** suggest that its scribe copied this motet from an exemplar that was written in a notation like that of **Fauv**, with dots of division marking semibreve groups, and without ascending minim stems. Though **Wrocław**'s scribe updated the notation by adding ascending stems to indicate the shorter notes in groups of three, four or five semibreves, he nonetheless retained the dots of division of his exemplar. Example 1 scores up the opening of *Colla / Bona* notating each voice in a 'Fauv-like' notation. It is possible to notate the entire motet in this way.

Richard Hoppin had previously remarked on the possibility of notational translation in a concordance of a **Fauv** motet. The scribe of **Pic** (a source that, like **Wrocław**, is a *rotulus*, and also probably copied in Picardy) appears to have been somewhat

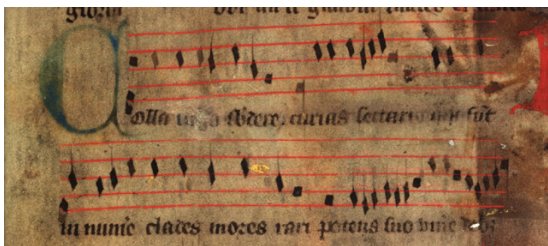
Table 2 **Fauv** motets with descending stems. Those marked with an asterisk (\*) have concordances in later manuscripts.

	↑↑	↑••	•••	••••	breve division
<i>Firmissime / Adesto</i> *	0	15	3	37	binary
<i>Aman / Heu</i>	33	51	3	39	binary?
<i>Garrit / In nova</i> *	7	23	3	34	binary?
<i>Scariotis / Iure</i>	0	8	13	10	ternary?
<i>Servant / O Philippe</i> *	0	18	5	12	binary
<i>Nulla / Plange</i>	0	34	3	69	binary
<i>Detractor / Qui secuntur</i> *	0	12	7	16	binary
<i>Tribum / Quoniam</i> *	0	4	4	17	binary
<i>Inflammati / Sicut</i>	0	1	23	1	ternary
<i>Trahunt / Ve qui gregi</i> *	33	5	43	16	ternary
<i>Orbis / Vos pastores</i>	0	10	8	18	binary?





1 Excerpt from triplum of *Colla / Bona* in **Wrocław**, with arrows pointing to the dots of division



2 Opening of triplum of *Colla / Bona* in **Cambrai** (fol. 5r)

confused by the dots of division in his exemplar when copying the motet *Garrit / In nova*. He notated minims in *Garrit / In nova* with ascending stems, but also retained some dots of division. At one point he seems to have put the dots at first in the incorrect positions. The scribe's attempt to correct this mistake results in what Hoppin points out is

a 'meaningless series of five dotted semibreves' (see [illus. 3](#), where a box marks the comparable passages in **Pic** and **Fauv**).<sup>24</sup>

Given that almost all of the extant manuscripts of the Ars Nova motet repertory appear to date from after 1350, at which point Ars Nova notation seems to have been fully established, these examples prompt us to consider the possibility that other so-called 'Ars Nova' motets, if they could successfully be transcribed into a 'Fauv-like' notation, may have been originally conceived in this 'Fauv-like' post-Franconian notation. The motet copied directly before *Garrit / In nova* in **Pic**—*Amer / Durement*, which has been attributed by some scholars to Vitry—may be another example of a motet translated from a post-Franconian notation into Ars Nova notation, again as signalled by superfluous dots in this passage of the motetus as notated in **Pic** (see [illus. 4](#)).<sup>25</sup>

The motets discussed thus far are all notated in their updated sources in imperfect tempus: that is, with an underlying binary breve comprised of two equal semibreves per breve. Strings of paired semibreves in imperfect tempus are notated the same way in post-Franconian notations and Ars Nova notation, except that dots of division are employed in Franconian and post-Franconian notations, which are not needed between pairs of semibreves in Ars Nova notation. Semibreves, whether in Ars Antiqua or Ars Nova notation, are always found in groups of two or more. That is to say, there are no solitary semibreves in imperfect tempus, even in Ars Nova notation.<sup>26</sup> In perfect tempus in Ars Nova notation, however, the semibreve pair is replaced with either a breve-semibreve (■ ♦) or semibreve-breve (♦ ■) pair, where the solitary semibreve imperfects the preceding or following breve.

### Perfect tempus and the notational updating of *Mater / Gaude*

Solitary semibreves are therefore not found in the motets of **Fauv**, nor in the above-discussed examples of motets that appear to have been originally conceived in a post-Franconian 'Fauv-like' notation but which now survive only in Ars Nova sources notated in imperfect tempus. To find solitary semibreves, we must look to pieces explicitly notated in perfect tempus in Ars Nova notation. It is apparent from the list

Ex.1 Translation of the opening of *Colla / Bona* into a 'Fauv-like' notation, breves 1–20 (pitches and text from *Trem*, opening [i]).

The image displays a musical score for the opening of *Colla / Bona*, translated into a 'Fauv-like' notation. The score consists of three staves: triplum, motetus, and tenor. The notation uses a system of breves 1–20, with pitches and text from *Trem*, opening [i]. The lyrics are: Col - la iu - go sub - de - re cu - - - - - Bo - na con - - - - dit ce - te - ra Libera me Domine. Tenor - ri - as sec - ta - ri qua - rum sunt in mu - ne - bo - - - - - num li - ber - ta - - - - - re cla - des mo - res ra - ri po - tens su - - o vi - ve - - tis

of motets in Appendix 1 that imperfect tempus is a far more common mensuration, with only a handful of motets in perfect tempus.<sup>27</sup> These perfect tempus motets are listed in Table 3 (alphabetically according to the motetus incipit).<sup>28</sup>

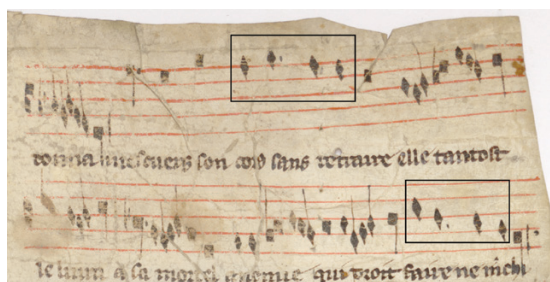
The objectionable solitary semibreves (and imperfected breves) are clearly placed at the beginning of *Douce / Garison's* triplum, rendering a trochaic rhythm (■ ♦) on the second breve unit of the composition (highlighted with boxes in ex. 2), and such rhythms are used throughout. Even more prominently, the solitary semibreves open *Petre / Lugentium*, where they are used to render an iambic

rhythm (♦ ■) in the first pair of notes sung by the top two voices ('Pe-tre' as ♦ ■ in the triplum and 'Lu-gen-' ♦ ■ follows at breve 5 when the motetus enters). The other motets of Table 3 also contain similar configurations of imperfect breves paired with solitary semibreves that imperfect them.

The notation of *Mater / Gaude*, however, suggests that, though in perfect tempus, this motet was originally notated without solitary semibreves. *Mater / Gaude* was thought to be unique to **Br**, until the discovery by Karl Kügle in 2015—reported in his article in this issue of *Early Music*—of a concordance in a manuscript fragment in Koblenz (hereafter



3 A passage of *Garrit / In nova* from **Pic** (fol.67r) and **Fauv** (fol.44v), with the series of five dotted semibreves in **Pic** (photos: Bibliothèque Nationale de France)



4 *Amer / Durement* in **Pic** (fol.67r), with boxes highlighting where the dots of division are found (photo: Bibliothèque Nationale de France)

**Koblenz**). Both **Br** and **Koblenz** offer evidence that *Mater / Gaude* was first conceived in a notational style close to **Fauv**, but then updated by their scribes, with some inconsistencies, into Ars Nova notation. **Br** provides a third example of a scribe working from a post-Franconian 'Fauv-like' exemplar and copying motets onto a *rotulus*, while simultaneously updating the notation of their exemplar.

The **Br** scribe notates all the shortest notes as minims with ascending stems. Two-note trochaic rhythms at the breve-unit level are notated with breve-semibreve combinations, that is, as an 'imperfected' breve followed by Jacobus's 'solitary semibreve' (■♦). *Illustration 5* is the beginning of the motetus from **Br**, with a notational translation provided (without pitch) into what I propose was the exemplar's original 'Fauv-like' notation, where the

breve-semibreve combinations would have been notated as pairs of semibreves. All the three- and four-semibreve groups in the motetus are melismatic, with the restricted rhythmic language of this voice part (mostly trochaic at the long-breve level, and exclusively melismatic semibreves) reminiscent of the older 13th-century style, except that the *Ars Antiqua* allowed for no more than three melismatic semibreves per breve.

One passage of the motetus gave the scribe of **Br** pause, however. Here (shown in *illus. 6*), dots of division which are not present elsewhere in the motetus are suddenly invoked, and a descending stem is drawn on the second semibreve on 'de-sit', with a dot of division following (♦♦). In *Ars Nova* notation, this pair of notes could have been notated as two semibreves (♦♦), and the second semibreve understood as what was termed a *semibrevis altera* and held for a duration of two semibreves. Thus, correctly notating this passage in *Ars Nova* notation would have required neither the descending stem nor the dot. The intervention of the scribe with the addition of the descending stem suggests unfamiliarity with the concept of the *semibrevis altera* and/or the presence of a descending stem in the scribe's exemplar. This in turn would imply that the standard interpretation of paired semibreves in the *Ars Antiqua* notated version of this piece was understood as trochaic, and the switch to a less common iambic rhythm needed to be explicitly indicated with the descending stem.<sup>29</sup>

Table 3 Some Ars Nova motets in perfect tempus

Title	Date	Source
<i>Li enseignement / De touz</i>	n.d.	<b>Trem, Iv, Fribourg</b>
<i>Douce / Garison</i>	n.d.	<b>Trem, Iv</b>
<i>Mater / Gaude</i>	n.d.	<b>Br, Koblenz</b>
<i>Petre / Lugentium</i>	end 1342	<b>Iv, Aachen</b>
<i>Zolomina / Nazarea</i>	n.d.	<b>Trem, Iv, Barc853, Pn2444</b> (catchword only)
<i>Mon chant / Qui</i>	after 1337	<b>Trem, Iv, Durham</b>
<i>Almifonis / Rosa</i>	n.d.	<b>Trem, Iv, Cortona1</b>
<i>Apta / Flos</i>	n.d.	<b>Trem, Iv, Durham, Cambrai, Chantilly, ModA, SL</b>

Ex.2 Opening of *Douce / Garison*, triplum, breves 1–18 (transcribed from **Iv**, fol.23v)

In the **Koblenz** version of this motetus (the triplum is not extant in **Koblenz**), all two-note configurations, notated as two single note shapes (breve–semibreve) in **Br**, are here notated as two-note *cum opposita proprietate* ligatures, representing a pair of semibreves sung melismatically. Given that these two-note figurations in the motetus are always melismatic, it seems likely that the **Koblenz** scribe is directly copying the exemplar here, and that it was the initiative of the **Br** scribe to replace this type of ligature systematically with two single note shapes.<sup>30</sup>

The most interesting aspect of the **Koblenz** version is the treatment of three-note melismas, notated with a figuration known as a *conjunctura*, consisting of closely spaced semibreves, most often descending, and sung to a single syllable. At first, the **Koblenz** scribe notated these as a single semibreve with a descending stem followed by two semibreves with ascending stems (♣ ♣ ♣). Subsequently, however, the **Koblenz** scribe erased all the ascending and descending stems from these three-semibreve groups. This is clearly evident from the gaps in the red staff lines where the stems had originally been drawn (see *illus. 7*, highlighted with boxes).

The likely explanation for these divergences in notation described above between **Br** and **Koblenz** is that the original exemplar for this motetus part had the two-semibreve melismas notated as two-note *cum opposita proprietate* ligatures, and all the other melismatic figurations notated as three- or four-note *conjuncturae* (that is, all the melismas were notated either with ligatures or with *conjuncturae*, and not with single note shapes). It is also possible that the three-note *conjuncturae* in the exemplar had descending stems on the first lozenge, exactly as found in **Fauv**'s three-semibreve groups, since this supposition best explains the erasures in **Koblenz**. The updating process of the **Koblenz** scribe may be summarized as follows:

1. In order to translate the semibreve groups which were originally undifferentiated into a notation that more specifically distinguished their shorter notes, the **Koblenz** scribe added minim stems on the second lozenge of each four-semibreve grouping (♣ ♣ ♣ ♣), and on the second and third semibreve of each three-semibreve grouping (♣ ♣ ♣).<sup>31</sup>
2. Later he erased the ascending stems from the three-semibreve groupings, and while he was at it, also erased any descending stems, thus rendering a more standardized notation of three equal semibreves in





Gau- de vir- go ma-ter chris- ti om- ni frau- de ne- sci- a

5 Beginning of motetus of *Mater / Gaude*, followed by a transcription of the Ars Nova notation into 'Fauv- like' notation (**Br**, *recto*) (photo: Bibliothèque Royale, Brussels)



Nul- la de- sit gra- ti- a

6 Excerpt from motetus of *Mater / Gaude*, followed by a transcription of the mensural notation into 'Fauv-like' notation (**Br**, *recto*) (photo: Bibliothèque Royale, Brussels)



7 Excerpt from motetus of *Mater / Gaude* from **Koblenz** (*recto*), showing the erased stems highlighted with boxes

perfect tempus (i.e. notationally undifferentiated, as found in **Br**).

3. He left the two-note *cum opposita proprietate* ligatures as they were found in the exemplar, although, given the clues provided by **Br**'s updating, it is possible that they were performed with a trochaic (rather than iambic) rhythm.

As for **Br**'s updating, the scribe did the following:

1. Added minim stems to the second lozenge of each four-semibreve grouping (••••).

2. Left the three-semibreve *conjuncturae* exactly as found in the exemplar (or if the descending stem on the first lozenge was present in the exemplar, **Br** omitted these).
3. Translated all the two-note *cum opposita proprietate* ligatures into single note shapes (an imperfect breve followed by the solitary semibreve).

Both scribes omitted the dots of division, except for the two dots that the **Br** scribe retained (the second of which is completely unnecessary since a breve follows),<sup>32</sup> although it appears that the **Koblenz** scribe inserted the first dot but then later erased it (see the erased staff line directly before the paired semibreves above the word 'desit' in *illus. 7*).

### 'Ars Nova' motets

If this line of enquiry has shown that the notation of certain motets in the Ars Nova repertory reveals them to have been conceived in an earlier phase of notational practice, is the reverse also true? In other words, once composers began to think in Ars Nova notation, and purposefully conceive compositions with the potentialities of Ars Nova notation in mind, can aspects of a motet's notation be detected that indicate that it could *only* have been composed using Ars Nova notation?<sup>33</sup> If this were true, it would potentially allow us to draw conclusions about the chronology and dating of particular pieces, and to revisit broader questions about both the chronology of the Ars Nova as a whole, and how notational change itself can engender stylistic change.

Vitry's *Douce / Garison*, for example, was most likely composed in Ars Nova notation. Cited as a music example in a number of Ars Nova theory treatises, it was singled out as an example of 'partly perfect, partly imperfect' tempus and 'modus also' (*Tempus partim perfectum et partim imperfectum et modus etiam continetur in GARISON*).<sup>34</sup> The motet is also noteworthy for its use of mensuration signs to indicate changes of tempus (Ars Nova theorists commented on this aspect too). These changes in tempus are tricky—the singers of the two upper parts have to switch rapidly between singing a binary breve and a ternary breve (see breves 12–14 in *ex. 2*), while the modus also switches from perfect to imperfect (through the use of red notation in the tenor). Similar oscillations between perfect and imperfect tempus are found in *Zolomina / Nazarea*

and specifically signalled with mensuration signs in both its sources (**Iv** and **BarcA**). Fleeting changes of tempus are also characteristic of a third **Table 3** motet, *Almifonis / Rosa*, and are there indicated by coloration in the tenor.

Yolanda Plumley has recently dated the **Table 3** motet *Mon chant / Qui* to after 1337, since it contains citations of two ballades from Le Mote's *Li Regret Guillaume* (his *Ballade de Mesure* and the *Ballade d'Entendement*), written in honour of Guillaume I, Count of Hainaut (the father of Philippa of Hainaut), who died in 1337.<sup>35</sup> This motet was well known within the theoretical tradition, being cited in two central Ars Nova treatises.<sup>36</sup> One other motet in **Table 3** has been securely dated—Vitry's *Petre / Lugentium*, composed between 24 December 1342 and 5 January 1343.<sup>37</sup> Above I proposed that the **Table 3** motet *Mater / Gaude*, in addition to the imperfect tempus motets *Colla / Bona* and *Amer / Durement*, were conceived in an Ars Antiqua notation similar to the **Fauv** motets. Thus, they were likely composed before these two securely dated motets, that is, *before* the Ars Nova notation that the dated motets were conceived in was codified. On the other hand, *Douce / Garison*, *Zolomina / Nazarea* and *Almifonis / Rosa*, given that they exploit possibilities that Ars Nova notation enabled, were probably composed at roughly the same time as, or perhaps just slightly before, these two dated motets. The remaining **Table 3** perfect tempus motets—*Li enseignement / De touz* and *Apta / Flos*—given their even more innovative techniques of minor prolation, partial imperfection and sustained passages of syncopation, can probably be dated on the other side of *Mon chant / Qui* and *Petre / Lugentium*.

The Ars Nova, considered here as a development in notational technique, prompted first by a need for clarification of semibreve ambiguities, but which subsequently enabled new stylistic possibilities, is exemplified in motets like *Douce / Garison*, *Zolomina / Nazarea*, *Mon chant / Qui* and *Petre / Lugentium*. But it can also be traced in the activity of the various scribes who began to transcribe older motets into the modern notation, as evidenced by *Colla / Bona*, *Mater / Gaude* and the **Fauv** motets that survive in later manuscripts in an updated notation. It is significant, I think, that the three manuscript sources that retain traces of the original Ars

Antiqua notation of these 'Ars Nova' motets are all *rotuli* (**Wroclaw**, **Pic**, **Br**). By the time Ars Nova motets had achieved 'classic' status in the repertory, and thus were being copied into more permanent manuscript anthologies, such as **Iv** and **Trem**, Ars Nova notation was fully established.

My examination of motet notation in this article suggests that Jacobus was acquainted with the activities of scribes like those of **Br** or of **Koblenz**, who were involved in updating motets into Ars Nova notation. This would have made no sense to him, since the original notation was sufficiently clear for Jacobus. Jacobus's criticisms of the solitary semibreve were—I propose—not so much in response to motets like *Mater / Gaude*, as it was originally notated, but were formulated in response to the updated versions of such motets, and to motets like *Douce / Garison* composed in perfect tempus and originally conceived with solitary semibreves. These must have been the sorts of motets Jacobus knew. The key point is that (whether or not there was previously ambiguity in post-Franconian notations about whether a breve was divisible in performance into two or three equal units) Jacobus vociferously opposed the notational and terminological advances that fixed the distinction between the perfect and imperfect tempus, that is, the representation of the pattern long–short within the subdivided tempus as breve–semibreve, and the imputation that this breve was 'imperfected' by this *solitary semibreve*.

This activity, then—the updating of older motets into Ars Nova notation, the composition of new motets in Ars Nova notation, and the critiques of Jacobus—probably began quite a bit later than the copying date of **Fauv**, and continued over a number of years. This investigation has important implications for the chronology of the Ars Nova, suggesting that, instead of being regarded as a development of the late 1310s and synchronous with the copying of **Fauv**, its emergence is more plausibly located in the 1330s, and probably continued into the early 1340s, which accords with the account of a contemporaneous theorist, Heinrich Eger von Kalkar (*fl.*1355). Heinrich's description of a group of students and teachers of the liberal arts at the University of Paris (he calls them 'artista'), whose names were listed in the motet *Apollonis / Zodiacus*, and who around the year 1330 dedicated

themselves to devising notational rules for the accurate measurement of musical time, fits well with the evolving approaches towards the notation of smaller values (semibreves and minims) and the systematization of imperfect and perfect tempus explored in this article.<sup>38</sup>

### Manuscript sigla

<b>BarcA</b>	Barcelona, Biblioteca Nacional de Catalunya/Biblioteca Central, Ms. BM 853
<b>BnF 7378a</b>	Paris, Bibliothèque Nationale de France, lat. 7378A
<b>BnF 14741</b>	Paris, Bibliothèque Nationale de France, lat. 14741
<b>BnF 15128</b>	Paris, Bibliothèque Nationale de France, lat. 15128
<b>Br</b>	Brussels, Bibliothèque Royale de Belgique, Ms. 19606
<b>Cambrai</b>	Cambrai, Médiathèque d'agglomération (formerly: Bibliothèque Municipale), B 1328
<b>Erfurt 8° 94</b>	Erfurt, Wissenschaftliche Allgemeinbibliothek), Ms. 8° 94
<b>Iv</b>	Ivrea, Biblioteca capitolare, Ms. 115
<b>Koblenz</b>	Koblenz, Landeshauptarchiv, Best. 701 Nr. 243
<b>Mo</b>	Montpellier, Bibliothèque Interuniversitaire, Bibliothèque Universitaire de médecine, H. 196
<b>Pic</b>	Paris, Bibliothèque Nationale de France, Collection de Picardie, 67
<b>Pn 571</b>	Paris, Bibliothèque Nationale de France, fr. 571
<b>Trem</b>	Paris, Bibliothèque Nationale de France nouvelle acquisition française 23190, 'Trémoille'
<b>Tu</b>	Turin, Biblioteca Reale, Vari 42 (formerly part of E. x. 73/ H. 59)
<b>Vat 307</b>	Rome, Biblioteca Apostolica Vaticana, Barb. lat. 307
<b>Wrocław</b>	Wrocław, Biblioteka Uniwersytecka, Ak 1955/KN 195

### APPENDIX

List of motets considered in this study (see n.4)

*Almifonis / Rosa*  
*Aman / Heu*  
*Amer / Durement*  
*Apollinis / Zodiacum*  
*Apta / Flos*  
*Colla / Bona*  
*Cum statua / Hugo*  
*Detractor / Qui secuntur*  
*Douce / Garison*  
*Facilius / Alieni*  
*Firmissime / Adesto*  
*Floret / Florens*  
*Flos / Celsa*  
*Fortune / Ma douleur*  
*Garrit / In nova*  
*Gaude / Mater*  
*In virtute / Decens*  
*Inflammatis / Sicut*  
*Je commence / Et se je serai*  
*Je voi / Fauvel nous*  
*L'amoureuse / En l'estat*  
*La mesnie / J'ai fait novelement*  
*Li enseignement / De touz*  
*Mon chant / Qui*  
*Nulla / Plange*  
*O canenda / Rex*  
*Orbis / Vos pastores*  
*Portio / Ida capillorum*  
*Post missarum / Post misse*  
*Scariotis / Iure*  
*Se cuers / Rex*  
*Se grace / Cum venerint*  
*Se paour / Diex*  
*Servant / O Philippe*  
*Super / Presidentes*  
*Trahunt / Ve qui gregi*  
*Tribum / Quoniam*  
*Tuba / In arboris*  
*Vos / Gratissima*

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1 *Jacobi Leodiensis Speculum musicae*, ed. R. Bragard, Corpus Scriptorum de Musica 3 (Rome, 1955–73), vii.37, pp.75–6 (hereafter *SM*). An English translation of book 7 is now available: Jacobus de Ispania, *The mirror of music book the seventh*, trans. R. C. Wegman (Lexington, KY, 2017). Jacobus also offers the argument that the notation of polyphony is derived from plainchant notation, and in plainchant one never finds single lozenge-shaped notes (*SM* vii.37, p.75).

2 *SM* vii.37, p.74.

3 *SM* vii.17, p.38.

4 Prolation-level (i.e. semibreve–minim) relationships do not appear to have been fully worked out at the time of Jacobus’s writing. Jacobus does not mention the term ‘prolatio’, and book 7 concentrates on the modus and tempus relationships of the Ars Nova. Prolation-level relationships were not the first concern of Ars Nova theory treatises in the Vitriacan tradition: in the section of these texts that outlines modus and tempus relationships, only the **BnF 14741** version gives examples for prolation, apparently a later addition. See K. Desmond, ‘Did Vitry write an *Ars vetus et nova*?’, *Journal of Musicology*, xxxii (2015), pp.441–93, at pp.476–7. In order to focus on a representative repertory of motets composed before c.1350, I chose a group comprised of the newer motets of **Fauv** (those with groups of three or more semibreves set syllabically), the motets of **Br**, and those motets copied in both **Iv** and **Trem** (a full list of these motets is given in the Appendix, and a list of manuscript abbreviations is given at the end of the article). Some significant works, such as Vitry’s *Petre / Lugentium* and *Impudenter / Virtutibus*, are not on in this list (since they were not copied in **Trem**), but their notation, insofar as manuscript images are available, was also considered. A systematic evaluation of the notation of Machaut’s motets was not undertaken for the purposes of this study, although since 20 Machaut motets were likely composed before 1350, some references to them are included below. That prolation-level relationships were not worked out until later is also evident from the

Appendix repertory, of which only one motet—*Portio / Ida*—contains pairs of minims intended to be interpreted iambically (*Petre / Lugentium* also has pairs of minims in iambic patterns), and just *Li enseignement / De touz and Post missarum / Post misse* are in minor prolation.

5 Perhaps Jacobus only encountered this newer notation in theoretical writings; however, his multiple criticisms of modern singers and modern motets in *SM* suggests that he was also acquainted with the Ars Nova as a musical repertory and not just as theory. For Jacobus’s references to practice, see, for example: *SM* vii.9, p.23; vii.10, p.25; vii.23, p.50; and vii.48, pp.94–5.

6 On the dating of **Fauv**, see *Le Roman de Fauvel in the edition of Mesire Chaillou de Pesstain: a reproduction in facsimile of the complete manuscript*, Paris, Bibliothèque nationale, fonds français 146, introduction by F. Avril, N. Freeman Regalado and E. H. Roesner, ed. E. H. Roesner *et al.* (New York, 1990), p.49.

7 Technically, solitary semibreves could have been found within compositions in imperfect tempus that contain syncopated patterns such as semibreve–breve–semibreve, although this pattern is rarely found in the repertory of Ars Nova motets in imperfect tempus considered for this study: one example is in the beginning of the motetus of *In virtute / Decens* (breves 2–4).

8 Franco de Colonia, *Ars cantus mensurabilis*, ed. G. Reaney and A. Gilles, Corpus Scriptorum de Musica 18 ([Dallas], 1974), p.123.

9 See Table 3 for the short list of motets unambiguously notated in perfect tempus.

10 That more than three semibreves could be placed for a breve was noted by the author of the Faenza anonymous treatise, who hews closely to Franco’s notational theories, but who notes that anywhere from four to nine semibreves can be placed for one breve, giving the example of the motet *Aucun ont trouvé / Lonc tans / ANNUNTIANTES* (even though this motet only contains up to seven semibreves per breve). See (the third text of) *Petrus Picardus, Ars*

*motetorum compilata breviter*, ed. F. A. Gallo; *Anonymus, Ars musicae mensurabilis secundum Franconem* (*Mss. Paris, Bibl. Nat., lat. 15129; Uppsala, Universiteitsbibl., c 55*), ed. G. Reaney and A. Gilles; *Anonymus, Compendium musicae mensurabilis artis antiquae* (*Ms. Faenza, Biblioteca Comunale 117*), ed. F. A. Gallo, Corpus Scriptorum de Musica 15 ([Rome], 1971), pp.66–72, at p.68. For a recent comprehensive discussion of the use of this music example in early 14th-century music theory (by Jacobus, Robertus de Handlo and the Barcelona Ars Nova treatise), see M. Bent, *Jacobus de Ispania, author of the ‘Speculum musicae’* (Farnham, 2015), pp.21–32.

11 The theoretical treatises that outline patterns for unsigned semibreves and discuss the ‘signing’ of semibreves with stems emanate from the Vitriacan theoretical tradition; on the complex network of manuscript sources and treatises that comprise this tradition, see S. Fuller, ‘A phantom treatise of the fourteenth century? The *Ars nova*’, *Journal of musicology*, iv (1985), pp.23–50, and Desmond, ‘Did Vitry write an *Ars vetus et nova*?’. Five witnesses to the Vitriacan tradition outline the patterns for undifferentiated semibreves: the version of Vitry’s *Ars nova* transmitted in the manuscript **Vat 307**, see (first treatise of) *Philippi de Vitriaco Ars nova*, ed. G. Reaney, A. Gilles and J. Maillard, Corpus Scriptorum de Musica 8 ([Rome], 1964), pp.23–31 (hereafter *Rvat307*), at pp.23–4 and pp.29–31; two anonymous treatises copied in **BnF lat. 15128**, the first edited in *Philippi de Vitriaco Ars nova*, pp.84–93 (hereafter *CS3anon3*), at pp.89–92, see (second treatise of) *Anonymus, De valore notularum tam veteris quam novae artis* (*Ms. Paris, Bibl. Nat., lat. 15128*). *Anonymus, Compendium musicae mensurabilis tam veteris quam novae artis* (*Ms. Paris, Bibl. Nat., lat. 15128*). *Anonymus, De diversis maneriebus in musica mensurabili* (*Ms. Saint-Dié, Bibl. Municipale 42*), ed. G. Reaney, Corpus Scriptorum de Musica 30 (Neuhausen-Stuttgart, 1982), pp.33–41 (hereafter *CS3anon4*), at pp.37–40; an anonymous treatise in **Vat 307** (fols.21r–27r) by an author known



as Ps.-Theodonus, see (first treatise of) *Anonymus: De musica mensurabili*; *Anonymus: De semibrevis caudatis*, ed. C. Sweeney and A. Gilles, *Corpus Scriptorum de Musica* 13 ([Dallas], 1971), pp.29–56 (hereafter *Ps.-Theodonus*), at pp.42–3; and another anonymous treatise copied in Erfurt and edited in J. Wolf, ‘Ein anonymes Musiktraktat aus der ersten Zeit der “Ars Nova”’, *Kirchenmusikalisches Jahrbuch*, xxi (1908), pp.34–8 (hereafter *Wolfanon3*), at p.35. The references to the ‘signing’ of semibreves are in *Rvat307* (pp.23–4 and pp.29–30), *CS3anon3* (pp.89–92), *CS3anon4* (p.39). It should be noted that all the manuscripts containing these treatises date from c.1350 or later, and thus are at some remove from any of the extant music manuscripts that transmit this sort of notation. For discussion of a long passage at *SM* vii.34, p.66, that appears to refer to an argument between the moderns as to whether such ‘signs’ were helpful or not, see K. Desmond, *Music and the moderni, 1300–1350: the ars nova in theory and practice* (Cambridge, 2018), pp.138–40.

12 For the dating of **Pn571**, see A. Wathey, ‘The marriage of Edward III and the transmission of French motets to England’, *Journal of the American Musicological Society*, xlv (1992), pp.1–29, at p.14. On the dating of **Br**, see K. Kügle, ‘Two abbots and a rotulus: new light on Brussels 19606’, in ‘*Quomodo cantabimus canticum?*’ *Studies in honor of Edward Roesner*, ed. R. C. Mueller, J. Nádas and G. Ilntchi (Madison, WI, 2008), pp.143–82.

13 *Le Roman de Fauvel*, ed. Roesner, p.33, who also cautioned that the meaning of the downstem could vary according to source and palaeographic tradition.

14 The Italian theorist Marchettus of Padua, writing some time between 1318 and 1324, notes the popularity of *senaria imperfecta* (imperfect tempus) among the French. Marchettus da Padova, *Pomerium arte musicae mensuratae*, ed. G. Vecchi, *Corpus Scriptorum de Musica* 6 (Rome, 1961), p.151. The popularity of this mensuration is also confirmed by the later transmission of **Fauv** motets,

where they are notated in *Ars Nova* notation in imperfect tempus. In addition, Jacobus also says that the moderns use more imperfect than perfect mensurations (*SM* 7.45, p.87).

15 I see no reason why certain **Fauv** motets, like *Je voi / Fauvel nous* for example, whose notation and rhythmic patterning looks no different from that of many three-voice motets in *Ars Antiqua* sources (apart from the occasional four-semibreve melisma), could not be interpreted as ternary-breve compositions. On Schrade’s interpretation of all the **Fauv** motets as composed in imperfect tempus, see *Le Roman de Fauvel*, ed. Roesner, pp.34–5.

16 Jacobus uses the term *semibrevis minima* frequently (vii.17, p.36; vii.20, p.44; vii.24, p.52; vii.33, p.65; vii.34, p.66, p.69; vii.35, p.72; vii.48, p.77) to represent semibreves that are shorter than the Francoian *semibrevis minor*. *Semibrevis minima* is the name given to the shortest note duration in one of Johannes de Muris’s lists of note names in his *Notitia*. See *Johannis de Muris Notitia artis musicae et Compendium musicae*. *Petrus de Sancto Dionysio Tractatus de musica*, ed. U. Michels, *Corpus Scriptorum de Musica* 17 ([Dallas], 1972), p.78.

17 This lack of precision with respect to the short notes that comprise the Francoian *semibrevis minor* reflects how the relative durations are actually described in one of the early Vitriacan *Ars Nova* witnesses to the unsigned semibreve patterns: *Wolfanon3* simply says in patterns of more than three semibreves per breve, two semibreves can take the place of a single *semibrevis minor*, without further specifying the relative durations of these two semibreves. In other Vitriacan *Ars Nova* witnesses, the two semibreves that take the place of one *semibrevis minor* are described as rendering a trochaic pattern (♩): in *Ars Nova* terminology, an imperfect semibreve followed by a minim. The term ‘*semibrevis minima*’ is not used in any of the Vitriacan witnesses to describe these note values shorter than Franco’s *semibrevis minor*, for these treatises all use the *Ars Nova*

terminology that had become current at the time these treatises were copied, but Jacobus quotes from an unidentified theorist who appears to favour the **Fauv** style of notation and who listed the varieties of semibreves as ‘semibreves maiores, minores et minimas’, that is, *semibrevis maior*, *semibrevis minor* and *semibrevis minima* (*SM* vii.34, p.66; and see also Desmond, *Music and the moderni*, p.139, for a discussion of this passage).

18 In *Garrit / In nova* the pitch of each first semibreve of a two-semibreve group with a descending stem is the same pitch as the breve that immediately precedes this semibreve. The breve and the descending-stemmed semibreve are always written close together suggesting that these notes may have been sung as tied notes.

19 If we interpret a group of four semibreves in a binary-breve mensuration, as simply two minor semibreves that are further subdivided into two shorter notes (as the *Wolfanon3* does), the notation of these four-semibreve groups with four upward stems in **Pn571** makes perfect sense—that is, the upward stem denotes the quality of shortness that is characteristic of all four notes, and not just the second and fourth, as we find in *Ars Nova* sources that would notate this pattern as S M S M). In addition, these groups of four lozenge notes with upward stems further reinforce the reading of *Detractor / Qui secuntur* as a binary-breve composition.

20 There is one instance of a group of five semibreves with a descending stem in *Servant / O Philippe (Le Roman de Fauvel)*, ed. Roesner, p.33 n.97).

21 Willi Apel did suggest that *Garrit / In nova* was in perfect tempus, even though this motet is notated in **Pic** in imperfect tempus. W. Apel, *The notation of polyphonic music 900–1600* (Oxford, 1941), pp.335–6. It is possible (see n.8), however, that the descending stems in the two-semibreve groups in both *Garrit / In nova* and *Trahunt / Ve qui gregi* were used to indicate tied notes. The ubiquity of the unsigned three-semibreve group favours a ternary-breve interpretation

for *Trahunt* / *Ve qui gregi*. Deciding the mensuration of *Aman* / *Heu* is difficult, since it is a *unicum* in **Fauv**.  
 22 Both *Firmissime* / *Adesto* and *Tribum* / *Quoniam* have several concordances in *Ars Nova* notation notated in imperfect *tempus*.  
 23 *Servant* / *O Philippe* is also identified by signature as being measured by a binary breve.  
 24 R. Hoppin, 'Some remarks a propos of Pic', *Revue belge de Musicologie/Belgisch Tijdschrift voor Muziekwetenschap*, x (1956), pp.105–11, at p.106.  
 25 For the attribution of *Amer* / *Durement* to Vitry, see K. Kügle, *The manuscript Ivrea, Biblioteca Capitolare 115: studies in the transmission and composition of Ars Nova polyphony*, Wissenschaftliche Abhandlungen 69 (Ottawa, 1997), p.138.  
 26 Except in rare cases of syncopation; see above n.7.  
 27 The diminution section of *Tuba* / *In arboris* has (very) short passages of perfect tempus in the tenor, which are indicated with red ink.  
 28 Eight Machaut motets could be added to this list.  
 29 In *Ars Nova* notation paired semibreves in the place of one breve in perfect tempus would always render an iambic rhythm.  
 30 There are also many plicas in the **Koblenz** version (similar to the frequent use of plicas in **Fauv**): these plicas are not found in the **Br** version.  
 31 One four-note grouping has a minim stem on the third note, and there is one five-note group (with minim stems on notes two, three and four).  
 32 The triplum part of *Mater* / *Gaude* in **Br** does have some dots, but these are mostly dots of perfection that indicate perfect breves.  
 33 Consideration of the notation of rests is outside of the scope of the article, though it should be noted that hockets at semibreve-minim level (i.e. with minim rests) could not be notated in a '**Fauv**-like' notation.

34 The Vitriacan witnesses that cite *Douce* / *Garison* are the **BnF 7378a** witness, also edited in *Philippi de Vitriaco Ars nova* (pp.66, 69), and in *Rvat307* and the **BnF 14741** witnesses in the same volume (pp.26, 27), and also in *Ps.-Theodonius, De mensurabili musica*, ed. Sweeney, p.43.  
 35 Y. Plumley, *The art of grafted song: citation and allusion in the age of Machaut* (Oxford, 2013), pp.231–9.  
 36 In the witness of **BnF lat. 14741**, *Philippi de Vitriaco Ars nova*, p.32, and in *Wolfanon3*, ed. Wolf, p.37.  
 37 See A. Wathey, 'The motets of Philippe de Vitry and the fourteenth-century renaissance', *Early Music History*, xii (1993), p.134.  
 38 'certain great artists in Paris, whose names were placed within a particular discant, which begins 'Zodiacus' ... that is, around the year 1330 they specifically dedicated themselves to the correct measurements of music's *tempora* [and] regulating it under square and quadrangular notes, single and ligated noteshapes and rests' (*quidam magni artistae Parisius, quorum nomina in quodam discantu ponuntur, qui incipit 'Zodiacus' ... circa annum videlicet Domini millesimum trecentisimum tricesimum, specialiter dederunt se musicae certis mensuris temporum ipsam regulantes sub notis quadratis et quadrangulis, simplicibus et colligatis punctis etiam et pausis*). Henricus Eger von Kalkar, *Das Cantuagium des Heinrich Eger von Kalkar*, ed. H. Hüschen, Beiträge zur Rheinischen Musikgeschichte 2 (Cologne, 1952), pp.44–5. The passage is translated by G. Rico, 'Music in the arts faculty of Paris in the thirteenth and early fourteenth centuries' (DPhil diss., University of Oxford, 2005), p.232 n.147. Rico summarizes the list of musicians in *Apollinis / Zodiacum*: of them we know at least Johannes de Muris, Philippe de Vitry and Denis Legrant were active in Paris, and known to each other c.1330. For more on the emergence of the *Ars Nova* in the 1330s, and chronologies of the *Ars Nova*, see Desmond, *Music and the moderni*.

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