

CHAPTER 3

Nature's forge and mechanical production

Writing, reading and performing song*

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The forge was an important locus of 'making' in the Middle Ages, providing a metaphorical space for procreation, poetic creation, musical composition and – because of its coordinated production of sound – musical performance. That artistic creativity in various media is linked to a site of mechanical (if skilled) production usually involving several craftsmen, allows medieval creativity both to be seen as a collaborative practice and also to be inflected significantly by ideas of copying and imitation. Medieval song is thus a dynamic form that comes into full being only through a series of collaborative and performative processes that have their own implicit rhetoric and that are themselves subject to thematization and play within the corpus of composed works that have come down to us. This essay first explores the forge as a creative and performative space before examining one such thematization of the forging of song: Jacob Senleches' double balade, *Je me merveil/J'ay pluseurs fois*. The modern(ist) assumption of composers writing pieces that are then interpreted, realized or even merely executed by performers will be discarded in favour of viewing the musical trace as a series of more or less precise memorial *notae* from which trained singers invent a collaborative (simultaneous) performance. The modern concept of 'distributed cognition' will be used to describe this creative interaction of composer, notation, singers and memory, and to gain insight into the totality of the song's rhetoric.

MEMORY, THE FORGE, *INVENTIO* AND THE MECHANICAL

The image of artistic creativity taking place in a mint or a forge, through a mechanical process of stamping, minting or coining, has roots in late antiquity. In the Middle Ages it relies on the way in which natural procreation was already figured within the threefold hierarchy of creativity found in writers from Chalcidius to William of Conches. In this

hierarchy, only God truly creates; nature's laws carry on God's creation by producing more creatures, and human artistic creativity strives – ultimately in vain – to imitate nature. Nature is most commonly personified as God's sub-vicar, turning out creatures in a forge according to the divine plan, as, for example, in the work of the twelfth-century Chartrist, Alan of Lille.¹ Human art – usually synecdochically represented by poetry – is adulterate, third degree creativity, but is modelled on that of Nature and thus shares in the image of the forge as its locus of the creative act. Contrasting nature and art in his continuation of the *Roman de la Rose*, whose Lady Nature is heavily indebted to Alan of Lille's, Jean de Meun notes that Art takes Nature's 'coins' as her models but 'her understanding is so weak and bare that she cannot make living things, however natural they seem'.² Nevertheless, artistic creativity is something to be celebrated because, as Alan of Lille (citing Boethius) notes, 'of all things composed of matter and form only the human mind has ever been able to stamp names upon things as it willed'.³

Although it is figured as a mechanical process, artistic creativity was an intrinsically human activity. As Mary Carruthers has noted, medieval people do not 'have' ideas, they 'make' them, much as medieval workmen make things in their more literal forges, using machines as tools.⁴ *Memoria* serves as the machine for that creativity, for that part of memory called *inventio*.⁵ While it is viewed as mechanical and physical, the medieval art of memory is not about rote memorization, but is instead a compositional art involving things we might more readily term creativity and imagination. That is, memory is a machine for making images through mechanical reproduction without that meaning unthinking, rote memorization. The memory creates artistic products much as a forge stamps coins and in both cases this image of mechanical reproduction is ultimately human, collaborative and can go awry.

Although the mechanical and artificial might now be held to be antithetical to the human, for premodern societies machines were fully human: Augustine says that knowledge is itself a kind of machine. This brings ideas forged 'mechanically' from memory closer to what we would call 'cognition' since the process involves emotion, imagination and cogitation within recollection.⁶ Moreover, the making of cognitive pictures is not literally mimetic: the pictures that function as memorial *notae* do not literally copy the things they are of, but are rather a verbal-visual mix that can be as arbitrary as we would now consider the linguistic sign.⁷

It was not negative to see *inventio* as a mechanical process – a form of reproduction, and the human body itself was seen as a mechanism – not



in the materialist and secular eighteenth-century sense, but quite literally reflecting the ingenuity of design in God's creation.⁸ In music theory treatises, too, the whole human body – the natural instrument producing the sound of song – is sometimes referred to as a machine.⁹ In Alan of Lille's story, Nature's forge malfunctions thanks to the subministrations of a meddling Venus; like Nature's creative arena, the human forge, too, was always at risk of going wrong.

CREATION AND PROCREATION: THE MORAL AMBIGUITY
OF MEMORY

Since Nature's creativity is focused on producing the creatures of the sub-lunary world, it is a picture of *procreation*. Nature's law allows animals to mate and continue their species. In Latin, the sparks that fly from an anvil when struck by a hammer were referred to using the word 'seed' (*semina*), the same used for the 'spark of life', semen. This idea derives from neo-Platonic thought transmitted from late antiquity to the Middle Ages via epitomists and commentary writers. For example, Macrobius' fifth-century Commentary on the *Dream of Scipio* notes that 'Once the seed has been deposited in the mint where man is coined, nature immediately begins to work her skill upon it so that on the seventh day she causes a sack to form around the embryo, as thin in texture as the membrane that lies under the shell of an egg, enclosing the white.'¹⁰

When coining is an image of sonic or linguistic artistic expression, the image on the coin is a name. When coining figures Nature's sexual creativity, the images stamped on the creatures coined in Nature's forge are their faces, their identity and their lineage.¹¹ Active masculine hammers creating life with seeds produced from their contact with passive feminine anvils fitted medieval medical ideas of sexuality and gender roles perfectly.

Between the phallic hammer and the passive sounding-block of the anvil is desire (often symbolized in pictures of Nature's forge by heart-shaped bellows or blazing furnaces). In Alan of Lille's *Complaint of Nature*, Lady Nature explains how she trained Venus to help her in the process of forging God's creatures and how Venus contravened Nature's rules, pairing the wrong hammers with the wrong anvils and even hammers with hammers. Alan describes procreation using grammatical imagery, the grammar of hammers and anvils. In his extended metaphorical equivalence between human procreation and poetic creation, the process of production in both cases is dangerously open to lustful distraction.¹² He



implies that human art cannot convey truth in a way free from the influence of man's corrupting nature because human perversion is manifested in language as well as in sexuality.¹³

It is unsurprising that, like the machine for procreation, the machine for creation – memory – can also malfunction. Like other forms of mechanical reproduction, remembering can be led astray, it can be distracted. In mnemotechnical terms this does not lead necessarily to a failure of memory – to forgetting – but rather to its disorder, *curiositas*.¹⁴ This is not a disinterested Ciceronian curiosity for knowledge, but an ocular kind of fornication, Augustine's 'lust of the eyes'; for Thomas Aquinas it is opposed to intellectual study.¹⁵ Throughout the Middle Ages, singers are frequently urged to renounce this *curiositas*, which for them manifests itself in the pursuit of novelty, the over-elaboration of chant in performance, and the use of high pitches and excessively wide vocal ranges within a single melody.¹⁶ Such singers are accused of sexual impropriety, lasciviousness, or turning Lady Musica into a harlot. They fail to employ their human capacity for reason in favour of deploying an ability to perform that is completely ungrounded in theoretical understanding. They do not learn anything, but merely copy the outside effect of the music-making of others.¹⁷ One significant element in the theoretical foundations that such mere singers lack is symbolized by the forge itself. This is not Nature's forge, but one in which the proportions of musical consonance were discovered, by either a passing Pythagoras or the smith's biblical brother Jubal.

According to the neo-Platonists the rational principles of music were discovered by chance one day when Pythagoras was passing a blacksmith's shop. The sound of the smiths' different hammers striking in alternate and regular succession seemed to give musical intervals. Asking the men to swap hammers allowed Pythagoras to rule out the variables of speed or force of striking. He then recorded the weights of the hammers, eventually concluding that harmonious tones are produced according to a proportion of the weights: 6:8:9:12.

This story was reported by over a dozen classical authors and transmitted to the Middle Ages principally through the writings of Macrobius and Boethius. Certain writers rejected Pythagoras' pagan discovery in favour of a biblical one by Jubal (sometimes called Tubal), whose brother Tubalcain was a blacksmith.¹⁸ Some writers combined both stories, reasoning that Jubal got there first and that Pythagoras was just a post-diluvian Johnny-come-lately, rediscovering principles that had once been known.¹⁹

SENLECHES (& CO.) AS THE HAMMER OF THE AMATEUR

The forge is therefore not just a place in which Nature procreates and poets create, but is also a symbolic location for the origins of the true understanding of the fundamental principles of *musica*. In effect Lady Nature's forge producing creatures is also Lady Musica's forge producing songs. Such an inference is made in Guillaume de Machaut's *Remede de Fortune* (before c. 1356).²⁰ After attending a sumptuous dinner with his lady, the lover-protagonist chronicles the various forms of after-dinner relaxation offered to the guests. The very beautiful room ('chambre moult belle') to which the company retires contains musicians who are:

Milleurs assez et plus sciens
 En la vieus et nouvelle forge
 Que Musique qui les chans forge,
 Ne Orpheüs, qui si bien chanta
 Que tous ceaus d'enfer enchanta
 Par la douçour de son chanter.²¹

[better and more knowledgeable in the old and new forge than Music, who forges songs, or Orpheus, who sang so well that he enchanted all those in hell by the sweetness of his song.]

These musicians are better singers than Orpheus and better at forging music than Music herself. The published translation interprets 'forge' as a reference to the composition (writing) of music in contrast to the singers' singing of it. In modern musical practice we are used to composition and performance being distinct practices with different practitioners, one 'making' in notation (writing), the other 'making' in sound (performing). However, this division does not hold well for the Middle Ages, when the role of composer was a more specialized component of being a singer and when neither singing nor composition relied largely on notation. Yet in the late medieval context, newly available elaborate forms of music-writing played with their own possibility to prescribe practice, and with the ambiguity of creativity that song's written and sounding states enabled.²²

A verbatim performance from late medieval notation is not possible, because the notes underprescribe certain elements of the music (of the pitch content in particular). The placing of pitches on a heightened staff (a set of lines signifying relative pitches) seems to fix them, but the translation of this into sound cannot be achieved without a memory of the relative difference between the pitches that are represented.²³ The relative intervals of an individual singer's part will be adjusted further on account of the counterpoint of the sounding polyphonic whole. The realization

of these elements thus relies on the memory and education of the highly trained singer, who reads the arbitrary representation of sounds in graphic symbols – the memorial *notae* of musical notation. In a polyphonic song, the singers collaboratively invent the harmonies in performance, using a shared external memory (made up of written *notae*) that has been provided by a single individual (the composer). Only by remembering the sounds of particular intervals can the singer attempt to render his or her notation into sound. Only by responding to the sounds of the other singers (whose notated parts the individual singer cannot follow at the same time as his own) can the singer make decisions about the precise interval content of his or her own melody.

It is both because memory is a machine for making – for *inventio* – not a rote memorization of the thing made, and because writing is an external kind of memory, that the relationship between notation and its musical performance is similar to the relationship between human memory (the machine for *inventio*) and the rhetorical performances that it generates. In creating a written artifact – the notated music – the composer is merely providing something that provides a schedule for the initial performance and an external memory of the piece for later performances, which the singers (who probably included the composer in the earliest performances of most pieces of music in the Middle Ages) can use to invent (that is, to discover, to reveal or to find) the song again.

The poems of the double-texted song by the late-fourteenth-century harpist and composer Jacob de Senleches, *Je me merveil/J'ay plusieurs fois*, present two singers who deplore the state of contemporary music-making. Their shared refrain text – the moment of nodding verbal agreement between these two different voices singing at once – is presented as a canon (that is, the two upper voices effectively sing the same music as each other but with a small time lag between them). This highly 'composely' technique is accentuated in its written presentation by being hidden from view: the two voices use different-looking notations to signal these similar musical lines.

This song is a piece by a named composer, in a notational form that is highly intricate and thus presents itself as primarily a textual object, a work, and one whose performance has been read as referring involutely to its own being. The assumption of most modern commentators on this piece has been that it is concerned with composing music in the sense of making it in writing, criticizing less able composers, and maybe even critiquing the very same modern (notational and musical) style that it exemplifies itself.²⁴

The focus on composition and composers in musicology has historically tended to result in the elision of performers in favour of a discussion of notated works. Musicologists have even talked about the way in which the composer-centred work concept that seems to have been born around 1800 caused the performer to be viewed as the instrument of the composer, mechanically following the increasingly precise notations that the composer leaves behind. On account of modern perceptions of mechanism, the performer then becomes a lifeless mannequin, only animated by the work.²⁵ In part this is because the usual way in which we access music today presents performer-free sound, seemingly allowing unmediated communion with the music of the composer.²⁶ But musicology is not alone in such emphasis on authors and works. Even within the discipline of theatre studies – whose performers are at least visible even when recorded – a similar treatment of plays as texts (and I am thinking here particularly of the Shakespearean canon) and focus on authors have only relatively recently come under sustained critique. One must probably conclude that the author-centredness of the academy (made up, as it is, of writers) has historically been the chief cause of the relatively scant regard accorded to performers.

As will be discussed below, the early modern theatre in fact makes an interesting point of comparison for medieval song in several respects: it is a collaborative performance act whose ‘text’ certainly has an ‘author’ but whose performed ‘work’ is somewhat flexible. It is also presented in a notation whereby each performer sees only his own part and must rely on aural cues that suggest certain ‘movements’ (in theatre these are cues or stage directions contained in the dialogue; in music, these are the succession of intervals between each upper-part singer and the tenor).²⁷

Although writing is mentioned in the first stanza of Senleches’ cantus text, and the cue for the refrain’s ‘joke’ (see below) is based on very visual notational difference, any idea that the song voices only a *composer* (or composers) addressing amateur *composers* needs to be challenged. The central issue of this song seems, to me, to be more centrally the interplay between composer, notation and singers, especially when, as seems likely in this case, the medieval singers would have included the composer among their ranks.²⁸ The hammer and anvil of the musical forge are not pen and paper producing textual coin, but tongue and teeth, two parts of the natural instrument of a singer, producing the sound of coin being struck.²⁹ Senleches, like most music theorists who discuss these matters, most criticizes those who think they know about musical doctrine when they don’t, because learning is not just a matter for composers.

Far from criticizing his compositional rivals, Senleches' song addresses the relationship between forging a song in writing as a composer and forging a song in sound as a singer – a relationship mediated by notation – in a period when the memory was a machine for invention, the mechanical was positively human, and being someone's instrument was a culturally approved career choice. In short, I suggest that a song is less an object than a collaborative rhetorical process which binds the composer, notation, singers and listeners within a machine, whose workings – when going well – should mirror in sonic ratios those that medieval thinkers posited in the heavens.

FORGING SONG

In the earliest performances of this song it seems likely that the composer was also one of the singers. Unlike other songs of the period, there is no evidence that this song was widely distributed and perhaps it was never performed outside the composer's immediate circle.³⁰ The song is a double balade with three musical parts: it has a textless tenor part (probably sung wordlessly to a vowel, or perhaps played instrumentally) and two upper voices performed simultaneously, each setting a different three-stanza balade text but sharing the same refrain (the texts and translations are provided in Figure 3. 1).³¹ Both the singers of the texted upper voices despair of 'forging' and want to give it up, as the refrain text explains, 'because everyone is getting involved in forging' ['Puis que chascuns se melle de forger']. In the lower-pitched texted voice (functionally the 'contratenor' part) the speaker tells how he often used to make virelais and rondels for his own amusement, but now wants to stop completely 'because everyone is getting involved in forging'. The only person who ought to forge, he maintains, is someone with such an acute understanding that one only knows how to 'remake' [*refayre*] what such a person fashions.³² But instead everyone wants to go first, saying 'I know' in order to praise his own doings and to blame others in what they do, and so the speaker wearily concludes that he does not wish to get involved any more 'because everyone is getting involved in forging'. He reveals that some even go in secret to show their things to other people in order to get them properly finished [*pour par fayre*], although this is not done from good sense because such foolish wits have no clue whom to ask.

In the higher-pitched texted voice (functionally, the cantus), the speaker expresses his amazement at how often he sees someone who wants to get involved in copying [*contrefaire*] but fails to write the end or beginning

Cantus	Contraténor
<p>Je me merveil aucune fois comment Homme se vult meller de contrefaire Ce dont n'escrit fin ne commencement Et quanqu'il fait, raison est au contraire. Dorenavant voil ma forge deffaire: Englume ne mertell ne m'ont mestier Puis que chascuns se melle de forgier.</p>	<p>J'ay pluseurs fois pour mon esbatement, Ou temps passé, heù playsir de faire Un virelay de petit sentiment Ou un rondel qui [bien] a moy puist playre. Mais maintenant je me vueil tout quoy tayre Et moy lesier ester et reparer Puis que chascuns se melle de forgier.</p>
<p>C'est soctie par peu devisament, Car cël labour ne leur est necessaire; Je ne di pas pour celuy qui aprent Et qui connoist s'il seit bien ou mal faire: Celui doit on tenir a debonaire. Mais je ne vueil plus faire ce mestier Puis que chascuns se melle de forgier.</p>	<p>Forgier doit chilz qui son entendement A si agut c'on n'i sceit que refayre; Mais chascuns vult aler primierement Disant 'je sçay' pour loer son afayre Et pour autruy blasmer en son repaire. Si ne me vuel je plus enpeschier Puis que chascuns se melle de forgier.</p>
<p>Quant on leur dit leur vice evidentement, Qui cognoscent, se ne leur puet il plaire: Il respondent molt ourguelleusement, Disant que de doctrine n'ont que faire! Il doinent aus novuels fol exemplaire ... Pour ce farai soppes en un panier Puis que chascuns se melle de forgier.</p>	<p>Il en i a qui vont celeement Moustrer lour fais a autruy pour parfayre: Ce n'est pas fayt aseürement Ne de bon sens, se leur on doit desplayre, Mais fol cuidier ne sceit ou il repayre! Pour ce m'estuet bouter en un poillier Puis que chascuns se melle de forgier.</p>
<p>I am sometimes amazed how man wants to get involved in composing [contrefaire] that of which he does not write end or beginning, and all that he does, reason is contrary to it. From now on I want to dismantle [deffaire] my forge – neither anvil nor hammer have need of me, because everyone is getting involved in forging.</p>	<p>I have many times, for my own amusement in the past, had pleasure in making a virelai of modest feeling or a rondel which might please me well. But now I want to keep completely silent and leave myself be and go home, because everyone is getting involved in forging.</p>
<p>It takes little reckoning to know it is folly, because this labour is not necessary for them. I am not talking about someone who studies and who knows if he can do it well or badly: such a person one must deem good [debonaire]. But I do not want to do this business any longer, because everyone is getting involved in forging.</p>	<p>Only he should forge who has such acute understanding that the knowledge of everyone else is limited to copying [refayre] his example. But everyone wishes to go first saying 'I know' so as to praise his own business and to blame others in what they do. So I do not wish to get involved any more, because everyone is getting involved in forging.</p>
<p>When one tells them of their evident vice, which they know, although it cannot please them, they reply most proudly, saying that they have no doctrine other than doing it! They give newcomers a foolish example, which is why I shall make soup in a basket [i.e., be engaged in an enterprise doomed to failure], because everyone is getting involved in forging.</p>	<p>There are those who go secretly to show what they've done to others so as to complete them. This is not done with surety nor from good sense (although one might displease them), but a foolish wit does not know where to go. This is why I must knock it on the head,¹ because everyone is getting involved in forging.</p>
	<p>¹ The literal sense of the idiom here is obscure, but the meaning is clear.</p>

Figure 3.1 Texts and translations of Jacob Senleches' double balade,
Je me merveil / J'ay pluseurs fois.

and disregards reason in everything. He vows henceforth to dismantle his forge – neither anvil nor hammer has need of *him* ‘because everyone is getting involved in forging’. He implies that his own forging has involved a lot of labour for scant reward, labour these upstarts eschew. He specifically exempts from his critique those who put in the effort to learn good from bad, but denounces those who, when told of their errors, proudly reply that they have no training other than the very act of making songs (with this ‘making’ being unspecified as to whether it is through composing or singing).

Several of the terms here present problems of translation, but it is clear from the fact that the speaker of each poem himself forges in his forge and says that only the most acute understanding should attempt it, that ‘forge’ carries none of its modern associations of counterfeiting or duplicitously copying but rather signals – neutrally – the act of making, which can be done well or badly, with rational doctrine or without. But, like the forges of Nature (and Venus), or the machine of memory, the musical forge can become disordered if insufficient reason and understanding are exercised. The word ‘contrefaire’, similarly, is less negative than its modern equivalent, which is why I have not used the term ‘counterfeit’ in the translation. In this period it refers, as Stephen Perkinson has shown, to the copying of the outer appearance of a thing (rather than its inner essence).³³ While this might mean that the thing thus copied has the capacity to deceive, its fourteenth-century uses are closer to the idea of mindless (irrational) mimicking or mirroring than to the modern concept of duplicitous counterfeiting.³⁴ In music, the uses of the prefix ‘contra’ (Latin), ‘contre’ (French), or ‘counter’ (English) frequently imply not the faking of something, but rather something’s counterpart. This is the sense of the prefix in counterpoint (‘contrapunctus’) – a musical technique in which a note in one voice is placed against (that is, simultaneously, *and* in harmony, with) a note in another. This is also the sense of the contratenor voice part as it relates to the tenor. The ‘contratenor’ is not a specific voice type (it is usually in the same pitch range as the tenor and would thus similarly be sung by a tenor or baritone voice type), but a description of function.³⁵ With a different word separation, the first two lines of the cantus here could even be read as saying that ‘I often marvel how a man who wants to make a *contratenor part* [vuelt meller de contre faire] has not written the end or the beginning of it.’ This might even relate to the then—contemporary vogue for providing existing songs with new contratenor parts, some of which are certainly of a noticeably lesser (or at least ‘different’) quality to the arguably authorial parts for the piece and

thus could represent the work of the unlearned composers that the song lambasts.³⁶ The sense of 'contrefaire' is indicative of the fact that medieval creativity in this period was viewed as a continuum of productive incompleteness, with all texts effectively rewriting earlier texts.³⁷

FORGING IRONY?

The song's texts participate in an irony found in lyric repertoire from the troubadours to Machaut and beyond – the claim *in sung performance* that one is not going to make music any more.³⁸ The song's notational and compositional features lend authority to the speakers of its texts, whose two voices are so congruent that they seem to represent a composite single voice, that of 'the song's maker(s)' with an elision between the single maker represented by the composer and the several 'makers' who present the song sonically in performance. As a composed double balade, the song is already showing the forging of the speaker(s) of its text(s) to be highly accomplished. The way in which the song is written down adds to this attestation with the most central moment being the point where both voices have the same text – in the refrain.

The refrain, as already mentioned, is a musical canon – that is, the singers don't just sing the same text but one after another they sing the same music – giving the audible sense of a second singer copying or remaking the music of the first. However, the canon is notated differently in each voice, using different time signatures and various combinations of full black, full red, and void black note shapes: the two notations are visually distinct.³⁹ This has led modern critics to see the rhetorical force of the song being that, however much the singers of the refrain think they are doing their own thing (because their notations look different), they end up copying one another. This fact is opaque to the singers looking at the notation, but is revealed in sound to the listeners.⁴⁰ However, I think this interpretation rests on a number of misapprehensions. Only the second singer – the former maker of virelais and rondels who is now going to keep quiet – is actually copying; the first singer is a true author. Yet the two voices' complete texts are saying broadly the same thing, so it would be hard to maintain that the first voice is the true artist and the second voice is one of those criticized (by both voices) in the refrain. Moreover, in a three-stanza piece, the fact of the imitation would not remain hidden from the singers, who are also listeners (and indeed *have* to listen to each other in order to sing correctly). Nor, as I discussed above, are they specifically or centrally criticizing imitation or copying. Rather they

are disparaging a musical (that is, singing or composing) practice, whose practitioners lack understanding of their performance's theoretical basis, and blaming the misplaced pride of those who refuse to put in the mental work that making music (whether in writing or in performance) properly requires. The only possible mention of copying is in the second text, whose second stanza notes that those of acute enough understanding (the only people who ought to be allowed to forge) make such things that people in general don't know what to do with them short of remaking them. But even this is not direct copying but rather remaking [*refayre*], a creative process based on re-creation. Forging (that is, fashioning, or making) is simply what singers (and composers) do: at issue here is the ethical value of that action, based on the engagement not just of doing (*faire*) but doing with learning (*doctrine*). In short, this song enacts one of the basic discussions of music theory – the differentiation between mere *cantores* and true *musici* – in a text whose presiding metaphor obliquely makes reference to the locus of the discovery of music theory's basic tenets: the forge that revealed the rational basis of consonance.⁴¹ In effect, the *musici* who base practice on understanding can order their memories, whereas the *cantores* whose practice has no basis in theoretical understanding are doomed to the vice of *curiositas*.

Although the modern editions represent the refrain as if the different notations give precisely the same result, Anne Stone has suggested that the notational differences could be interpreted as creating a number of small sounding differences in the length of the notes.⁴² For those who see the meaning of the refrain as being bound up with a critique of imitation or copying, this adds a further layer of irony, since not only can these dunderheads only imitate but 'even their imitation is imperfect'.⁴³ Interpreting the rhythm in this way, the singer who goes second at first seems to rush to catch up, then corrects himself, then rushes again, corrects by holding a note a little longer, but not quite enough, and never quite manages to get his musical imitation exact. But nonetheless, the counterpoint works – the fabric of the music is stretched across its rhythmic frame, but not so much that it doesn't still hang together – and the voices finish the refrain together with the word 'forgier'.

Stone and Gilles Dulong speculate that the imitation's rhythmic inexactness forces the singers to depict the incompetence of the music writers being described by the poem. Forcing them to enact what they dispraise effectively shows the performers to be the mindless instrument of the composer. However, in my interpretation the song attests to the 'entendement ... si agut' of those who are not forced into slavish copying

but can introduce workable changes and create something new out of something old.⁴⁴ This goes not only for composers but also for singers who are making anew an already performed composition each time they sing it. And an inexact canonic refrain would not be incompetent imitation on at least two counts: first, because it would still work; and second, because the same inexact canon would be repeated exactly, three times, once for each of the three stanzas. In a strophic song, the triple repetition of this joke would make it clear that a *seemingly* cobbled together inexact canon – as if the singers are not quite getting an exact canon right – is exactly what is intended by both composer and singers. The inexact imitation in performance shows instead (once the listener works out what is going on) that the singers are not mindless imitators, just as the varied musical script for the two similar melodic lines shows that the composer is not a mere imitator either.

It thus becomes clear that the singers of this song – in so far as they may be identified with the sentiments they express in words and the reading practices they employ in making their melodies – view and project themselves as radically distinct from the people being criticized by the text that they are singing. Rather they are – as is more usual in the expression of first person lyric – identified prosopopoeically with the first person speakers of their texts, who are so appalled by the downgrading of reason and understanding in the practice of making music that they are not going to make it themselves any more. The congruent views of the two texts mark them as the double expression of a single voice, emblematic, perhaps, of the multivoiced making of the composer's composition that a polyphonic song-setting makes necessary. In traversing the gap between the notational memorial cues of the song's written trace and its sounding performance, the singers deploy the very rationality and understanding whose lack they deplore in other forgers of song.

MUSICAL NOTES AS MEMORIAL NOTAE

This notation cues more content than it actually represents, so that once any performance of this song finally stops, its sounds are lost. Sounds cannot be written down *per se*, and the cognitive link between their external representation (the musical notes) and the now faded performance is held collectively in several memories. The understanding required to re-enact the song is thus 'distributed' across the group rather than owned by a single person. For modern performances of this song, this fact is a problem. The very complexity of this song – its play with the role of distributed

cognition in its performative making – means the range of possible modern interpretations of the notation is far larger than that of most of its contemporaries. We are even less sure about the relative pitches, intervals, note lengths and durations here than in other songs of this period, even than in other songs by Senleches.⁴⁵ The memories of the singers who turn the music-writing of the composer into the music-making of their sonic performance are necessarily engaged in remembering a whole host of interactions in rehearsal, involving a number of decisions made together with the other singers, through discussion, doctrine, reason and understanding, none of which is represented directly in the notation.

The challenging nature of the notation in Senleches' song means that singers of the song cannot simply 'follow the instructions'; the musical notes are even more clearly closer to the nonlinguistic status of memorial *notae* than musical notation usually is; they point to what has to be remembered from the creation of the sonic product in performance. This is not just the case in the refrain. The notation as a whole cannot just be read off; it is rhythmically difficult and it requires the singers to realize, by sharpening or flattening certain pitches, a number of cadences that are deliberately deceptive. Each singer would have been performing not from a score where there was visual oversight of the entire musical piece, but from the individual line of a single part (whether visually present or imprinted in memory). In several places where the intelligent and experienced individual singer might expect that a certain kind of line is, given its contour, a cadence point, upon hearing the other two parts it proves not to be one. In rehearsal this would require a split-second adjustment, responding to the way in which hearing the musical whole confounds the expectations arising from reading one's own line. Perhaps these points would result in the singers stopping, (mentally) noting the problem, and repeating the phrase correctly; or perhaps the wrongly inflected phrase would be passed over, with the offending singer retrospectively acknowledging his error by some gesture.⁴⁶

Alternatively, the rhythmic complexity of the song sometimes delays a contrapuntal resolution in the other voices so that the opposite occurs: the resolutions are correct but just don't sound right to start with – the individual singer must 'stick to his guns' until the others fall into line. In some places the singer is faced with the choice of either not placing a cadence where one obviously should go given what he can hear in the other two parts, or making the cadence by singing an extremely irregular interval.⁴⁷ The various ways in which singers negotiated these decisions

depended on expert decision-making that was collaborative, flexibly hierarchical (with the tenor often having most control of the sonorities and, perhaps, with the composer having the most say overall),⁴⁸ and relied on external tools and representations (the visual aspect of the notation on the page or in memory, and the sound of the other voices).

So are we left thinking that this song, for all its cleverness, did its greatest cultural work in the rehearsal room? Did it serve only the social interaction of its singers? Is it just some kind of singers' in-joke? This certainly forms the central part of my argument, but this will only make us dismiss it if we introduce later categories of value, and import more modern performance situations and practices. Not much information about musical rehearsal in the Middle Ages can be gleaned directly from the sources but it is possible to posit early modern theatre as a useful comparison. As with early modern theatre, the composer of a medieval polyphonic song was often one of the performers; the performers worked principally from their own parts in isolation.⁴⁹ Simon Palfrey and Tiffany Stern have recently refocused the study of Shakespeare's plays through the fact of their having been originally copied into, learned from, and rehearsed using parts. The interaction of the individual players in rehearsal and performance then becomes something with which a seasoned playwright – especially one who is, as was usually the case, also himself an actor – can work and play. This collaborative nature of rehearsal and performance has also been investigated by Evelyn Tribble using the modern psychological concept of distributed cognition. This combination of a focus on the division of a single work into separate parts and the use of distributed cognition as a way of investigating the collaboration necessary for the re-presentation of the work as a whole provides a useful way of imagining the rehearsal and performance of a song like *Je me merveil/J'ay pluseurs fois*.⁵⁰

Analyses of expert thinking have traditionally focused on individual cognition, whereas those that foregrounded instead the social and environmental nature of cognition typically led to qualitative analyses of 'everyday thinking' (about mundane activities such as supermarket shopping, for example).⁵¹ Edwin Hutchins' study of maritime navigation on the USS *Palau*, by contrast, studied expert group cognition, thereby offering surprisingly close parallels to both the early modern theatre and, I would argue, medieval musical performance.⁵²

Distributed cognition typically involves a hierarchical structure of individuals, using external objects to represent things difficult to represent mentally, in a process that necessitates collaboration.⁵³ The

goal of analysis is to discover how 'distributed units are coordinated by analyzing the interactions between individuals, the representational media used, and the environment within which the activity takes place'.⁵⁴ Because the work in question involves more than a single toolless individual, the analysis involves a description of 'how mental activity is externalized into the world, as people create external representation to support their own activity or collaborative action' and, in its most rigorous use, a description of 'its application in elucidating the architecture of cognition, where the cognitive activity is not simply mentally represented'.⁵⁵

For the early modern theatre the tools, artifacts and practices are the playhouse, the so-called plots (single folio summaries of actors' entries), actors' roles, plays' verbal structure, the apprentice system and the organizational practices of companies. These things constrain as a way of enabling because a cognitively rich environment has an effect on the agent operating within that system. The example Tribble gives is the use of oversized buttons and levers in a nuclear power plant as a way of orienting the employees to 'maximize "situation awareness"'.⁵⁶ In this song by Senleches, the cognitive richness of the elaborate visual notation does exactly this – it maximizes the singers' aural awareness of the canon, of its inexactness (if Stone's attractive interpretation of the rhythms is right) and thereby of its composedness.

Tribble argues that the early modern theatre strategically underloads its actors' rote memories by having them work from parts with minimal cues.⁵⁷ Medieval music is similarly copied in parts, usually with no visual cues because the cues are given aurally in conjunction with the basic counterpoint training of the singers.⁵⁸ Working from theatrical cues means that actors have to listen to the other actors rather than just reading the other parts silently; in medieval songs, singers have to listen to the other singers because they can't see the whole musical framework in score and need to know the intervals their notes make with the tenor to sing their parts correctly. If actors listen to the other parts, much of the information they need is contained in what is in them.⁵⁹ This is no less true of medieval songs: the contrapuntal hierarchy means that the context of the tenor in relation to one's own part contains, if one listens, all the information required for realizing the interval content of one's underprescriptively notated part. Component parts are not fully determined by the whole system, but neither are they independent of it because some (but not all) of their characteristics are changed by interaction with the system; as Tribble says, 'good writing' in itself – that

is, writing which is designed to be highly memorable – provides the most effective ‘cognitive scaffold’.⁶⁰ It is this concept of good writing that Senleches plays with so thoroughly and so aptly given that his song deplores the *bad* writing (and singing) of others. His song’s notational play can only be experienced by those fluent in the distributed cognitive processes whose lack is the subject of the song texts’ critique. Accentuating the difficulties of these processes as a way of drawing attention to the expert status of the singers (and through them, the composer), lends weight to their censure of the bad song-making (composition and singing) of others.

The ‘fixed form’ of the balade provides the equivalent of the early modern theatre plot – a schematic diagram of the shape of the performance as a whole. The singers’ knowledge of pitch space and the conventions of movement within it (the making of correct progressions to perfect intervals by singing semitones in unusual places) enables them to realize the visual–spatial notation as audible–temporal music in much the same way as the space of the theatre and conventions of movement within *it* enable movement from a two-dimensional plot to a three-dimensional play. This kind of mechanism is a premodern one in which individual agency is directed, but not delimited, by these practices.⁶¹

The distance between the notation and its realization is the space in which creativity lives, not because the singers have to make anything up, nor necessarily because there is a huge difference between any two performances of the same piece. Instead, this gap allows the composer to play the singers as his instrument without that making them dehumanized; they become his machine, or the machine of him. In fact, if the composer is one of them, it effectively turns the performers into a corporate body – a social extension of the individual. This collective subjectivity fits with the fact that two singers voice two poems that seem to emanate from a single individual’s point of view and are unified in the very refrain that throws up all the issues of copying, following, notation and memory. In medieval terms the three-part medieval musical machine – the three singers of this song – mirrors in microcosm the harmony of the engine in the sky – the music of the spheres – thereby signifying the rational and divine basis of human life itself. And although the singers act as a medium – like the coin that is stamped with hammers in the forge – like coin, they are not just a medium, a means of equating or translating one thought from composing mind to listening mind, but become themselves a commodity with its own particular value.⁶²

NOTES

- * I would like to thank Mary Carruthers and Eric Clarke for their helpful comments on earlier drafts of this paper.
- 1 See, in particular, Alan of Lille, *The Complaint of Nature*, trans. J. Sheridan (Toronto: PIMS, 1980), 146; G. Economou, *The Goddess Natura in Medieval Literature* (University of Notre Dame Press, 2002), 84; and N. Häring, 'Alan of Lille, *De planctu Naturae*', *Studi medievali*, 3rd series, 19 (1978): 797–879, at 840.
 - 2 For the full passage, see Guillaume de Lorris and Jean de Meun: *Le Roman de la Rose*, ed. A. Strubel (Paris: Librairie Générale Française, 1992), lines 16,009–28; *The Romance of the Rose*, trans. F. Horgan (Oxford University Press, 1994), 247–8. See also Economou, *The Goddess Natura*, 106.
 - 3 'Ut testatur Boethius rebus ex materia formaque constantibus solus humanis animus extitit qui prout voluit nomina rebus inpressit', quoted in J. M. Ziolkowski, *Alan of Lille's Grammar of Sex: The Meaning of Grammar to a Twelfth-Century Intellectual* (Cambridge, MA: Medieval Academy of America, 1985), 28, citing P. Glorieux, 'La Somme "Quoniam homies" d'Alain de Lille', *Archives d'histoire doctrinale et littéraire du moyen âge* 28 (1953): 113–364, at 141. See also Hugh of St Victor, *Didascalicon*, I.9, which notes that the human work is 'only imitative of nature' and is thus 'fitly called mechanical, that is adulterate', like a 'skeleton key', but goes on to argue that human reason 'shines forth much more brilliantly' in inventing things, from which the 'infinite varieties of painting, weaving, carving, and founding have arisen, so that we look with wonder not at nature alone but at the artificer as well'. From *The Didascalicon of Hugh of St. Victor*, trans. J. Taylor, rev. edn. (New York: Columbia University Press, 1991), 55–6.
 - 4 M. Carruthers, *The Craft of Thought: Meditation, Rhetoric, and the Making of Images, 400–1200* (Cambridge University Press, 1998), 3–5.
 - 5 Personified as the mother of the Muses, Memory is 'at the beginning, as the matrix of invention for all human arts, of all human making, including the making of ideas'. As Carruthers (*Ibid.*, 7) notes, this story 'memorably encapsulates an assumption that memory and invention, or what we now call "creativity," if not exactly one, are the closest thing to it'. In their opening chapters, medieval music theory treatises usually follow Isidore of Seville (*Etymologiae*, III.15) in deriving *musica* from the Muses; the relation between music and Memory is thus theoretically explicit.
 - 6 Carruthers, *The Craft of Thought*, 22–3, 2.
 - 7 *Ibid.*, 2–5.
 - 8 As Carruthers (*Ibid.*, 7) says, 'In order to create, in order to think at all, human beings require some mental tool or machine, and that "machine" lives in the intricate networks of their own memory.'
 - 9 A treatise for singers from around 1300 deems it fitting that 'the Saviour of the world, three persons in one, should receive the triple gift of our observance: the heart must yearn, the mouth sound, and the whole mechanism [*machina*] of the body strive which so devoutly prays to the Lord in this way [i.e., through singing chant]. Anyone who thoroughly strives in his praying

with mind, voice and works is deservedly called a *citharista* in the Temple of the Lord.’ From *The Summa Musica: A Thirteenth-Century Manual for Singers*, ed. C. Page (Cambridge University Press, 1991), 59, 148–9. This division into thought, word and deed casts chant as a deed: singing is mechanical reproduction, but mechanical reproduction is an image of doing, of making, and thus of creativity.

- 10 Macrobius Ambrosius Theodosius, *Commentary on the Dream of Scipio*, trans. W. H. Stahl (New York: Columbia University Press, 1952), 112. *Commentarium in somnium Scipionis*, ed. Franciscus Eyssenhardt (Leipzig: Teubner, 1868), 498: ‘uerum semine semel intra formandi hominis monetam locato hoc primum artifex natura molitur ut die septimo folliculum genuinum circumdet humori ex membrana tam tenui qualis in ouo ab exteriori testa clauditur et intra se claudit liquorem’.
- 11 This Aristotelian idea is frequent in medical and physiological treatises of the Middle Ages and surfaces in literary treatments of extramarital pregnancy; see Nancy Vine Durling, ‘Women’s Visible Honor in Medieval Romance: The Example of the Old French Roman du Comte de Poitiers’, in Renata Blumenfeld-Kosinski (ed.), *Translatio Studii: Essays by His Students in Honor of Karl D. Uitti for His Sixty-Fifth Birthday* (Amsterdam: Rodopi, 2000): 117–32, at 126.
- 12 Ziolkowski, *Alan of Lille’s Grammar of Sex*, especially 27–30 (on ‘The Grammar of Hammers and Anvils’) and 105–7 (on the relation of grammar, poetry, free will, natural goodness and discipline).
- 13 Economou, *The Goddess Natura* 86.
- 14 Carruthers, *The Craft of Thought*, 82.
- 15 See Cicero, *Tusculan disputations*, trans. J. E. King, LCL (London: Heinemann, 1927), I.44; Augustine, *Confessions*, VI.8; and Britton J. Harwood, ‘Dame Study and the Place of Orality in Piers Plowman’, *English Language History*, 57 (1990): 1–17, at 7, 15 n. 19.
- 16 See E. E. Leach, *Sung Birds: Music, Nature, and Poetry in the Later Middle Ages* (Ithaca, NY: Cornell University Press, 2007), 205, 239–54; William Dalglish, ‘The Origin of the Hocket’, *Journal of the American Musicological Society*, 31 (1978): 3–20; and E. E. Leach, ‘Gendering the Semitone, Sexing the Leading Tone: Fourteenth-Century Music Theory and the Directed Progression’, *Music Theory Spectrum*, 28 (2006): 1–21.
- 17 See Dalglish, ‘The Origin of the Hocket’.
- 18 See Jean-Marie Fritz, *Paysages sonores du Moyen Âge: Le versant épistémologique* (Paris: Champion, 2000), 128–37, and E. E. Leach, ‘The Unquiet Thoughts of Edmund Spenser’s Scudamour’, in Gioia Filocamo and M. J. Bloxam (eds.), *Uno gentile et subtile ingenio: Studies in Renaissance Music in Honour of Bonnie J. Blackburn* Turnhout: Brepols, 2009, 513–20, at 515–18.
- 19 See the summary in Fritz, *Paysages sonores du Moyen Âge*, 128–37. The weight of hammers does not make much difference to the pitch of the struck anvil, as Vincenzo Galilei showed in the sixteenth century. The story continued to be told, however; it works with string lengths. See J. W. McKinnon, ‘*Jubal vel*

- Pythagoras, quis sit inventor musicae?*, *The Musical Quarterly*, 64 (1978): 1–28. Franchino Gaffurio, *Theorica Musice* (Milan, 1492), I.8.36–9, reports the priority of Jubal as an addendum to his telling of the Pythagoras tale. His source is Peter Comestor, *Historia Scholastica*; see *Petri Comestoris Scolastica Historia. Liber Genesis*, ed. Agneta Sylwan, CCCM 191 (Turnhout: Brepols, 2005), 53–5.
- 20 See *Guillaume de Machaut, Le Jugement du Roy de Behaigne and Remede de Fortune*, ed. J. I. Wimsatt et al. (Athens: University of Georgia Press, 1988). The date I've given (later than that usually offered) is the latest date ascribed to the earliest surviving manuscript of this poem. See also L. Earp, *Guillaume de Machaut: A Guide to Research* (New York: Garland, 1995), 212–15.
- 21 Guillaume de Machaut, *Remede de Fortune*, lines 4,002–7. Since the forge showcases music rudiments, the idea of an old and a new forge might differentiate between old and new bases for music, whether in terms of tuning (the century's invention of the leading note demanded a different tuning of the semitone; see Leach, 'Gendering the Semitone') or in terms of performance style, as seems to be suggested by comments in the final book of the compendious early-fourteenth-century music-theoretical work *Speculum musicae* by Jacques de Liège (see Frank Hentschel, 'Der Streit um die "ars nova" – nur ein Scherz?', *Archiv für Musikwissenschaft*, 58.2 (2001): 110–30).
- 22 See Leach, *Sung Birds*, chapter 3.
- 23 The inventor of the staff, Guido of Arezzo, is very clear about the ongoing need for memory within his system, saying that 'we need to implant deeply in memory the different qualities of the individual sounds and of all their descents and ascents' before being able to use his notation to learn an unknown melody; see Guido of Arezzo, Epistle Concerning an Unknown Chant', in James McKinnon (ed.), *The Early Christian Period and the Latin Middle Ages*, Source Readings in Music History (New York: Norton, 1998), 107.
- 24 Anne Stone, 'The Composer's Voice in the Late-Medieval Song: Four Case Studies', in Philippe Vendrix (ed.), *Johannes Ciconia: musicien de la transition* (Turnhout: Brepols, 2003), 179–87, and Gilles Dulong, 'Canons, palindromes musicaux et textes poétiques dans les chansons de l'ars nova', in Katelijne Schiltz and Bonnie J. Blackburn (eds.), *Canons and Canonic Techniques, 14th–16th Centuries: Theory, Practice, and Reception History* (Leuven: Peeters, 2007), vol. 1, 61–82, at 69. Ultimately Dulong reads the speaker as implicated in his own critique since he is deploring modernity and yet employing the features he decries (complex rhythms and notations). However, the poem says nothing against modern notation or musical style: instead it laments those who do without understanding, something that no singer or composer of this work could be accused of on account of its very complexity of notation. I would instead see the notation and style as further distinguishing the composer and singers here from the objects of their critique (see below).
- 25 See C. Abbate, 'Outside Ravel's Tomb', *Journal of the American Musicological Society*, 52 (1999): 465–530, and E. Le Guin, "'One Says that One Weeps, but



- One Does Not Weep”: *Sensible*, Grotesque, and Mechanical Embodiments in Boccherini’s Chamber Music’, *Journal of the American Musicological Society*, 55 (2002): 207–54.
- 26 I am reluctant to see this mentality as a result of modality. Rather than seeing recording technology as the driving factor in our acousmatic appreciation of music, I would propose to see it as the logical outgrowth of Romantic aesthetic preoccupations with the performer playing ‘as if from the soul of the composer’. See M. Hunter, “‘To Play as if from the Soul of the Composer’: The Idea of the Performer in Early Romantic Aesthetics”, *Journal of the American Musicological Society*, 58 (2005): 357–98.
- 27 The cue is familiar but the outlining of stage directions in the speeches of other characters is often used as a prop for the least experienced members of the cast: for example, E. Tribble, ‘Distributing Cognition in the Globe’, *The Shakespeare Quarterly*, 56 (2005): 135–55, at 154: ‘A boy who is told “here, sirrah, approach” knows what he is to do.’
- 28 Stone, ‘The Composer’s Voice’, 182, considers only the possibilities that the speaker is a poet or composer.
- 29 On the parts of the natural instrument, see, for example, Marchetto of Padua, *Lucidarium*, ed. J. W. Herlinger (University of Chicago Press, 1985), 91. A reference to the ‘anvil of the throat’ can be found in the treatise of Arnulf of St Ghislain (who takes it from Alan of Lille – see E. E. Leach, “‘The little pipe sings sweetly while the fowler deceives the bird’: Sirens in the Later Middle Ages’, *Music and Letters*, 87 (2006): 187–211, at 210). The striking of words by singers in their oral forges is made more explicit in the use of this metaphor in a much later song by Dowland. See Leach, ‘Unquiet Thoughts’.
- 30 One copy of both text and music survives in a single source, the Chantilly codex (*F-CH* 564). This source unusually contains a large number of both *unica* and author attributions; see E. E. Leach, ‘Dead Famous: Mourning, Machaut, Music, and Renown in the Chantilly Codex’, in Y. Plumley and A. Stone (eds.), *A Late Medieval Songbook and its Context: New Perspectives on the Chantilly Codex (Bibliothèque du Château de Chantilly, MS. 564)* (Turnhout:Brepols, 2009), 63–93.
- 31 I am very grateful to Helen J. Swift for discussing these texts and my translations with me and making many helpful suggestions.
- 32 The implication is that lesser talents can do no better than remake the products of great talents. This remaking would not, however, be exact. Whether there is an oblique reference here to the remaking of Senleches’ own composition in performance is difficult to assess. As I argue below, such remaking is not necessarily exact and is ‘mechanical’ only in the medieval sense of being human and rationally engaged. It, too, is a kind of forging, and composers in this period regularly remade songs (in the sense of using cited material) by themselves and others.
- 33 See S. Perkinson, ‘Portraits and Counterfeits: Villard de Honnecourt and Thirteenth-Century Theories of Representation’, in N. A. Rowe and



- D. S. Areford (eds.), *Excavating the Medieval Image: Manuscripts, Artists, Audiences: Essays in Honor of Sandra Hindman*, (Aldershot: Ashgate, 2004), 13–36.
- 34 In contracts (written in French) for the making of tomb images for the English King Richard II (1395), for example, the images should ‘contrefaire’ the King and Queen; see P. Binski, *Medieval Death: Ritual and Representation* (London: British Museum, 1996), 103. This is a kind of portrayal, a representation, which is meant to be as close to the original as possible in its exterior representation.
- 35 See M. Bent, ‘Naming of Parts: Notes on the Contratenor, c. 1350–1450’, in Filocamo and Bloxam (eds.), *‘Uno gentile et subtile ingenio’*, 1–12.
- 36 Maybe the accusation about such composers not writing beginnings and ends is true: of two non-authorial contratenors added to Machaut’s works in the wider transmission, one (*On ne porroit* [B3]) lacks its beginning and the other (*Je sui aussi* [B20]) is missing its end. For the arguments in favour of seeing the late medieval added contratenors doing something with different parameters rather than being merely deficient, see P. Memelsdorff, ‘Lizadra donna: Ciconia, Matteo da Perugia, and the Late Medieval *Ars contratenor*’, in Philippe Vendrix (ed.), *Johannes Ciconia 233–78*.
- 37 See J. Cerquiglini-Toulet, *The Color of Melancholy: The Uses of Books in the Fourteenth Century*, trans. L. G. Cochrane (Baltimore: Johns Hopkins University Press, 1997), and H. J. Swift, ‘“Tamainte consolation / Me fist lymagination”: A Poetics of Mourning and Imagination in Late Medieval *dits*’, in C. E. Léglu and S. J. Milner (eds.), *The Erotics of Consolation: Desire and Distance in the Late Middle Ages* (New York: Palgrave Macmillan, 2008), 141–64.
- 38 We should note, though, that the singer mentions only his former pleasure in the composition of virelais and rondels, whereas this song is a (double) balade. On the topos in Bernart de Ventadorn, see S. Gaunt, *Gender and Genre in Medieval French Literature* (Cambridge University Press, 1995), 130–1. For the topos in Machaut’s *Pour ce que tous* (B12), see E. E. Leach, ‘Singing More About Singing Less: Machaut’s *Pour ce que tous* (B12)’, in E. E. Leach (ed.), *Machaut’s Music: New Interpretations* (Woodbridge: Boydell and Brewer, 2003), 111–24; and Anne Stone, ‘Music Writing and Poetic Voice in Machaut: Some Remarks on B12 and B14’, in Leach, (ed.), *Machaut’s Music*, 125–38. The related ‘farewell to poetry’ topos is similarly found in contemporary writers such as Chaucer and Froissart.
- 39 Publishing constraints prevent the colour reproduction that the notation demands. A colour facsimile can be seen, however, in Dulong, ‘Canons’, 68. Stone, ‘The Composer’s Voice’, 184, Ex. 5 lays out in analytical score parallel diplomatic transcriptions of the two different notations.
- 40 ‘Each believes he is making his own personal work, but in reality each does nothing more than imitate the others’ (Dulong, ‘Canons’, 68, translation mine).
- 41 On this topic, see E. Reimer, ‘Musicus und Cantor: Zur Sozialgeschichte eines musikalischen Lehrstücks’, *Archiv für Musikwissenschaft*, 35 (1978): 1–32;

- and C. Page, 'Music and the Origins of Courtliness', in K. Busby and C. Kleinhenz (eds.), *Courtly Arts and the Art of Courtliness* (Cambridge: Brewer, 2006).
- 42 See Stone, 'The Composer's Voice', 184, Ex. 6 for a score showing a possible interpretation of small differences between the two.
- 43 *Ibid.*, 185; and G. Dulong, 'La ballade polyphonique à la fin du Moyen Age: De l'union entre musique naturelle et musique artificielle', unpublished PhD thesis, Université de Tours Francois-Rabelais/Conservatoire National Supérieur de Musique et de Danse de Paris (2000), 69. For Dulong this additional irony changes the tone of the critique from one of deploring the practice of the amateurs to one of mocking it.
- 44 Stone's negative interpretation of the verb 'forgier' (to forge) forces her to translate these lines differently, with 'entendement ... si agut' signalling 'intelligence so limited' rather than 'sharp'; see Stone, 'The Composer's Voice', 181. But the speaker here is referring not to the many who are getting involved in forging, but to the few who are worthy forgers (i.e., makers) of song.
- 45 Or, at least, I am when attempting to view the song through my understanding of medieval counterpoint as set out in E. E. Leach, 'Counterpoint and Analysis in Fourteenth-Century Song', *Journal of Music Theory*, 44 (2000): 45–79.
- 46 Such practice is common in small vocal ensembles today, especially when rehearsing long pieces. The erring singer typically raises a finger or hand to acknowledge his or her mistake so long as it is not catastrophic enough as to have caused a complete breakdown in the musical texture. The idea communicated by the gesture is in essence 'oops, *mea culpa* – I'll get it right next time and have made a mental (or pencil) note to remind myself'.
- 47 These cases involve approaches to the C sonority that is the terminal type in this piece. In the last minim (a quaver in the modern transcription) of bar 21, the resolution requires *a*, and *d_b*; the tenor might sing *D*, in bar 20 or not. (The resolution is held for a semibreve but the song is offset metrically at this point.) A similar case is at the end of the piece as a whole, although this instance could be negated if the tenor *F* were viewed as an error for *D* (this would not work in the case of bar 21 because such a correction would introduce parallel octaves between tenor and cantus). Another case is at the very outset of the B section where the initial tenor *b*, would lead to the cantus singing *f₃*, which would force the cadence to be made by a tenor *d_b* at the end of bar 42.
- 48 Although the notation's syncopations give the sense of a singer's anticipation and delay of certain notes and resolutions, as if it is the singers who are teasing each other by withholding or pre-forcing certain progressions, the highly textual notational complexity suggests instead that this is built in by the plan of the composer. The complex rhythms are written using different time signatures in each part and at the point in the first section where the uppermost voice talks about everyone wanting to *contrefaire* songs, the melody of part of a famous song by another composer is cited without its text. See

- Yolanda Plumley, 'Citation and Allusion in the Late *Ars Nova*: The Case of the *En Attendant* Songs', *Early Music History*, 18 (1999): 324–5.
- 49 S. Palfrey and T. Stern, *Shakespeare in Parts* (Oxford University Press, 2007), in particular, views the Shakespeare canon from the perspective of parts and cues, in the process elucidating various aspects of rehearsal and performance that are not clear from full play texts. The survival of theatrical parts from sixteenth-century England is extremely rare. Because of the more compact notation of music compared to play texts, individual voice parts are usually presented sequentially on the same manuscript opening in the surviving musical sources. However, additional or alternative individual parts are sometimes copied many folios from the parts with which they belong, and separate part-books survive from the fifteenth century onwards. I would suggest that singers might have owned their own parts in some more ephemeral form for the purpose of 'conning', much as was the case with play parts later. Correspondingly, a complete lack of survival for such putative musical material would hardly be surprising.
- 50 It should be noted, too, that the act of forging required distributed cognition in that it usually involved more than one smith with the blows of hammers on the anvil carefully coordinated. See, for example, the image from *Speculum Humanae Salvationis* (Österreichische nationalbibliothek s.n. 2612, fol. 25^v), c. 1330–40 at <http://larsdatter.com/aprons-smiths.htm>.
- 51 See, for example, S. Woll, *Everyday Thinking: Memory, Reasoning, and Judgment in the Real World* (Mahwah, NJ: L. Erlbaum, 2002).
- 52 E. Hutchins, *Cognition in the Wild* (Cambridge, MA: MIT Press, 1995).
- 53 Tribble, 'Distributing Cognition in the Globe', 141.
- 54 M. Perry, 'Distributed Cognition', in J. M. Carroll (ed.), *HCI Models, Theories, and Frameworks: Towards a Multidisciplinary Science* (Boston: Morgan Kaufmann, 2003), 196.
- 55 *Ibid.*, 197.
- 56 Tribble, 'Distributing Cognition in the Globe', 142, citing D. A. Norman, *Things That Make Us Smart: Defending Human Attributes in the Age of the Machine* (Cambridge, MA: Perseus, 1993), 142.
- 57 See also the comments in Palfrey and Stern, *Shakespeare in Parts*, 83–90.
- 58 See M. Bent, 'The Grammar of Early Music: Preconditions for Analysis', in C. C. Judd (ed.), *Tonal Structures in Early Music* (New York: Garland, 1998), 15–59.
- 59 See Palfrey and Stern, *Shakespeare in Parts*, *passim*, and Bent, 'The Grammar of Early Music'.
- 60 Tribble, 'Distributing Cognition in the Globe', 152.
- 61 *Ibid.*, 155.
- 62 For the full argument that the fourteenth century saw the beginnings of the recognition that money was not just a medium but a commodity in itself, see J. Kaye, *Economy and Nature in the Fourteenth Century: Money, Market Exchange, and the Emergence of Scientific Thought* (Cambridge University Press, 1998).