

# SEBALD HEYDEN (1499–1561): THE FIRST HISTORICAL MUSICOLOGIST?

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Sebald Heyden's *De arte canendi*, which appeared in its third and final edition in Nuremberg in 1540,<sup>1</sup> has had a greater impact on modern scholarship than any other writing on mensuration and *tactus* from the 15th or 16th century. The book advocates the theory that all signs of mensuration and proportion should be governed by a single, uniform *tactus*. This *tactus* corresponds to different written values under different signs, but its speed is fixed and it is always divided into equal down and up motions. Heyden's theory was a reaction against the prevailing view that there were three types of *tactus*, which most theorists call "major", "minor", and "proportionate".<sup>2</sup> One of its consequences is that music with cut mensuration signs is always twice as fast as music with uncut signs.

Scholars of the past few decades have demonstrated beyond reasonable doubt that this conclusion cannot be correct.<sup>3</sup> My purpose is not to discuss what is wrong

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<sup>1</sup> Sebald Heyden, *De arte canendi, ac vero signorum in cantibus usu, libri duo* (Nürnberg: Petreius, 1540); facs. ed., *Monuments of music and music literature in facsimile II/139* (New York: Broude Brothers, [1969]); English trans. by Clement A. Miller, *Musicological studies and documents 26* (s.l.: American Institute of Musicology, 1972). The earlier editions of the book are *Musicae stoicheiosis* (Nürnberg: Peypus, 1532) and *Musicae, id est, artis canendi libri duo* (Nürnberg: Petreius, 1537). For an introduction to the history and content of the work, see Clement A. Miller, "Sebald Heyden's *De arte canendi*: Background and contents", *Musica disciplina* 24 (1970) 79–99. The cultural context of Heyden's treatises and the musical examples in them are discussed in Cristle Collins Judd, *Reading Renaissance music theory: Hearing with the eyes* (Cambridge: Cambridge University Press, 2000) 82–114.

<sup>2</sup> Definitions of *tactus* types vary from one theorist to another. The most influential version of the three-*tactus* theory was that of Nicolaus Listenius, *Musica* (Wittenberg: Rhau, 1537) ch. 10. The book, which is a revised version of the author's *Rudimenta musicae* (Wittenberg: Rhau, 1533), went through 46 editions from 1537 to 1583. Facsimile of the 1549 edition (Nürnberg: Petreius), ed. by Georg Schünemann. *Veröffentlichungen der Musik-Bibliothek Paul Hirsch 8* (Berlin: Breslauer, 1927); English trans. by Albert Seay. *CCMP translations 6* (Colorado Springs: Colorado College Music Press, 1975). Listenius defines the *tactus* as *totalis, integralis, or maior* when it corresponds to a breve; *generalis, vulgaris, or minor* when it corresponds to a semibreve; and *specialis or proportionatus* when it corresponds to any other value.

<sup>3</sup> The first study to deny the validity of Heyden's *tactus* theory was Carl Dahlhaus, "Zur Theorie des Tactus im 16. Jahrhundert", *Archiv für Musikwissenschaft* 17/1 (1960) 22–39. Dahlhaus refined his views in "Die Tactus- und Proportionenlehre des 15. bis 17. Jahrhunderts", *Hören, Messen und Rechnen in der frühen Neuzeit*, ed. by Frieder Zaminer. *Geschichte der Musiktheorie 6* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1987) 333–61. Other studies that interpret mensural notation in ways that are at odds with Heyden's theory include Anna Maria Busse Berger, "The relationship of perfect and imperfect time in Italian theory of the Renaissance", *Early music history* 5 (1985) 1–28; idem, *Mensuration and proportion signs: Origin and evolution* (Oxford: Clarendon Press, 1993) 51–86; Alejandro Enrique Planchart, "The relative speed of *tempora* in the period of Dufay", *RMA research chronicle* 17 (1981) 33–51;

with Heyden's theory, but to examine how he formulated his ideas and why his views had such a powerful impact on his successors from the 16th century through the 20th. Heyden's approach to the study of musical notation was in many ways similar to that of more recent musicologists. Comparing his research methods with those of later scholars sheds light not only on his theory, but also on current debates over problems relating to mensuration and *tactus*.

Heyden was not a professional musician, but a scholar and educator for whom music formed only one strand of a more ambitious career. Born to a family of Nuremberg patricians in 1499, he studied under the noted humanist and music theorist Johannes Cochlaeus and received a master's degree from the University of Ingolstadt in 1519. From 1525 to his death in 1561 he served as rector of the school of St. Sebald in Nuremberg. The position included responsibility for the school choir, as well as teaching and administration.<sup>4</sup> Heyden was widely admired for his learning and wrote extensively on education and theology, as well as music. His religious views in the 1530s, though formally Lutheran, were influenced by the teachings of Zwingli.<sup>5</sup>

Heyden's attitude toward music was a product of his education, social status, and religion. Following Erasmus, he grants music a role in refreshing the mind after more serious studies, but condemns those who are devoted to it excessively and expresses reservations about its use in church.<sup>6</sup> He believes that the art of music is founded on rational principles and disdains both theorists who "preferred to subscribe to the opinions of others rather than to follow the definite judgment of their own carefully considered reasoning"<sup>7</sup> and musicians who "if they knew anything, learned it only from practice, and not from art, so that when questioned they cannot prove their opinion with a genuine reason."<sup>8</sup> His interpretations of mensuration and proportion signs were influenced by the Pythagorean aesthetic view that equates beauty with proportion. He berates musicians who vary the speed of the *tactus* on grounds that proportions can be realized only in relation to a constant standard of measure:

Through this heedlessness of various *tactus* the order and nature of proportions ... are confused and altogether deformed.... For when we see so many types of *tactus* invented only to change the speed of a song repeatedly, making it now slower, now faster, now very fast, what then, I ask, are we to think these innovators understood by proportions, augmentations, and diminutions? It is absolutely certain from the art itself that they wanted to show through diverse species of *tactus* the same thing that older musicians

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Rob C. Wegman, "What is 'acceleratio mensurae'?" *Music & letters* 73/4 (November 1992) 515–24; Alexander Blachly, *Mensuration and tempo in 15th-century music: Cut signatures in theory and practice* (Ph.D. diss., Columbia University, 1995); and Ruth I. DeFord, "On diminution and proportion in 15th-century music theory," *Journal of the American Musicological Society* 58/1 (spring 2005) 1–67.

<sup>4</sup> In Nuremberg the rector (*Schulmeister*), rather than the cantor, was responsible for the school choirs. See Bartlett Butler, *Liturgical music in 16th-century Nürnberg: A socio-musical study* (Ph.D. diss., University of Illinois, 1970) 2 vols., 527–28. I thank Professor Butler for clarifying this matter and offering other helpful comments on this paper.

<sup>5</sup> The most extensive biographical study of Heyden is Alfred Kosel, *Sebald Heyden (1499–1561): Ein Beitrag zur Geschichte der Nürnberger Schulmusik in der Reformationszeit* (Würzburg: Triltsch, 1940).

<sup>6</sup> Heyden, *Musicae stoiceiosis*, fols. A2<sup>r</sup>–A2<sup>v</sup> and A3<sup>r</sup>–A4<sup>r</sup>; quoted and translated in Judd, *Reading Renaissance music theory*, 93–94, n. 29; *Musicae, id est, artis canendi*, book 1, ch. 1, 2–4; and *De arte canendi*, book 1, ch. 1, 2–4 (Miller translation, 26–27).

<sup>7</sup> "Qui ... aliorum opinionibus subscribere, quam certum aliquod suae exquisitae rationis iudicium sequi malverunt." Heyden, *De arte canendi*, fol. A2<sup>r</sup> (Miller translation, 18). My translations sometimes differ in detail from the published translations cited.

<sup>8</sup> "Si quicquam sciverunt, id ipsum ex solo usu, nulla vero arte ita habuerint, ut interrogati, ne quidem verisimili ratione sententiam suam possent comprobare." *Ibid.*, fol. A4<sup>r</sup> (Miller translation, 20–21).

showed much more correctly and artfully by the completeness or diminution of signs or by proportions.<sup>9</sup>

He compares musicians who change the *tactus* within a piece to mathematicians who demonstrate numerical relationships with inconsistent sizes of units and carpenters who construct buildings without measuring tools.<sup>10</sup>

Heyden's theory is inextricably bound to the culture of Nuremberg in the 1530s, in which the music of Josquin and his contemporaries played a major role. Beginning in 1537 Nuremberg publishers issued a series of large anthologies of music of the Josquin era. These prints mark the beginning of the so-called "German Josquin Renaissance", which continued unabated through the 1560s and beyond.<sup>11</sup> Heyden's motive for studying the mensuration and proportion signs in this repertoire was twofold. First, the notation sometimes includes obsolete signs that singers had to understand in order to perform the music. Second, Heyden believed that old music should be performed in the historically correct way, and this objective could be met only if the original meanings of the signs were properly understood. The second motive became increasingly important as Heyden's views evolved over time. The mensural complexities that occupy most of his attention in the later editions of his treatise are rare in practice. The bulk of the repertoire that he discusses can be, and generally was, performed without benefit of his theory, but in ways that he found objectionable.

In the letters of dedication of the three editions of his treatise (1532, 1537, and 1540) to the Nuremberg patrician Hieronymus Baumgartner, Heyden informs the reader in detail about the motives and methods underlying his project. The most striking feature of his theory is that it is not a description of practices that he knew from experience, but an attempt to reconstruct the meanings of signs as he believed they were understood in earlier, more enlightened times. He was convinced that his contemporaries misunderstood and misused signs, and he aimed to restore signs to their original and correct functions. From a historical point of view this undertaking is unprecedented. Earlier theorists sometimes expressed a distaste for modern innovations, but they did not attempt to recover lost musical practices through historical research.

Heyden tells his readers "how great a labor it was... to collect definite rules on signs... and to reduce the [current] fickle license in the formation of signs to a truly definite science."<sup>12</sup> This labor occupied him throughout the decade of the 1530s. The

<sup>9</sup> "Per eam enim temeritatem variorum Tactuuum, omnis ratio et natura Proportionum... confusa, ac omnino deformata est.... Cum enim tam multiplices Tactuuum species ob hoc tantum excogitatas videamus, ut motum cantus subinde mutarent, nunc tardiozem, nunc concitatiozem, nunc properantissimum faciendo. Quaeso ergo, quid nam illos novatozes, de Proportionibus, Augmentationibus, ac Diminutionibus intellexisse credamus? Certum utique est, ex arte ipsa, quod illi per diversas species Tactus praestare voluerunt, idem veteres per integritatem, aut diminutionem Signorum, aut Proportiones, multo et rectius, et artificiosius praestitisse." Heyden, *De arte canendi*, fol. A3<sup>r</sup> (Miller translation, 20).

<sup>10</sup> *Ibid.*, fol. A3<sup>r</sup> and A4<sup>r</sup>–A5<sup>r</sup> (Miller translation, 20 and 22).

<sup>11</sup> On the role of Josquin's music in 16th-century German musical culture, see in particular Helmuth Osthoff, *Josquin Desprez*, 2 vols. (Tutzing: Hans Schneider, 1962–65) vol. 1, 79–100; Patrick Macey, "Josquin as classic: *Qui habitat, Memor esto*, and two imitations unmasked", *Journal of the Royal Musical Association* 118/1 (1993) 1–43; Jessie Ann Owens, "How Josquin became Josquin: Reflections on historiography and reception", *Music in Renaissance cities and courts: Studies in honor of Lewis Lockwood*, ed. by Jessie Ann Owens and Anthony M. Cummings (Warren, Mich.: Harmonie Park Press, 1997), 271–80; and Rob C. Wegman, "Who was Josquin?" *The Josquin companion*, ed. by Richard Sherr (Oxford: Oxford University Press, 2000) 21–50.

<sup>12</sup> "Quantus vero labor fuerit, ex diversissimis variorum authorum exemplis, certas Signorum regulas colligere, ac vagam illam, in Signis quidlibet fingendi, licentiam, in certam quandam artem redigere..." Heyden, *De arte canendi*, fol. A2<sup>r</sup> (Miller translation, 18). Miller translates "vagam illam... licentiam" as "the former uncertainty and license". The word "former" in this translation does not make sense, since it is the former practice that Heyden wishes to restore, and there

three editions of his treatise present increasingly comprehensive and dogmatic versions of his theory. Before 1540 he did not emphasize fixed tempo as a defining feature of his single *tactus*. He may even have been open to the possibility that the speed of the *tactus* could vary from one piece to another as long as it did not change within a piece. In 1537 he writes:

Others teach three types of *tactus*, which the common mass of singers has accepted in singing for a long time. But if one examines the nature of this art ... more correctly, he will certainly be convinced that there is only one type of *tactus* ... For if the *tactus* is to be divided, there will not be another one resulting from it [i.e., it will not change into another *tactus*], whether it moves slower or faster itself, but rather whether it applies to more or fewer notes.<sup>13</sup>

This statement denies that a change of speed changes the identity of the *tactus*, but it does not exclude the possibility that the *tactus* may have different speeds in different pieces. In 1540 Heyden adds a sentence that explicitly requires a *tactus* of the same speed for all pieces:

If older musicians wanted a faster or slower song, they showed this not through a faster or slower *tactus*, but through longer or shorter values of the notes themselves.<sup>14</sup>

In the earlier editions of the treatise, the defining features of Heyden's *tactus* seem to be equal division and constant speed within a piece. In 1540 the speed of the *tactus* is also fixed, although Heyden never defines that speed in relation to an external standard of measure.

The tone of Heyden's writing becomes increasingly polemical from one edition to the next. In 1532 he explains how to measure proportions in relation to a fixed *tactus*, but he does not explicitly oppose alternative theories. In 1537 and 1540 he attacks the traditional three-*tactus* theory directly. The title of the chapter summarizing his position, absent in 1532, is changed from "On the same *tactus* for all songs and the resolution of diverse signs" in 1537 to "On the unique uniformity of the *tactus*, to be preserved in all of the diverse types of songs, and on the mutual resolution of various signs" in 1540.<sup>15</sup> The principle of uniform *tactus* in its most extreme form had become so vital to him by the end of the decade that he devoted the entire dedication of the last edition of his work to the subject. The defensive tone of that edition suggests that the idea may have encountered more resistance than he anticipated.

Heyden rejected the testimony of earlier theorists on the subject of *tactus* on grounds that previous writers either failed to discuss the issue in detail or explained

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is no word in the original text that suggests that meaning.

<sup>13</sup> "Ab aliis quidem tria Tactuum genera traduntur, quae et vulgus Cantorum in cantando iamdiu recepit. Verum si quis ipsius artis ... naturam ... rectius perspiciat, utique convincetur, non nisi unicum Tactus genus esse ... Non enim, si omnino dividendus Tactus sit, ex eo alius erit, si lentius aut concitatus ipse moveatur. Sed potius, si aut plures, aut pauciores Notulas absolvat." Heyden, *Musicae, id est, artis canendi*, book 1, ch. 5, fol. F2<sup>r</sup>-F2<sup>v</sup>. I thank Leofranc Holford-Strevens for his advice on the interpretation of this passage.

<sup>14</sup> "Vetustiores Musici, si concitatiorem aut lentiozem cantum vellent, id non per celeriorem aut tardiozem Tactum, sed per ipsarum Notularum, aut protractiozem aut contractiozem valorem praesiterunt." Heyden, *De arte canendi*, 41 (Miller translation, 53).

<sup>15</sup> Heyden, *Musicae, id est, artis canendi*, book 2, ch. 7, fol. N1<sup>r</sup> ("De eodem Tactu omnium Cantionum, & Resolutione diversorum Signorum"), and *De arte canendi*, book 2, ch. 7, 110 ("De unica Tactuum aequabilitate, in quantumlibet diversis cantuum speciebus servanda: Deque mutua variorum Signorum resolutione"; Miller translation, 97).

it in ways that he regarded as irrational.<sup>16</sup> He therefore turned to the direct analysis of old music, much of which was available to him in the personal library of the local patrician Ulrich Stark before the appearance of the Nuremberg prints.<sup>17</sup> Believing that every sign had one and only one correct meaning and that composers of the past used signs in the correct way, he analyzed contrasting signs in simultaneous relations and deduced empirically the *tactus* that would coordinate the voices with different signs most effectively. He then concluded that the same *tactus* and the same tempo relations applied to the signs in nonsimultaneous contexts as well. When he encountered a combination of signs that did not work in the usual way, he attributed the anomaly to error.<sup>18</sup> His theory works well for the majority of simultaneous signs in the late 15th and early 16th centuries. Its weakness lies in the assumption that the same relations apply in successive and independent contexts as well. Since Heyden believed that logical consistency was an essential foundation of music as an art, however, he could not have regarded that assumption as one that was open to question.

Heyden chose his examples from works by composers whom he regarded as “the best and most esteemed musicians.”<sup>19</sup> Nearly all of them were of the Josquin generation and already dead before Heyden began his work. Although his book is ostensibly an explanation of the notation of his examples, he sometimes took the liberty of changing the original notation to strengthen his points. He justifies this procedure with a disclaimer that lays bare many of the beliefs and values underlying his efforts:

In some of the examples ... I have changed the form of the notes, or in some others I have placed the note forms under different signs, applying a notation other than that used by the composer himself. In this I have no doubt that any fair judge will believe it was done properly and justly, because, despite the changes in notes and signs, the nature of the music clearly remains complete and unchanged in what pertains to contrapuntal composition and the intent of the composer.... This is done with such equity that no composer can complain that it has caused him any harm.<sup>20</sup>

<sup>16</sup> In *De arte canendi*, fol. A2<sup>r</sup> (Miller translation, 18), he names Gaffurio, Tinctoris, and Georg Stahler (whose identity I have been unable to determine) as theorists who say little or nothing about *tactus*, although their works are exemplary in other respects. He leaves the theorists he regards as irrational unnamed. Many of the elements of Heyden's *tactus* theory are found in earlier writings, but no previous theorist combines them into a rigid, comprehensive system in the way that he does.

<sup>17</sup> Heyden, *Musicae, id est, artis canendi*, fol. Aiii<sup>r</sup>, reproduced in Mariko Teramoto, *Die Psalmmotettendrucke des Johannes Petrejus in Nürnberg*, Frankfurter Beiträge zur Musikwissenschaft 10 (Tutzing: Hans Schneider, 1983) 55. Judd, *Reading Renaissance music theory*, 94–104, discusses the music that Heyden borrowed from Stark and used in his treatises. Most of it is drawn from Petrucci prints published between 1502 and 1507. Whether Stark owned the prints themselves or manuscript copies of them is not known.

<sup>18</sup> For example, since Heyden believed that signs of major prolation without a stroke signify augmentation, he regarded the absence of a stroke in those signs in Ockeghem's *Missa prolationum* as a scribal error. *De arte canendi*, book 2, ch. 2, 69 (Miller translation, 73).

<sup>19</sup> In *Musicae, id est, artis canendi*, fols. Aii<sup>r</sup>–Aiii<sup>r</sup>, reproduced in Teramoto, *Die Psalmmotettendrucke*, 54–55, Heyden names Josquin, Obrecht, Pierre de la Rue, and Isaac as some of the “optimi ac laudatissimi Musici” from whom he drew his examples. In the letter of dedication of *De arte canendi*, fol. A3<sup>r</sup> (Miller translation, 19), he identifies Ghiselin and Obrecht as composers who used signs in a particularly artful way.

<sup>20</sup> “Quod autem in aliquibus exemplis ... formulas notularum, aut transposuerim, aut interdum alijs, atque alijs Signis subiecerim, aliter videlicet, quam ipsius authoris formula habebat, in eo non dubito, quin aequus quisque iudex, id factum pro aequo, et iusto habiturus sit, in quo, quamlibet mutatis Notulis ac Signis, tota tamen cantionis constitutio, quod ad Contra puncti compositionem, ac autoris mentem pertinet, non mutata, sed plane integra, ac perpetuo eadem permaneat.... Idque tanta aequitate, ut interim nemo auctorum de ulla sibi facta iniuria conqueri possit.” Heyden, *De arte canendi*, fol. A5<sup>r</sup>–A5<sup>v</sup> (Miller translation, 22–23).

Harm to a dead composer! The notion implies a host of assumptions that have long been commonplace, but were radically new at the time of Heyden's writing: Music is part of a permanent cultural heritage that accumulates over time and is founded on the works of dead composers whose excellence has earned them the status of classics. A composer therefore has a stake in his posthumous reputation. He has one and only one intention for how his works should be performed. That intention can be recovered through historical research, even if it has not been preserved in an unbroken living tradition. Notation is a complete representation of the composer's concept; it may be transcribed from one form to another without changing the essence of the music that it encodes.<sup>21</sup> Performers are duty-bound to respect the composer's intentions, because the composer in some sense owns his works even after his death.

This view of music history might have seemed self-evident to proponents of the so-called "authentic performance movement" of the 1960s and 1970s, but it would have been incomprehensible to people much before Heyden's time. The concept of "composer" itself is not much older than the repertoire from which Heyden drew his examples of classic excellence, and the idea that composers of a relatively remote past should serve as models to be emulated by those of the present was quite new.<sup>22</sup> The view has clear parallels, however, in the humanist and religious agendas of the time. Heyden drew an explicit parallel between his goal in relation to music and the efforts of humanists such as Erasmus in "restoring liberal arts from abuse or barbarisms to their true practice and natural condition."<sup>23</sup> He was aware that his classic models were much more recent than the venerated writers of antiquity, but he justified the parallel on grounds that the ancients would have revered polyphonic music as a revelation from heaven if they had invented it.<sup>24</sup> He does not point out the analogy between his historical claims and those of the Protestant reformers who claimed to be restoring Christianity from its current corrupt state to an original, pristine form (and could not have done so, given the delicate relationship between Lutheran Nuremberg and the Catholic Emperor), but the relationship is too obvious to overlook. All of these enterprises share a sense of historical distance from an idealized period in the past and promote works of that period as a source of reform and renewal for the corrupt present era.

Heyden's place in this cultural context makes for an interesting comparison with that of Glarean. Superficially, the interests and beliefs of the two theorists were quite opposite. Glarean was a Catholic who developed a new system of mode and transmitted only conventional ideas about mensuration. Heyden was a Protestant who developed a new system of mensuration and transmitted only conventional ideas about mode. Nevertheless, the similarities between the two men were in many ways greater than their differences. Both were humanist scholars who received their early musical training

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<sup>21</sup> Heyden is to my knowledge the first scholar to change the notation of his musical examples for purposes of theoretical demonstration. His claim that this can be done without changing the meaning of the notation is one that applies implicitly to scholarly editions of old music and examples in musicological studies ever since. Only recently has the view that the graphic form of a notation is inseparable from its meaning even been considered. The issue is discussed in Margaret Bent, "Editing early music: The dilemma of translation," *Early music* 22/3 (August 1994) 373–92.

<sup>22</sup> On the origin and cultural significance of the concept of "composer," see Rob C. Wegman, "From maker to composer: Improvisation and musical authorship in the Low Countries, 1450–1500," *Journal of the American Musicological Society* 49/3 (fall 1996) 409–79.

<sup>23</sup> "De ingenuis vero artibus, ex abusu, aut barbarie, in verum usum, ac genuinam formam restituendis..." Heyden, *De arte canendi*, fol. A1<sup>v</sup> (Miller translation, 17).

<sup>24</sup> *Ibid.*, fol. A2<sup>v</sup> (Miller translation, 19).

from Cochlaeus. They shared a belief in the inherently rational nature of music as an art and therefore viewed abstract logic as a valid tool for investigating music-historical questions. They idealized Josquin as a model of excellence and regarded the music of their own time as inferior. Each of them invented a strikingly new theoretical system, but justified his innovations as a restoration of lost truth. Although neither of their systems had much relation to current practice, both influenced music theory and history profoundly for centuries to come. The principal difference between Heyden and Glarean is that Glarean's goal was purely theoretical, while Heyden aimed to reform performance practice as well as theory.<sup>25</sup>

Heyden's views had a significant impact on later mensural theory, especially in Germany and France in the 1550s, though they were by no means universally accepted. Their prestige was based on the logical rigor of Heyden's reasoning, the clarity and consistency of his conclusions, and his personal reputation for erudition. Later writers confirm that his theory does not conform to current practice, but they often express admiration for it nevertheless. The extent to which they accept it as a model for performance depends on how they view the relation between speculative theory and practical music-making. Gregor Faber,<sup>26</sup> Johann Zanger,<sup>27</sup> and Johannes Oridryus<sup>28</sup> echo Heyden's condemnation of performers who fail to interpret signs according to strict rules. Loys Bourgeois,<sup>29</sup> Gallus Dressler,<sup>30</sup> and Eucharius Hofmann<sup>31</sup> accept Heyden's claim that older musicians used a uniform *tactus*, but advocate different alternatives for the present. Other theorists negotiate the contradictions between Heyden's theory and current practices in a variety of ways.

Heinrich Faber and Hermann Finck express respect for Heyden's theory, but make allowance for exceptions to it in practice. Faber ignores Heyden and treats the semibreve as the *tactus* of  $\text{♩}$  without comment in his elementary *Compendiolum musicae* of 1548.<sup>32</sup> In his more extensive *Ad musicam practicam introductio*, which appeared in Nuremberg two years later,<sup>33</sup> he calls Heyden "doctissimus vir" and acknowledges that the single-*tactus* theory is correct in principle, but nevertheless allows students to use three types of *tactus* for greater ease.<sup>34</sup> He compromises with Heyden by stating that the semibreve *tactus* should be twice as fast in  $\text{♩}$  as in  $\text{♩}$ , although it is only a little faster in practice.<sup>35</sup> Finck begins the discussion of *tactus* in his *Practica musica* of 1556 by stating that there are three types of *tactus* and illustrating each of them with a musical example, then

<sup>25</sup> On the cultural context of Glarean's theory, see Sarah Fuller, "Defending the *Dodecachordon*: Ideological currents in Glarean's modal theory", *Journal of the American Musicological Society* 49/2 (summer 1996) 191–224.

<sup>26</sup> Gregor Faber, *Musices practicae erotematum libri II* (Basel: Petri, 1553) book 2, ch. 9, 45–47.

<sup>27</sup> Johann Zanger, *Practicae musicae praecepta* (Leipzig: Hantzsch, 1554) fol. U<sup>r</sup>–U<sup>r</sup>.

<sup>28</sup> Johannes Oridryus, *Practicae musicae utriusque praecepta brevia* (Düsseldorf: Baethen, 1557). Renate Federhofer-Königs, ed., *Johannes Oridryus und sein Musiktraktat* (Köln: Volk, 1957) 128–29.

<sup>29</sup> Loys Bourgeois, *Le droit chemin de musique* (Geneva: [Gérard], 1550) ch. 6, fol. C3<sup>r</sup>.

<sup>30</sup> Gallus Dressler, *Musicae practicae elementa* (Magdeburg: Kirchner, 1571) fol. I6<sup>r</sup>.

<sup>31</sup> Eucharius Hofmann, *Musicae practicae praecepta* (Wittenberg: Schwertel, 1572) fol. Ivi<sup>r</sup>–Ivi<sup>r</sup>.

<sup>32</sup> Heinrich Faber, *Compendiolum musicae pro incipientibus* (Brunswick, 1548) fol. A6<sup>r</sup>. This book was the most popular textbook in 16th-century Lutheran schools. It went through 50 editions up to 1617 and formed the basis of Adam Gumpelzhaimer's *Compendium musicae* (Augsburg: Schönig, 1591), which appeared in 13 editions to 1681, and Melchior Vulpius's *Musicae compendium latino germanicum M. Henrici Fabri* (Jena: Weidner und Birnstiel, 1608), which appeared in nine editions to 1665.

<sup>33</sup> Heinrich Faber, *Ad musicam practicam introductio* (Nürnberg: Berg und Neuber, 1550). This book went through only five editions, 1550–71.

<sup>34</sup> *Ibid.*, part II, ch. 5, fol. S4<sup>r</sup>–T<sup>r</sup>.

<sup>35</sup> *Ibid.*, fol. P2<sup>r</sup>.

qualifies the point by saying that older musicians more correctly used only two types.<sup>36</sup> A few pages later he retreats still further, stating that “although there is clearly no use in inventing several types of *tactus* ... since it is not only convenient, but truly necessary, to use one and the same [*tactus*] in all types of songs, nevertheless, for the purpose of teaching, several types of *tactus* are used.”<sup>37</sup> I am reminded of Mantle Hood’s story of the way a Javanese musician explained the tuning of the five-note *sléndro* scale to him: “[The spaces between the notes] are all the same size.... [Jaap] Kunst explained this in his book ... but we don’t play them that way.”<sup>38</sup> Finck knew that there was only one type of *tactus* because Heyden explained the principle in his book, but the musicians he knew did not measure music that way.

Philibert Jambe de Fer and Jean Yssandon accept parts of Heyden’s theory, but misinterpret Heyden’s ideas in ways that bring them closer to reality. Jambe de Fer, who cites the single-*tactus* theory on unspecified authority in his *Épitome musical* of 1556, disapproves of the unequally divided *tactus* on grounds that only one type of *tactus* is necessary,<sup>39</sup> but does not tie the *tactus* to different written values under different signs. For him, the signs  $\text{C}$ ,  $\text{C}$ ,  $\text{C2}$ , and  $\text{C}$  all have the same *tactus* (presumably the semibreve) when they appear in all voices. When  $\text{C}$  is combined with another of these signs,  $\text{C}$  functions as augmentation, rather than  $\text{C}$ ,  $\text{C2}$ , or  $\text{C}$  as diminution.<sup>40</sup> Yssandon, who derives much of the material of his *Traité de la musique pratique* of 1582 from *De arte canendi*, follows Heyden in applying the *tactus* to the semibreve in  $\text{C}$  and the breve in  $\text{C}$ ,  $\text{C2}$ , and  $\text{C}$ , but interprets Heyden’s first statement about the speed of the *tactus* quoted above (p. 4–5) to mean that a slower or faster *tactus* is acceptable because speed does not affect the identity of the *tactus*.<sup>41</sup>

Other theorists give even less credence to Heyden’s theory as a model for practical performance. Some express respect for Heyden’s erudition but tacitly ignore his views on *tactus*. Glarean, for example, calls Heyden “insignis musicus” and uses many of his musical examples, but bases his discussion of *tactus* on common practice, not on Heyden’s theory.<sup>42</sup> Ambros Wilphlingseder, who served as cantor under Heyden at St. Sebald beginning in 1550, borrows much of the text and many examples from Heyden in his *Erotemata musices practicae* of 1563, but advocates the traditional three *tactus*

<sup>36</sup> Hermann Finck, *Practica musica* (Wittenberg: Rhau, 1556; facs. ed., Biblioteca musica bononiensis II/21, Bologna: Forni, [1969]), fol. Fiii<sup>r</sup>–Gii<sup>r</sup>.

<sup>37</sup> “Quamvis autem plura genera tactuum fingere, ut saepe dictum, plane nihil opus sit, cum unico et eodem in cantibus omnis generis uti non solum commodum, verum etiam necessarium sit, tamen docendi gratia plura genera tactuum usurpantur.” *Ibid.*, fol. Ki<sup>r</sup>. The first part of this passage (through “verum etiam necessarium sit”) is quoted almost verbatim from Heyden, *De arte canendi*, book 2, ch. 2, 65 (Miller translation, 71).

<sup>38</sup> Mantle Hood, *The ethnomusicologist* (Kent, Ohio: Kent State University Press, 1982) 221.

<sup>39</sup> “Of *touchement* or *tacte* ... we have two types, although it is said that only one is necessary. I do not know where this error came from, if not from the bad habit and lack of care of musicians ...” (“Du *touchement*, ou *tacte* ... nous en avons de deux sortes, encore qu’il soit dit n’en failloir que d’un. Je ne sçay dont est procedée la faute, si non par mauvaïse coustume & nonchallance des Musiciens ...” Philibert Jambe de Fer, *Épitome musical* (Lyon: Du Bois, 1556) 43. Facsimile in François Lesure, “L’*Épitome musical* de Philibert Jambe de Fer (1556)”, *Annales musicologiques* 6 (1958–63) 341–86.

<sup>40</sup> *Ibid.*, 29–30.

<sup>41</sup> “Some hold that there are three types of *tactus*, but in fact there is only one; whether the *tactus* is faster or slower it will be only one ...” (“Aucuns tiennent qu’il y a trois especes de batue, mais à la verité il n’en y a qu’une, soit la batue plus hastée, ou plus tarde ne sera qu’une ...”). Jean Yssandon, *Traité de la musique pratique* (Paris: Le Roy & Ballard, 1582; repr. ed. Genève: Minkoff, 1972) 17–18.

<sup>42</sup> Heinrich Glarean, *Dodecachordon* (Basel: Petri, 1547) book 1, ch. 4, 6. Monuments of music and music literature in facsimile II/65 (facs. ed., New York: Broude Brothers, [1967]). English trans. by Clement A. Miller. Musicological studies and documents 6 ([Roma]: American Institute of Musicology, 1965) 46.

without comment.<sup>43</sup> Most theorists simply relegate Heyden's *tactus* theory to the realm of speculation by not mentioning it in books on practical music, but the iconoclastic Adrian Petit Coclico, known to musicologists through his questionable claim to have been a student of Josquin, opposes it directly. In his *Compendium musices*, published under Heyden's nose in Nuremberg in 1552, Coclico expresses open contempt for "musician-mathematicians, who have contrived an infinite number of other signs and turned away the souls of youth from the true practice of music, making something clear in itself obscure."<sup>44</sup> He names Gaffurio, not Heyden, as such a person, but the implication that Heyden is his more immediate adversary is obvious.

Theorists continued to cite Heyden as an authoritative figure until the early 17th century, but his *tactus* theory attracted little attention after about 1570. With the rise of historical musicology in 19th-century Germany, however, Heyden's work assumed central importance as a guide to interpreting the notation of music of the 15th and 16th centuries. The pioneering study of mensural notation, Heinrich Bellermann's *Die Mensuralnoten und Taktzeichen des XV. und XVI. Jahrhunderts* of 1858, is based almost exclusively on Heyden and draws thirteen of its 20 examples of relationships among signs from *De arte canendi*.<sup>45</sup> Bellermann opens part II of his book with a statement that the ancients measured all signs in relation to a fixed unit of time, called "Schlag" or "tactus", that was marked by lowering and raising the hand or baton.<sup>46</sup> Three of his examples of this principle are pieces in which Heyden altered the original notation to support his theory.<sup>47</sup> Bellermann did not consult the original sources of the examples that he borrowed from Heyden. He not only fails to mention Heyden's tinkering with the notation of some of them, but also explains the fact that one of his examples includes

<sup>43</sup> Ambros Wilphlingseder, *Erotemata musices practicae* (Nürnberg: Heussler, 1563) ch. 14, 320–21.

<sup>44</sup> "Mathematicorum Musicorum, qui alia infinita signa excogitarunt, et animos adolescentum à vero Musices usu abalienarunt, rem per se quidem claram obscuram reddentes." Adrian Petit Coclico, *Compendium musices* (Nürnberg: Berg und Neuber, 1552) fol. Gii. English trans. by Albert Seay, *Musical compendium*, CCMP translations 5 (Colorado Springs: Colorado College Music Press, 1973) 18.

<sup>45</sup> Heinrich Bellermann, *Die Mensuralnoten und Taktzeichen des XV. und XVI. Jahrhunderts* (Berlin: Reimer, 1858). Bellermann credits Heyden as the source of ten of these thirteen examples. He gives no source for one (p. 57) and cites Glarean as the source for two others (pp. 65 and 82), though Glarean in turn took them from Heyden. (Bellermann attributes the example on p. 62 to both Glarean and Heyden.) Using the example numbers in Judd, *Reading Renaissance music theory*, 109–14, the examples that Bellermann took directly or indirectly from *De arte canendi* are as follows:

36 Josquin, *Missa L'homme armé super voces musicales*, Benedictus (p. 58)

33 Obrecht, *Missa Je ne demande*, Qui tollis (p. 61)

42 Pierre de la Rue, *Missa L'homme armé*, Agnus II (p. 62)

41 Josquin, *Missa L'homme armé super voces musicales*, Agnus II (p. 65)

40 N[icolaus] P[iltz], untitled (p. 67)

30 Ghiselen, *Missa Narayge*, Cum Sancto Spiritu (p. 69)

37 Josquin, *Missa ad fugam*, Benedictus (p. 71)

61 Ockeghem, *Missa prolationum*, Et in terra (p. 79)

43 Isaac, *De radice Jesse* (p. 82)

18 Ockeghem, *Missa prolationum*, Kyrie 1 (p. 88)

20 Isaac, *Missa paschali*, Sanctus (p. 90)

38 Isaac, *Coeli, terrae, maris* (p. 92)

— Brumel, *Missa ut re mi fa sol la*, Agnus Dei I (missing from Judd's table; p. 96)

Bellermann attributes three examples not found in Heyden to other theorists: Gumpelzhaimer (p. 59), Gaffurio (p. 74), and Glarean (p. 100). His remaining four examples are unidentified.

<sup>46</sup> Bellermann, *Die Mensuralnoten und Taktzeichen*, 55.

<sup>47</sup> They are Ghiselen, *Missa Narayge*, Cum Sancto Spiritu (p. 69), Josquin, *Missa ad fugam*, Benedictus (p. 71), and Brumel, *Missa ut re mi fa sol la*, Agnus I (p. 96).

only the tenor voice on grounds that Heyden “unfortunately” neglected to include the other voices in his treatise.<sup>48</sup>

Bellermann’s book went through four editions, the last of which appeared as recently as 1963.<sup>49</sup> Later German scholars were heavily influenced by it, although some acknowledged its limitations. In the third volume of his *Geschichte der Musik*, published in 1868, August Wilhelm Ambros calls *De arte canendi* “one of the classic works on music, the worth of which has not been destroyed by the centuries—everywhere excellent and thorough erudition.”<sup>50</sup> Hugo Riemann includes Heyden as one of only six authorities from the 16th century in the chronological table of theorists in his 1878 *Studien zur Geschichte der Notenschrift*.<sup>51</sup> On Heyden’s authority, Riemann defines cut signs without qualification as signs of duple proportion or doubling of the standard tempo.<sup>52</sup> Ernst Praetorius,<sup>53</sup> Johannes Wolf,<sup>54</sup> and Georg Schünemann<sup>55</sup> take account of a wider range of sources in their studies of *tactus* and mensuration, but remain indebted to some aspects of Bellermann’s outlook. Wolf describes Bellermann’s work as an excellent textbook which, despite some deficiencies, had not been superseded in 1913.<sup>56</sup> Schünemann acknowledges that Heyden’s single-*tactus* theory is a simplification of earlier practices, but nevertheless maintains—contrary to Heyden’s explicit testimony—that musicians did not vary the speed of the *tactus* within a piece until the mensural system began to disintegrate toward the end of the 16th century.<sup>57</sup> Heyden’s biographer Alfred Kosel asserts that because Heyden was an educator who had close contact with musical practice, his theory can be taken at face value as a description of the way 16th-century music was performed.<sup>58</sup>

The views of this German school were transmitted to the English-speaking world through the influential writings of Curt Sachs<sup>59</sup> and Willi Apel.<sup>60</sup> Apel defines *tactus*

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<sup>48</sup> Bellermann, *Die Mensuralnoten und Taktzeichen*, 61.

<sup>49</sup> Bellermann, *Die Mensuralnoten und Taktzeichen*, 4th ed., ed. by Heinrich Husmann (Berlin: De Gruyter, 1963).

<sup>50</sup> “Eines der klassischen Musikwerke, deren Werth die Jahrhunderte nicht zu zerstören vermocht haben—überall tüchtige und gründliche Gelehrsamkeit.” August Wilhelm Ambros, *Geschichte der Musik*. III: *Geschichte der Musik im Zeitalter der Renaissance, bis zu Palestrina* (Breslau: Leuckart, 1868) 158.

<sup>51</sup> Hugo Riemann, *Studien zur Geschichte der Notenschrift* (Leipzig: Breitkopf & Härtel, 1878) iii. The other 16th-century theorists in this list are Aaron, Glarean, Zarlino, Heinrich Faber, and Lucas Lossius. Riemann discusses other theorists in his text, but singles out the ones in the table as the most important.

<sup>52</sup> *Ibid.*, 267–68. Riemann acknowledges that cut signs cannot represent proportions when there is no integral sign in a piece to which they may be compared, but he states that signs of diminution represent tempos twice as fast as integral signs even when they do not function as proportions.

<sup>53</sup> Ernst Praetorius, *Die Mensuraltheorie des Franchinus Gafurius und der folgenden Zeit bis zur Mitte des 16. Jahrhunderts*. Publikationen der Internationalen Musikgesellschaft, Beihefte II/2 (Leipzig: Breitkopf & Härtel, 1905).

<sup>54</sup> Johannes Wolf, *Handbuch der Notationskunde*, 2 vols. Kleine Handbücher der Musikgeschichte nach Gattungen 8 (Leipzig: Breitkopf & Härtel, 1913–19).

<sup>55</sup> Georg Schünemann, “Zur Frage des Taktschlagens und der Textbehandlung in der Mensuralmusik”, *Sammelbände der Internationalen Musikgesellschaft* 10 (1908–09), 73–114, and Georg Schünemann, *Geschichte des Dirigierens* (Leipzig: Breitkopf & Härtel, 1913) 36–68.

<sup>56</sup> Wolf, *Handbuch der Notationskunde*, vol. 1, 381.

<sup>57</sup> Schünemann, *Geschichte des Dirigierens*, 64–65. Schünemann estimates the presumed standard speed of the *tactus* at approximately MM 72 on the basis of a small selection of comments by theorists other than Heyden in “Zur Frage des Taktschlagens”, 87–88.

<sup>58</sup> “As a teacher and musician, Sebald Heyden was not a theorist removed from the world, but an educator who had the closest relationship with youth; precisely for that reason, he could express in words that which experience had taught him, and he could therefore also be a helper and adviser to others with his scholarly works.” (“Sebald Heyden war als Lehrer und Musiker kein weltferner Theoretiker, sondern er war ein Erzieher, der mit der Jugend in engster Verbindung stand, der gerade deshalb im Worte das nachschaffen konnte, was ihn die Erfahrung gelehrt hatte und der darum auch anderen mit seinen wissenschaftlichen Werken Helfer und Berater sein durfte.”) Kosel, *Sebald Heyden*, 52.

<sup>59</sup> Curt Sachs, *Rhythm and tempo: A study in music history* (New York: W.W. Norton, 1953).

<sup>60</sup> Willi Apel, *The notation of polyphonic music, 900–1600* (Cambridge, Mass.: The Mediaeval Academy of America,

simply as “a fixed, i.e., unchangeable unit of time,”<sup>61</sup> omitting any reference to the physical motion to which the term applied in the 15th and 16th centuries. He claims that “variability of tempo may have been practically unknown” before the end of the 16th century; previously “there existed only one way of changing the temporal duration of a given note, that is, by proportions. Thus the proportional signs, if used simultaneously in all the parts, represent the tempo marks, nay, the metronomic marks, of the fifteenth and sixteenth centuries.”<sup>62</sup> Although he goes on to qualify this statement, he could not have taken it as a point of departure without accepting Heyden’s system as the norm in relation to which other alternatives were viewed as deviations.

Why did so many first-rate scholars take Heyden’s interpretations of signs for a description of real practices when he himself stated so clearly that his contemporaries did not follow his rules and that his theory was a reconstruction based on historical research, not a description of first-hand experience? Some of the factors that attracted later musicologists were surely the same as those that impressed Heyden’s contemporaries: his rationality, clarity, erudition, and authoritative reputation among his followers. Other factors have more to do with the preoccupations of the 19th and 20th centuries than with those of Heyden’s time. From a practical point of view, Heyden offered workable solutions to the challenging problems posed by the most complex examples of mensural notation. The assumptions and methods on which he based his conclusions did not arouse suspicion among early musicologists, because his approach to music history was essentially the same as their own. Like him, they learned about music of the past by analyzing samples of written music by “great composers” and extrapolated observations about signs from one context to another.

Aesthetic and historical beliefs also influenced the reception of Heyden’s theory among musicologists of the past 150 years. Heyden’s uniform *tactus* functions as an abstract coordinator of tempo relations and often obscures or conflicts with the rhythmic grouping of the notes that it measures, especially when Heyden “resolves” relatively complex notations into simpler forms. For example, when he transcribes  $\bigcirc$  to  $\text{♠}$  by doubling the note values (and transferring the *tactus* from the semibreve to the breve), he removes the notational representation of the ternary grouping of *tactus*.<sup>63</sup> His resolutions of more complex notation, such as the transcription of major prolation to  $\text{C}$  in Ockeghem’s *Missa prolationum*,<sup>64</sup> obscure still further the mensural structures implied by the original notation. Early musicologists seized on this feature of Heyden’s theory to bolster their image of mensural rhythm as free-flowing and devoid of accentual quality. This image was a key factor in the Romantic notion of the pure spirituality of the so-called Palestrina style. Schünemann insists that the *tactus* was a purely external means of time measurement with no relation to accent or rhythmic grouping, and that the absence of accents was what gave mensural music its “proper churchly character”.<sup>65</sup> Sachs

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1942). The book went through five editions from 1942 to 1953; the fifth edition was reprinted with revisions in 1961.

<sup>61</sup> Willi Apel, *The notation of polyphonic music, 900–1600* (5th ed.; Cambridge, Mass.: The Medieval Academy of America, 1953) 147. Paraphrases of this definition recur on pp. 190 and 191.

<sup>62</sup> *Ibid.*, 189–90.

<sup>63</sup> Heyden illustrates this procedure in *De arte canendi*, 75–79 (Miller translation, 77–79).

<sup>64</sup> *Ibid.*, 69–70 (Miller translation, 73–74).

<sup>65</sup> Schünemann regards the absence of barlines as support for the view that mensural music was without accents. “What is striking ... is ... the absence of barlines, which ... gave [the music] that purely musical rhythm, fully liberated from the earthly, which so often lent works their proper churchly character.” (“Das Auffallende ... ist ... das Fehlen der Taktstriche, das ... [der Musik] jenen vom Irdischen ganz losgelöste, nur rein musikalische Rhythmik gab, die den

rejects the concept of accent-free mensural rhythm as a “pious legend”, but nevertheless maintains that *tactus* was unrelated to rhythm and that accents had nothing to do with mensuration.<sup>66</sup>

For some musicologists, concepts of rhythm inspired by Heyden’s theory also served to distinguish the newly defined “Renaissance” from the preceding “Gothic” and the following “Baroque” historical eras. Ambros, the first scholar to apply the term “Renaissance” to a historical period in music, stresses fluidity as the defining feature of Renaissance rhythm. He praises Heyden for demonstrating how to transcribe  $\circ$  to  $\text{♩}$ , accepting without question Heyden’s contention that the procedure has no effect on the meaning of the notation.<sup>67</sup> Schönemann contrasts the alleged tempo stability of classic mensural music with the expressive tempo variability that inaugurated a new historical era toward the end of the 16th century.<sup>68</sup> Sachs characterizes the difference between “Renaissance” and “Gothic” rhythm as “simple, sober clarity versus complex involution and dimness; free, creative imagination versus the engineering spirit and delight in technical feats; and satisfaction to the eyes and the ears against satisfaction to reason and reckoning”.<sup>69</sup> At the other end of the chronological spectrum, he sees foreshadowings of the “Baroque” in the “clean-cut two-beat *tactus*” of late 16th-century *canzonette* and *balletti*—a beat of a wholly different type from the rhythmically neutral *tactus* of the “Renaissance”.<sup>70</sup>

In 1960 Carl Dahlhaus called attention to the conflicts between Heyden’s theory and the music that it purports to explain and concluded that the principle of uniform *tactus* “does not clarify the older system of mensuration and proportion, but contradicts it”.<sup>71</sup> Since then, scholars have become increasingly open to the view that mensural notation was not a static, uniform, and logically consistent system, as they have come to appreciate the diversity and cultural relativity of human beliefs and practices more generally. It is as easy for us to be skeptical of Heyden’s claim for the universal validity of his system as it was impossible for him to doubt it. Nevertheless, Heyden’s view remains to this day the orthodox standard against which alternative interpretations are forced to contend. The entry on Heyden in the current edition of *Die Musik in Geschichte und Gegenwart* goes so far as to claim that Heyden’s work is distinguished by its closeness to musical practice!<sup>72</sup>

Heyden’s unquestionably brilliant theory may tell us little about what mensuration and proportion signs meant to Josquin, but it provides rich insights into the beliefs, values, and musical practices of Nuremberg in the 1530s. The lasting influence of his ideas on later musicology sheds similar light on the beliefs and assumptions underlying

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Werken so oft den ihnen eigenen kirchlichen Charakter lieh.” Schönemann, “Zur Frage des Taktschlagens”, 95–96. The fact that mensural music was as often secular as sacred did not concern him.

<sup>66</sup> Sachs, *Rhythm and tempo*, 241–57. For a contrary view of the relation between mensuration and rhythm, see Graeme M. Boone, “Marking mensural time”, *Music theory spectrum* 22/1 (spring 2000) 1–43.

<sup>67</sup> Ambros, *Geschichte der Musik*, vol. 3, 130–35.

<sup>68</sup> Schönemann, *Geschichte des Dirigierens*, 64–65. Schönemann applies the term “Renaissance” to the 17th century and refers to the music of the 15th and 16th centuries simply as “mensural music”, but he agrees with Ambros and Sachs in distinguishing each of these time spans as a distinct historical era.

<sup>69</sup> Sachs, *Rhythm and tempo*, 234.

<sup>70</sup> *Ibid.*, 264.

<sup>71</sup> “Sein [Heydens] Irrtum aber zeigt, dass die Tactustheorie Sebald Heydens das ältere Mensuren- und Proportionensystem nicht erklärt, sondern ihm widerspricht.” Dahlhaus, “Zur Theorie des Tactus”, 39.

<sup>72</sup> Bear A. Föllmi, “Heyden, Sebald”, *Die Musik in Geschichte und Gegenwart: Personenteil*. Ed by Ludwig Finscher (2nd ed., Kassel: Bärenreiter; Stuttgart: Metzler, 2002) vol. 8, col. 408.

our more direct musicological heritage. Paying attention not only to the content of Heyden's thought, but also to the beliefs and values on which it is based, can enable us to appreciate his work for what it is, rather than mistaking it for what it is not. In this light, Heyden emerges not as a witness for the notational practices of his time, but as a pioneer of the field that we now call historical musicology.

