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Cadence as a "Metaphor of Instability" and "Conclusive Unity": A Brief *Excursus* Between Grammar and Music

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Abstract: The structural development of what we understand as cadence has a long and complex history associated with an awareness and appreciation of musical elements assimilated by a decodification process that is related to adapted morphology. Thus, the connection between music and text goes beyond its joint praxis: it lends structural elements from its main vehicle (text), engendering a true *corpus grammaticae musicae*. In general terms, this principle resulted in parameters from both synchronic and diachronic dimensions, i.e., a specific set of intervals with a particular melodic progression. The argument presented in this study aims to exam the musical treatises through the end of the fifteenth century in testimonies that contain evidence that corroborate a probable dichotomy between understanding of cadence as a "metaphor of instability" and "conclusive unity".

Keywords: History of music theory; theory of cadence; music grammar; 15th-century music theory.

Cadência como "metáfora de instabilidade" e "unidade conclusiva": um breve *excursus* entre gramática e música

Resumo: O desenvolvimento estrutural do que se entende por cadência tem uma longa e complexa jornada associada à compreensão dos elementos musicais, assimilados por uma decodificação vinculada a uma morfologia adaptada. Assim, a conexão entre música e texto vai além de sua prática conjunta: empresta elementos estruturais de seu veículo principal (texto), gerando um verdadeiro *corpus grammaticae musicae*. Em termos gerais, este princípio resultou em parâmetros tanto de dimensões sincrônicas quanto diacrônicas: ou seja, um conjunto específico de intervalos com suas respectivas progressões melódicas particulares. O argumento apresentado neste estudo objetiva o exame dos tratados musicais até o final do século XV em testemunhos que contenham evidências que corroborem para uma provável dicotomia entre a compreensão da cadência como "metáfora da instabilidade" e "unidade conclusiva".

Palavras-chave: História da teoria musical. Teoria da cadência. Gramática musical. Teoria da música no século XV.

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The position of music as *scientia media* in medieval music treatises comprises processes subjected to assorted interpretations of the extant Greek theory and adaptations of the phenomenological elements of Latin grammar. Besides the tradition related to the sonorous number, the conjunction between text and music generates formulations and terms that are references to musical events, which initiates a process of similarities and dissimilarities between both traditions.

Within grammar, syntactic analysis is inserted into *discretio*—one of the four parts of *lectio* comprehended among the *officia grammaticae artis*[1]: where complete syntactic units (*oratio*, *sententia*) are separated by divisions (*distinctiones*)[2], in which smaller structures (*comma*, *colon*) are presented. Since Carolingian reform, musical theorists have appropriated such terms at a lexical and semantic level, formatting a *corpus* of musical morphology almost exclusively on textual terms. In these treatises, neologisms and preferences are determined by certain terms that are applied in detriment to particular needs of the musical manifestation in their context. And as it will be observed, some of these terms are related to what will later be known as "cadence".

In general, when it comes to the idea of "cadence" in music, we immediately associate it to "repose", "stability", "conclusion", or even some level of discourse[3] segmentation. From an abstract point of view, music constitutes a connection and an indication of some type of opposites which may also be related to this idea. It is through this bias that we have the equation to the multiple levels of *arsis* and *thesis* originated in the Greek grammar —adapted to Latin grammar[4]—that constitutes one of the central elements in musical discourse.

Thus, along this continuous opposition process as presented through the *elatio* and *depositio* phenomena, the idealization of cadence emerges from the confluence between textual meters and consonance. Thus, this circumstance constitutes a fundamental element to the musical structure as a whole, acting as a necessary semantic pathway for the juxtaposition of textual-musical ideas. Concerning this aspect, Hucbald (c.840-930) in his *De musica* (c.880) presents an explanation of the terms *"periodo"*, *"clausula"* and *"circuitus"*:

Verum cantilenae corpus "arsi" et "thesi," id est "elauatione" tonorum et "positione" completur, donec "periodo," id est "clausula" siue "circuitu" suis membris distincta terminetur (GROTANS, 2006: 191).	But the body of a song is performed with *arsis* and *thesis*, that is with a raising and positioning of sounds up until the *periodo*, that is the *clausula* or the *circuitus*, where it is finished off, made distinct by means of its parts (2006: 191).

[1] As presented in the commentaries of Hildemar de Corbie to Diomedes, Victorinus and Audax formulations (GROTANS, 2006: 25).

[2] Words like *membrum*, *pars*, *particula* e *punctum* are treated as synonyms, sometimes as subdivisions to the *distinctiones* – or by the terms: *plena distinctio*, *subdistinctio* e *media distinction* (BOWER, 1989: passim).

[3] However, it is evident that there is a possibility of speech segmentation without the use of cadence itself.

[4] Even though the Latin language does not correspond exactly to the Greek grammatical references, since such accents refer to changes in intonation, unlike in Latin, where there is only shortening and prolongation of syllables. William Sidney Allen in *Vox Latina* argues that "[Latin] grammarians have slavishly misapplied the Greek system to the description of Latin" (1978: 84).

This understanding is aligned with earlier grammatical and rhetorical definitions such as those pointed out, for example, by Isidore of Seville in his *Etymologiae* (c. 600-625). In this case, besides the established hierarchy between rhetoric and dialectic elements[5], Isidore situates the empirical process in the structure of "*periodos*", relating them to both the structural aspect and the act of eloquence itself: "However, prayer is incomplete until after several members have concluded the period (*periodos)*, that is, the final clause of prayer […]. The period (*periodos)* cannot surpass in amplitude what can be expressed in one breath" (ISIDORO DE SEVILLA, 2004: 370)[6]. Thus, the final clause or its portion (*comma*) that leads or completes the discourse must be aligned with this segmenting principle. In the context until Hucbald, at least two complementary levels concerning the term *"clausula"* could be understood by grammar and music: (1) relative to the rhythmic circumstance that ends or concludes a certain idea; and (2) with regard to the sentence itself (as a whole)[7].

However, some other terms also borrowed from the *ars grammatica* are widely disseminated. Guido d'Arezzo (c.992-1050), for example, in his *Micrologus* (c.1026) applied the term *"occursus"* to demonstrate the conjunction between two parts in unison. On the other hand, in the so-called "Montpellier Organum Treatise" ("*Diaphonia duplex cantus est"* fac. de méd. H 384), written in c. 1120, the *organum* was systematically organized into clauses (*clausulae*), which is comprised of three parts: an inception (beginning), *voces organales* (intermediate organal section), and *copula* (cadence) (BLUM, 1959: 17). The author also delimits the cadence by means of the act of joining (*copulatio*) of notes in a sentence: "Si duae tantum sint voices in clausula, non nisi copulatio est ibi"[8], or "If only two notes are in a phrase, there is nothing but a cadence" (1959: 23). Or even in the *Commentarius in Micrologum Guidonis Arentini* (c. 1070-1110), in which the anonymous author uses "*clausula"* in the sense of "phrase" such as *"Clausulas vocat consonantias, quia continente et claudunt hanc vocem harmoniam, id est modulationem"* (1917: 107), and he also uses the term "*neuma*"[9] in reference to the final melisma of the antiphons models of each mode[10], as quoted in the doxology of the antiphon *Primum quaerite regnum Dei*[11].

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[5] "Componitur autem instruiturque omnis oratio verbis, commate et colo et periodo. Comma partícula est sententiae Colon membrum. Periodos ambitus vel circuitus. Fit autem ex coniunctione verborum comma, ex commate colon, ex colo periodos. [...] sed adhuc pendet oratio, sicque deinde ex pluribus membris fit periodos, id est extrema sententiae clausula" (ISIDORO DE SEVILLA, 2004: 370) ("All orations are constructed by words, and its structure in *comma*, *colon* and *periodo*. Comma is a small part of the phrase. *Colon* is a member of the same. *Periodo* is the complete phrase. The *comma* is integrated through combination of words; the coordination of *commata* is a limit of a concordance […] however, the sentence remains incomplete until, after a few members, it be concluded, that is, [with] a final clause", my translation).

[6] "sed adhuc pendet oratio, sicque deinde ex pluris membris fir periodos, ed est extrema sententiae clausula [...]. Periodos autem longior esse non debet quam ut uno spiritu proferatur" (ISIDORO DE SEVILLA, 2004: 370).

[7] According to William G. Waite, this ambiguity concerning the term comes from a metonymic construction derived from treatises on the theoretical elements of the Latin *cursus* (1961: 149).

[8] As presented in folio 122^{v} of the manuscript, the anonymous author describes the phrases with three, four and five notes using the word "clause" in a position similar to "copula". "Si quinque, est ibi inceptio et duae voces organales et clausula", which means, "If five [notes in phrase], in that place is a beginning, two organal notes and a cadence". This metonymic use of the term "clause" (used essentially in reference to the phrase itself through the same treatise, according to Blum, is probably applied "by mistake".

[9] Which is derived from *νόημα* (meaning, sense or gesture). In *Micrologus*, Guido also often uses this term in the general sense of "musical gesture" (notes). In Chapter XI (Quae vox. et quare in cantu obtineat principatum), the author relates it to the need for one of the six consonances in the final gesture of singing:

Among other correlations, Johannes Cotto (Affligemensis) in *De musica* (c. 1100) is one of the most prominent authors who establishes significant relationships between grammar and music morphology. In Chapter 10, he explains cadential terms in a very detailed manner through the "improper use" of the term "tone" in resemblance to "mode". As one of the explanations of this inappropriate use is "somehow justifiable", as he himself says, the author comments on similar relationship that occurs between tones and *distinctiones,* justifying the use of the term *distinctiones* with a "mode" status. The noteworthy use of the term *distinctiones* by Donatus –an authoritative source on this subject– is substantially important to our argument.

Vel certe toni dicuntur ad similitudinem tonorum, quos Donatus distinctiones vocat; sicut enim in prosa tres considerantur distinctiones, quae et pausationes appellari possunt, scilicet colon id est membrum, comma incisio, periodus clausura sive circuitus, ita et in cantu. In prosa quippe quando suspensive legitur, colon vocatur; quando per legitimum punctum sententia dividitur, comma, quando ad finem sententia deducitur, periodus est. Verbi gratia: Anno quinto decimo imperii Tiberii Caesaris, hic in omnibus punctis, colon est; deinde ubi subditur: Sub principibus sacerdotum Anna et Caipha, comma est; in fine autem versus ubi est Zachariae filium in deserto periodus est (AFFLIGEMENSIS, 1950: 79).

Or, very likely, the modes are called "tones" from a resemblance to the tones that Donatus calls *distinctiones*. For just as in prose three kinds of distinctions are recognized, which can also be called "pauses" –namely, the colon, that is, "member"; the comma or incision; and the period, *clausula* or *circuitus*–so also it is a period. In prose, where one makes a pause in reading aloud, that is called a colon; when the sentence is divided by an appropriate punctuation mark, it is called comma; when the sentence is brought to an end, it is a period. For example, "Now in the fifteenth year of the reign of Tiberius Caesar," – here and at all such points there is a colon. Later, where it countinues "Annas and Caiapha being the high priests", a comma follows; but at the end of the verse, after "the son of Zacharias in the wilderness," there is a period (BABB; PALISCA, 1978: 116).

After this illustration through a citation of a Bible passage from Luke 3:1-2, Cotto also provides a concrete example of the application of this terminology in music. As cited below, he elucidates that these "punctuation marks" are "dwelling on the fourth or fifth note above the

"Voci vero quae cantum terminat, principium eius cunctarumque distinctionum fines vel etiam principia opus est adhaerere" (1955: 139).

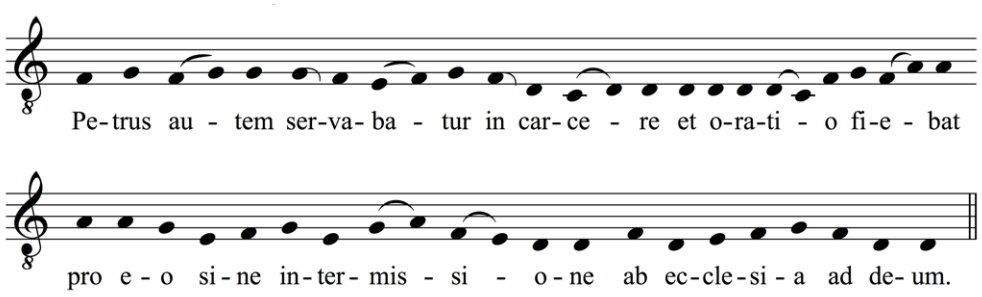
[10] The relation between the term *"noema"* and *"clausula"* is already discussed by Quintilian in *Institutio oratoria.* The author presents an apparent syllogism used by "*novi*" in relation to the Greek term: [8.5.11] "[…] For *epiphonema* is an exclamation attached to the end of the statement or a proof by way of a climax. […] There is also what our modern rhetoricians call the *noema*, a term which may be taken to mean every kind of conception, but is employed by them in the special sense of things which they wish to be understood, though they are not actually said […]. There is also what is called a *clausula*. If it merely means a conclusion, it is perfectly correct and sometimes a necessary device […]. But, nowadays, something more is meaningful, for our rhetoricians want every passage, every sentence to strike the ear by an impressive end." (1986: 289).

[11] "Si eidem cantui...velis subiungere versum...aut psalmum...aut aliquid, scilicet vel 'Saeculorum amen' vel neumam, sicut additur post antiphonam "Primum quaerite regnum Dei", [...] maxime opus est ad finalem illam coaptare." (1917: 39). The same use of the term can be observed later in *Speculum musica*e by Jacobus de Liège: "secundum Veteres, pertinebat, non poterat aptari neuma "saeculorum" versus, qui cantui conveniebat acuto, gravi cantui, vel e converso" (1973: 86).

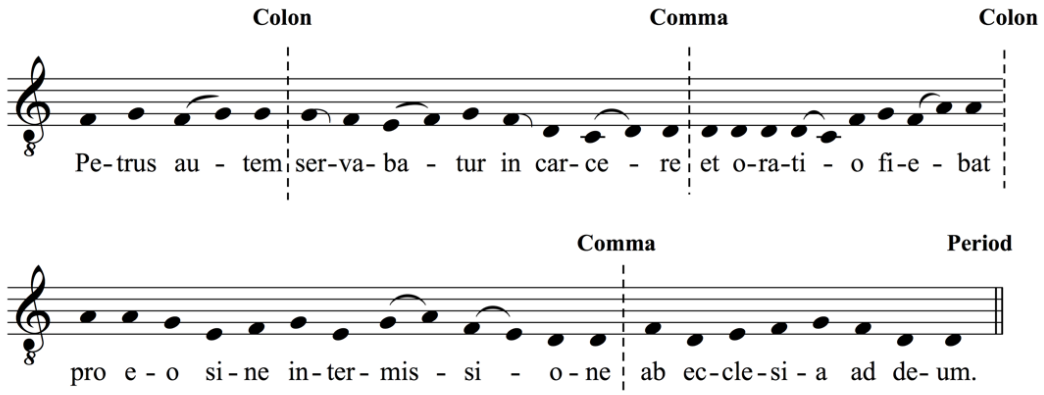
final", that is, the respective *diatessaron* and *diapente* regarding a certain final mode. This can be illustrated by the antiphon *Petrus autem servabatur* sung in the chant for the feast of *Petri et Pauli* (Ex. 1a). It is interesting that, through this illustration, the author provides us a truly cadential taxonomy, establishing not only a graded structural reference by means of textual segmentation, but also relating these specific points to certain notes (fourth and fifth) above the finale. Ex. 1b presents the segmentation with these terms.

Similiter cum cantus in quarta vel quinta a finali voce per suspensionem pausat, colon est; cum in medio ad finalem reducitur, comma est; cum in fine ad finalem pervenit periodus est. Ut in hac antiphona: Petrus autem colon, servabatur in carcere comma, et oratio fiebat colon, pro eo sine intermissione comma, ab ecclesia ad Deum periodus. Qua in re animadverti potest, quod modi non omnino abusive toni vocantur, nec incongrue distinctionum seu accentuum nomen sortiuntur, quorum varietates imitantur (AFFLIGEMENSIS, 1950: 79-80).

Likewise, when a chant makes a pause by dwelling on the fourth or fifth note from the final, there is a colon; when in mid-course it returns to the final, there is a comma; when it arrives on the final note, there is a period. So, in the following antiphon: "Peter therefore" colon "was kept in prison" comma "but a prayer was made" colon "for him without ceasing" comma "by the church unto God" period. This way, it can be seen that the modes are not entirely without justification to be called "tones" and not inappropriately do they receive the nomenclature of the punctuation marks or accents, whose varieties they copy (1950: 116, with modifications).



Ex. 1a: Antiphon *Petrus autem servabatur*. Transcription based on the version presented in St. Gallen, Stiftsbibliothek, Cod. Sang. 391, f. 87^{r} (c. 1000).



Ex. 1b: The antiphon *Petrus autem servabatur* with the phrasal segmentation as suggested by Johannes Cotto.

On treatises from the late twelfth century onwards, the old plainchant theory—along with the inheritance generated by the practice of organum—was adapted to support the musical precepts of this new context. The distinction made between different levels of interval quality, such as thirds, for example, has become more frequent since its first appearance in the Treatise of Milan and, above all, in the Montpellier Organum Treatise[12]. The recognition of more comprehensive classifications instigates a systematization that combines numerical precepts present in the division of the monochord and the "natural" process derived from the "Aristotelian principle"—as quoted by Dahlhaus (1986 and 1990) and taken up by David E. Cohen (2001)—where natural imperfection strives for perfection (DAHLHAUS, 1986: 126). Consequently, among the consonant intervals, one recognizes those which are perfect and those which are imperfect (or discords)[13].

Thus, for the conclusion of the clause in harmonic terms, there is a previously required unstable condition, which, in other words, raises the comprehension of cadence to a "metaphor of instability" between imperfect and perfect consonances.

In the early fourteenth century, the *discantus* (as a distinct technique of *organum*) is understood as the "sounding [together] of diverse melodies according to the [rhythmic] mode and to mutual correspondence in length through concords", as per Johannes da Garlandia in *De mensurabili musica* (FULLER, 2002: 485-486), and moving essentially "by contrary motion", if we also add the approach presented in *Tractatus de musica*[14]. In this context, the use of smaller notes between the strictest consonances causes an emergence of causal formulas related to the succession of intervals. Thus, for each movement of the *cantus firmus*, a procedure for the voice in *discantus* is offered, as demonstrated in *Discantus positio vulgaris* (c.1230), for example, where several formulas have progressions between two different perfect consonances (between unison, octave, and fifth), and include the aid of a note of smaller value in the part of the *discantus* in a melismatic contour. Consequently, there are passages which are sometimes produced with imperfect concords and sometimes with discords between the voices[15].

However, the explanation of the process inherent in the voice-leading of imperfect consonances, or dissonances, that are "naturally" conducted by perfect consonances reached a significant milestone with Marchetto da Padova (c.1274-1319). In his *Lucidarium* (1317-1318) during the exposition of the sixth chapter in the fifth treatise, the author presents issues concerning the treatment of dissonance. Perfection (*consonantia*), according to Marchetto, is reached by the closest path (*propinque*) having a "compatible" dissonance[16], thus: "the less distant a

[12] Cf. Gut, 1976 (20-44).

[13] Depending on the many classifications present in this context, cf. note 15.

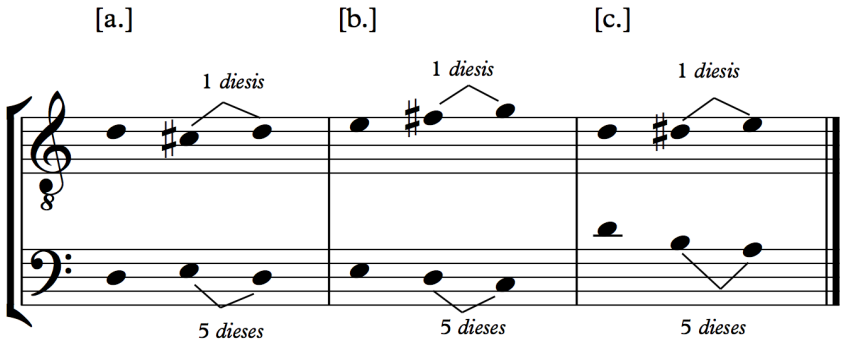
[14] "Discantus cantui debet esse contrarius, quamvis cum cantu debeat personare; sed in elevatione et depositione" (LA FAGE, 1864: 358).

[15] Johannes da Garlandia (*De mensurabili musica*) divides the intervals hierarchically into: perfect (unison, octave), medial (fifth, fourth) and imperfect (major and minor third) concords; imperfect (major sixth, minor seventh), medial (whole tone, minor sixth), perfect (semitone, tritone, major seventh) discord (GUT, 1976: 22). Fuller (2002: 488) presents an illustrative table with the various progressions found in the anonymous thirteenth-century treatise, *Discantus positio vulgaris.*

[16] Marchetto divides dissonance (or *diafonia*) into two categories: those which are compatible with hearing and the reason (*compatiuntur secundum auditum et rationem*) and those which are not. Among the former, we have the third, sixth and the tenth, and latter, the other intervals, like the second, tritone and seventh, which don't have the proximity of consonance as does the first one.

dissonance is from a consonance, the less distant it will be from its perfection, and the more it will be assimilated"[17]. Finally, Marchetto defines: "dissonance is something imperfect which requires something perfect, so that it can bring perfection"[18].

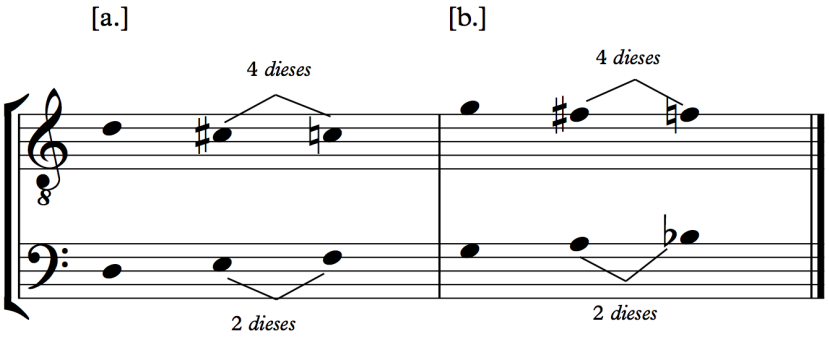
This smaller distance proposed by Marchetto has a clear relation to the controversial division of tone in five equal parts (*dieses*)[19]. To illustrate this concept, Marchetto refutes the idea of movement by only one voice while another moves just one *diesis*, subtly justifying his objection by the Augustinian principle in which the proportion between parts is more agreeable when compared as a whole, rather than an single element compared to another single element[20]. Therefore, Marchetto concluded that six *dieses* can be found in this operation: a chromatic semitone can be observed in one voice (which consequently creates a *diesis* till the next note). It creates a whole tone in another voice (or five notes) as it is showed in Ex. 2. In Ex.3, the progressions also count six *dieses*, however, these do not occur on the shortest path, that is to say, on the smallest number of *dieses* from the point of view of each voice.



Ex. 2: Although all examples have the same interval distance, option A, with the resolution in *diapason*, has a higher degree of perfection in comparison to the others (B and C) with a resolution at *diapente* (MARCHETTO DA PADOVA, 2007: 71)[21].

When Marchetto refers to this specific movement in these progressions, he uses a few terms that could be understood as metaphors which reflect a certain "instability" between the progression of the intervals. This "uncertainty" is associated by terms such as: *requerit* (requires); *tendit* (tends); *moveo* (moves); *inclinatio* (inclination). It is understood that by such metaphors, the author determines the cadential principle, although not named as such.

[17] "Quanto enim dissonantia minus distat a consonantia, tanto minus distat a sua perfectione et magis assimilatur eidem [...]" (2007: 69).
[18] "[...] dissonantia sit quoddam imperfectum, requirens perfectum, quo perfici possit" (2007: 69).
[19] Cf. Herlinger, Jan W., *Marchetto's Division of the Whole Tone* (1981: 193-216). In general terms, Marchetto establishes: the chromatic semitone (itself, 4 *dieses*), diatonic semitone (3 *dieses*), and the enarmonic semitone (2 *dieses*).
[20] As pointed out by Marco della Sciucca: "la beleza che consta di parti è bem più lodevole nella sua interezza che nelle sue parti: se le membra del corpo sono di per sé lodevoli per beleza, tanto più lodevole sarà l'intero corpo costituito da quelle membra" (MARCHETTO DA PADOVA, 2007: 193-194).
[21] "Dyapason autem est perfectior consonantia dyapente" (MARCHETTO DA PADOVA, 2007: 72).



Ex. 3: Even if the whole operation results in six *diesis*, the difference in at least one of the voices should be proceeded with one *diesis* (MARCHETTO DA PADOVA, 2007: 73). Consequently, the resolute progression would have a process as shown in the previous example.

Similarly, although a more detailed exposition, Jacobus de Liège (c.1260-after 1330) in his *Speculum musicae* (c.1330) also presents terms for the same process, such as: *inclinatio* (inclination); *attingo* (reach); *peto* (ask/seek); *perficio* (achieves), and also in a significantly original way, the use of the term *cadentia* (fall)[22]. Like Marchetto, all these nomenclatures metaphorically represent the unstable sound between an imperfect state and a more perfect one, as it may be observed in the following quotation, particularly about the "*Cadentia*":

Cadentia, quantum ad praesens spectat propositum, videtur dicere quendam ordinem vel naturalem inclionationem imperfectioris concordiae ad perfectiorem. Imperfectum enim ad perfectiorem naturaliter videtur inclinari, sicut ad melius esse, et quod est debile per rem fortiorem et stabilem cupit sustenari (MAW, 2010: 114).

Cadentia, as far as it concerns the present matter, seems to refer to a certain order or a natural inclination of a more imperfect concord[23] to a more perfect one. For it seems that an imperfect thing naturally inclines to a more perfect one, as if towards better being, and what is feeble wishes to be sustained by a thing that is stronger and stable (2010: 114).

II

The cadential process proceeds with significant changes–at least in theoretical sources—only towards the end of the fifteenth century. In this context, a cadence is theoretically and explicitly recognized as a structural unit that combines two specific elements: procedural (the progression of an imperfect towards a perfect interval) and static (the interval relationship between operational voices), i.e., respectively diachronic and synchronic elements if we use paraphrased

[22] Anonymous II uses this term as the metric match between long syllables and long notes: "...requiritur bona cadentia dictaminum cum discantu ita quod longe figure longis syllabis, breves brevibus nobiliter adptentur" (apud COUSSEMAKER, 1864-1876: I, 311b). The term was also used in the same sense by Gaffurius in *Extractus parvus musice*, when presenting the third of the four requirements for a good *discant*: "Tertio bona cadentia dictaminum cum discantu, ita quod longe figure longis sillabis, et brevis brevibus nobiliter adaptentur" (GAFFURIUS, 1969: 130).

[23] As David Maw elucidates, Jacques made distinction between concord and consonance–similarly to Jerome of Moravia in *Tratactus de Musica*. In this way, "consonance" is applied in the literal sense of the term, that is saying, "sounding together". Consequently, it attributes the quantitative aspects—the size of the interval between sounds—and qualitative—concordant or discordant, in other words, a "mixture which gives a sensory pleasure" and "displeasing to the senses", respectively (2010: 91).

linguistics terminology[24]. Under these conditions, among the most significant terminological aspects of music treatises from the late fifteenth century, we may call attention to four specific authors: John Hothby, Johannes Tinctoris, Florentinus de Faxolis, and Guilielmus Monachus.

The first of the list is the English theorist and composer, John Hothby (c. 1430-c. 1487) who presents an interesting relationship between grammar and music in his *Tractatus quarundam regularum artis music,* n.d. (GB-Lbl Add. 36986, f. 2–24v; I-Fn Pal. 472, f. 9–15)[25]. The motivation behind the *Tractatus* is not entirely clear. None of Hothby's treatises exist in definitive form, but supposedly emerge as class notes by his students and their copies. Therefore, the essay, in both content and disposition, is substantially different among the surviving testimonies.

Through the term "*clausula*", the author also sustains an equality status between text and music on a morphological level. The most interesting point about this definition is the detailed circumscription and the presence of a cadential taxonomy:

> Per le clausule sintende tutte le note intra luna righa et laltra. Et seguitano le clausule delle parole. che principalmente sono. 3. Cioe. Coma. Colon. Et periodus: […] Et come decto: le clausule della cantilena deno essere simile: alle clausule delle parole: per tal modo che se la clausula delle parole e suspensiva Cioe. Colon: la clausula della cantilena de essere da longa dalla voce finale. Et se la clausula delle parole e una subdistinctione. Cioe una Coma grammatica: la clausula del canto de essere mediocre: non troppo da longa: ne troppo apresso alla voce finale. Ma se la clausula delle parole e parieto (.i. periodus). Cioe fine della sententia: La clausula del canto de essere nella voce finale. overo nel tenore (SMITH, 2011: 72).

> By "*clausule*" one understands all the notes between a line and another. They follow the cadences of the words, of which there are principally three, named comma, colon and period […]. As I said, the *clausule* of a song should be similar to the *clausule* of the words, so that if the *clausule* of the words is suspending, that is, the colon, the *clausula* of the song should be distant from the final step [of the mode]. And if the *clausula* of the words is a smaller punctuation, that is, a grammatic comma, the cadence of the song should be moderate, not too long, and not too close to the final step. But if the cadence of the words is the period, that is, the end of the sentence, the *clausula* of the song should be on the final step or on the reciting pitch (translation based on SMITH, 2011: 72).

Besides the *clausula* definition, an interesting threefold taxonomy is provided here that includes a specific degree of conclusion within a polyphonic context[26] and is grounded on textual punctuation that is closely related to that used by Johannes Cotto in monophonic music. Thus, from this citation, we could classify cadences as: (1) *clausula suspensiva*, which is related to the colon and is considered a digressive clause regarding the modal final ("*essere da longa della voce finale*"); (2) *clausula mediocr*e, which is related to the comma and is considered a middle position clause in a phenomenologically sense; and (3) *clausula finale*, which is related to the period, and consequently,

[24] cf. Saussure, *Cours de linguistique générale* (1916: passim).
[25] That has been considered his "most developed treatise", according to Blackburn (2001: 323).
[26] If, of course, we assume the validation of the other argumentations which circumscribes this citation on this treatise, since there is no explicit reference to a polyphonic music in this passage. Actually the first sentence is not entirely clear, but, by conjecture, we could be understand the expression "*tutte le note intra luna righa et laltra*" in reference to each particular note from each voice of a polyphonic complex, in the cadence *momentum,* or different positions of certain repose places (cadences) just in a particular voice as well.

regarding the conclusion of the chant, or, by conjecture, one of the *partes*. Concerning the terminology itself, we could assume the parity between "*clausula*" and "cadence" in the sense of "conclusive unity", although the author does not provide any details about cadence at the processual dimension, this passage has enough evidence for us to consider this position.

On the other hand, the next two writers on our list have more information available on the treatises under consideration here. Johannes Tinctoris (c.1435-1511), in service to King Ferrante I in Naples, wrote twelve treatises and worked as a singer-chaplain, legal adviser and court tutor in music theory and practice; while the humanist Florentinus de Faxolis (d.1496) wrote about music especially at the request of Milanese Cardinal Ascanio Maria Sforza. Thus, we observe Faxolis's "great commitment at literary elegance and his parade of learning on music in antiquity bespeaks his desire to be recognized as a full-fledged humanist" (FLORENTINUS DE FAXOLIS, 2010: vii), and Tinctoris is the figure of a very experienced scholar and composer who writes aiming to clarify the multiple aspects of music, obviously including subjects on terminology and composition. Consequently, the pedagogical approach mastered by Tinctoris may be considered the *tour de force* of his treatises, already having a great influence on classical rhetoric and humanist studies[27].

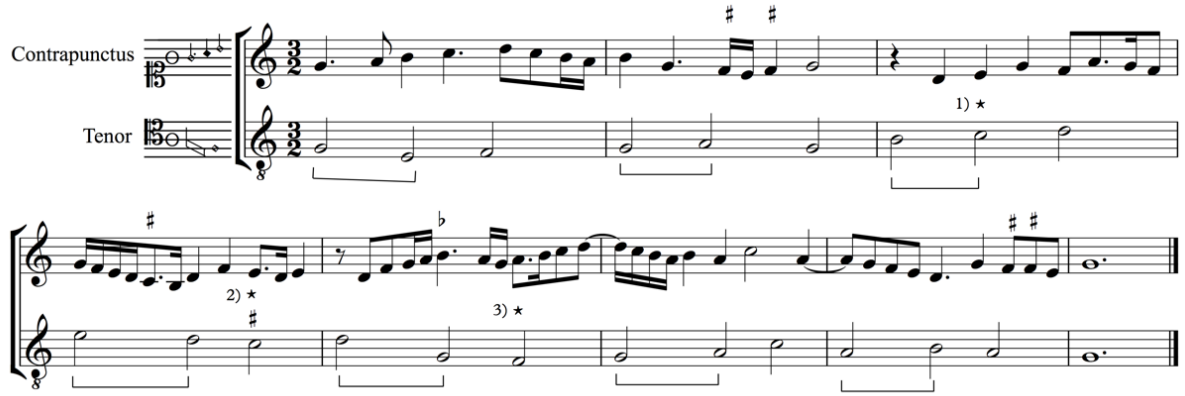
Concerning cadence, Tinctoris's efforts can be particularly observed in two treatises: *Liber de Arte Contrapuncti* (1477) and *Terminorum diffinitorium musice* (c. 1494). Towards terminology, it is interesting that Tinctoris has applied the third declension of "*perfectionis*" (often used as an adjective to a particular octave or fifth interval treating it like a noun). Therefore, the term "*perfectio*" is observed as a main choice when Tinctoris refers to elements of both procedural and static cadence i.e., "conclusive unity". The predilection for this term, however, is sometimes divided with the well-known term "*clausula*".

The third book of *Liber de Arte Contrapuncti* provides a discussion on cadence, specifically in Chapter V that addresses the fifth counterpoint rule. This rule is mainly concerned with the need for mode preservation when the contrapuntist uses cadence. To better understand the context of the citation, we present the integral transcription of this brief chapter (with musical examples):

Capitulum V
De quinta regula generali quae precipit supra nullam prorsus notam perfectio constituatur per quam cantus distonari possit
Quinta regula est quod supra nullum prorsus notam sive media, sive superior, sive inferior fuerit perfectio constitui debet per quam cantus distonatio contingere possit. Quodquidem penitus aurium judicio relinquendum censeo, ut hic (TINCTORIS, 2008: 370)

Chapter V
Concerning the fifth general rule that prescribes not to perform cadence (*perfectio*) on any note so that the chant can deviate from its own mode.
The fifth rule prescribes that any note, be it medium, superior or inferior [voice], shouldn't perform cadence (*perfectio*) in such way that the chant can deviate from its own mode. I believe that this can completely be left to the judgment of the ears, as it is shown here:

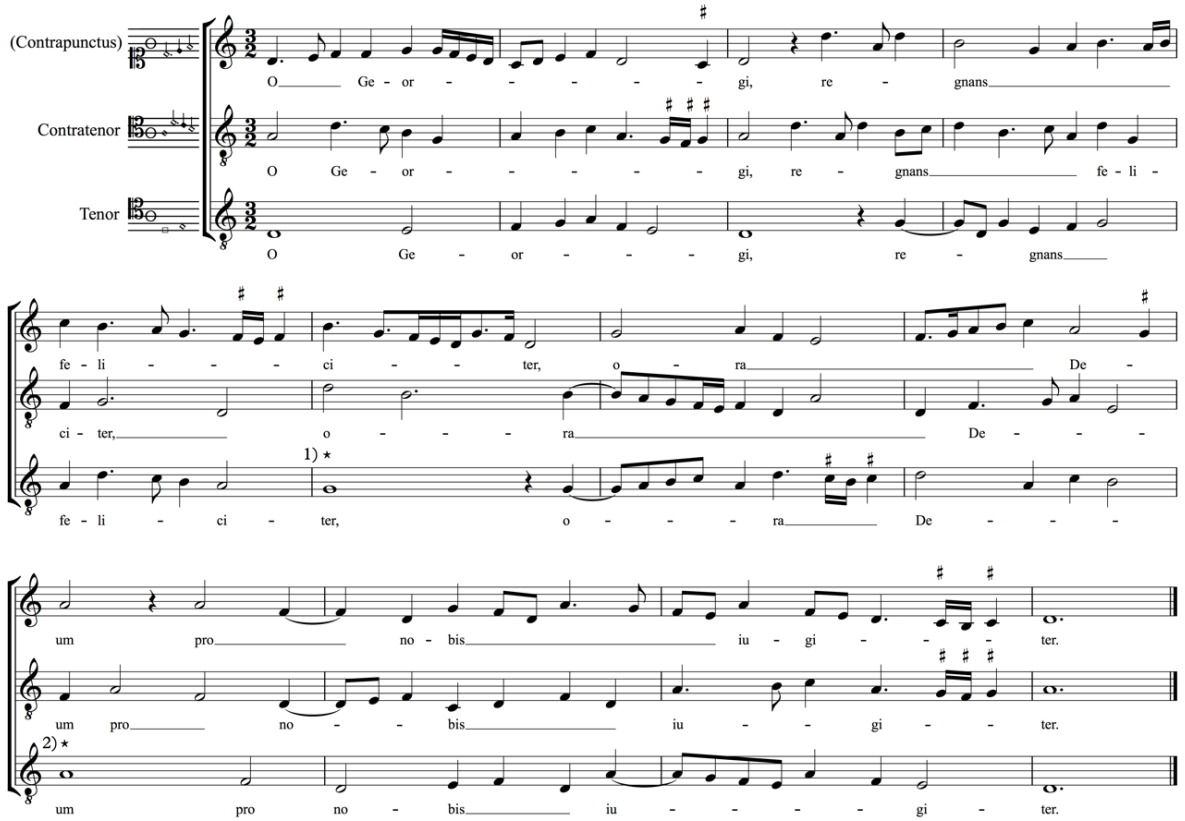
[27] Maybe the most inclined source of this approach is the short and unusual treatise *Complexus effectuum musices* (1473-1474), when the author affirms that music could provoke twenty effects such as moral, religious, psychological, praxis, aesthetics, among others.



Ex. 4: First example concerning Tinctoris's fifth rule (Transcription based on D'Agostino edition, 2008: 371-373, although with considerable alterations about *ficta* suggestions).

Sumitur autem hic perfectio pro cuiusque cantus media seu finali clausula per concordantiam perfectam regulariter efficienda, quamvis et interdum loco eius assumatur imperfectam, ut hic (TINCTORIS, 2008: 370-372).

Instead, it is assumed that the cadence (*perfectio*) as a conclusion (*clausula*) in the middle or at the finale of any chant, is normally performed in perfect consonance, sometimes an imperfect consonance is performed in its place, as is shown below:



Ex. 5: *O Georgi, regans felciter*. Second example concerning Tinctoris's fifth rule (Transcription based on D'Agostino edition, 2008: 373).

In the first part of the presented rule, Tinctoris uses the term "*perfectio*" as "cadence", but from the perspective of the processual movement of the voice—which is referenced individually—towards the perfect interval. In fact, as observed in Ex. 4, this prescription is about how to carefully proceed instead of establishing an imperfect-to-perfect movement—particularly a sixth-to-octave—on pitches that lead to another mode. Considering the example of the seventh mode, the stressed points 1, 2 and 3 (which was already presented in the referenced text) show the evaded cadences: on E (the tenor proceeds to C instead of the "erroneous" E); again on E (the tenor again proceeds to C instead of the "erroneous" E); and on A (the tenor proceeds to F instead of the "erroneous" A), that is, regular and irregular finals[28] of the third mode. So, when the attention is drawn to the example itself, the term "*perfectio*" is understood as a "conclusive unity" that is established by the perfect octave. Actually, this idea is very close to what was previously discussed about Jacques de Liège regarding the term "*cadentia*".

In the second part of the rule, however, Tinctoris presents both terms ("*perfectio*" and "*clausula*"). In the entire treatise, it is verified that this passage is the only one where Tinctoris uses the term "*clausula*". Here, this term simply refers to the partial or final conclusion in a structural point of view, as traditionally stated by former writers. This understanding, however, seems to reinforce "*perfectio*" in the sense of "conclusive unity". In this way, the respective illustration (Ex. 5) also helps us to better understand its use. As Tinctoris presents the use of imperfect intervals "at the *perfectiones*", we immediately relate this term to the two-fold dimensions of a cadence (as it can be seen in points 1 and 2 of the example). In a similar way, the title of the seventh rule may confirm this hypothesis concerning the use of this terminology when we see: "the seventh general rule that vetoes performing *'two cadences'* (*'duas perfectiones'*) always in the same place"[29].

The relationship between "*perfectio*" and "*clausula*" in Tinctoris's dialectics reaches a clearer stage in *Terminorum*. The respective entries reveal definitions that confirm meaningful perspective differences about the same subject.

Clausula est cujuslibet partis cantus particula in fine cujus vel quies generalis vel perfectio reperitur (TINCTORIS, 2004: 10).	*Clausula* is a small fragment of any part of a chant where either general repose or perfection is found at the end.
Perfectio equivocum est ad duo; nam notae in sua perfectione permanentiam, et totius cantus aut particularum ipsius conclusionem designat. Unde pro primo significato sic diffinitur:	*Perfectio* has two meanings: it can designate the note which persistes in its ternary division and in the conclusion of the whole chant as well as in the conclusion of its sections. The first meaning is defined:
Perfectio est quod nota maneat perfecta ostensio. Et pro secundo sic: Perfectio est totius cantus aut particularum ipsius conclusio (TINCTORIS, 2004: 36)	*Perfectio* manifests the fact that a note remains perfect. And the second: *Perfectio* is the conclusion of a whole chant or the conclusion of its sections.

[28] Considering Tinctoris's own terms, as stated in *De natura et proprietate tonorum* (1975: passim). In this case, the irregularity of the third mode is considered by *♭ molle*.

[29] "De septima regula generali qua duas perfectiones in oudum loco fieri continue vetatur" (TINCTORIS, 2008: 376).

If we examine the "*clausula*" entry, the term is understood as general repose (*quies generalis*) or perfection (*perfectio*)–or cadence, if we apply the previous argument–that could be found in a section of any voice of the chant (*cujuslibet partis cantus*). In other words, "*clausula*" is the *momentum* (phenomenologically speaking) of the consummation between a cadence of a particular voice and general repose. However, some sort of ambiguity remains in the relationship between the "particular element" that coincides with "general completeness". Thus, the partial key of this resolution comes from the "*perfectio*" entry, particularly the second meaning. In this case, Tinctoris clearly defines the two-fold meaning of the term concerning the conclusion of both voices and one in particular in a harmonically and melodically way. Thus, the cadence ("*perfectio*") is understood over again as "conclusive unity", being the "*clausula*" a complementary term especially concerned with the melodic movement and the sense of completeness (in both the particular and general sense). However, it is not absolutely clear if we can apply these terms according to Tinctoris at any desirable degree of this complete *momentum;* the definitions implicate only a certain degree of resolution.

Beyond Tinctoris, other cases for the use of cadential terminology may contribute to this particular subject. In this context, important evidence is found in *Liber musices* (1485-1492) written by Florentinus de Faxolis. During an exposition on counterpoint rules in Book 2, Chapter 14 (*De contrapuncti regulis*), the author uses the term *"cadentia"* to introduce the understanding of cadence as a "conclusive unity" while also identifying the process into the structure:

Novissime quoque animadvertendum videntur: paenultima notula cadentiae sive conclusionis syllaba, in neumis termiandi thematis per imperfectam fieri (FLORENTINUS DE FAXOLIS, 2010: 144).	And finally, it seems necessary to bear in mind that the *penultima* note of a cadence or syllable of a conclusion should, in the *neumae* for ending a theme, be produced on an imperfect consonance (2010: 145).

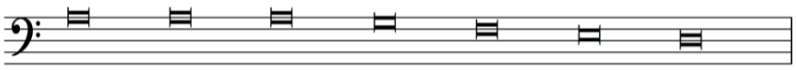
In Chapter 18, Faxolis also defines the term in a straightforward way, equating it with the *neuma* and *clausula*[30]. In this section, the author also mentions the influence of the vernacular when he presents the term *cadentia* as well as its use among the practical musicians of his time:

Nos autem quas in cantuum coaptatione notule ut alter ab altero tono differatur institutas novimus, hasdem per aggregationem vel segregationem contentas hisdem modis neumam dicemus. Eandem vernacular lingua cadentiam vocitarunt, quam finite verborum sententia ut plurimum compositors veluti clausula utuntur (FLORENTINUS DE FAXOLIS, 2010: 156).	To those notes that we know differed from another, and which are contained by aggregation or segregation in the same modes, we shall apply the name of *neuma*. In the vernacular, it has been called a *cadentia.* Composers use it mostly like a *clausula* when the verbal sentence is finished (2010: 157).

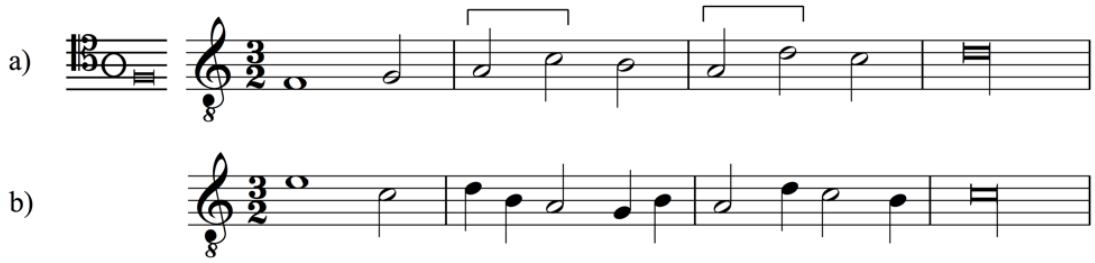
[30] As presented by Quintilian. Cf. note 10.

To illustrate the explanation, Faxolis presents two musical examples to explain the terms "*neuma"* and *"cadentia"* (Exs. 6 and 7-8). It is quite clear that the former is applied to the final movement of the *cantus planus (*a terminology coming from the old theoretical tradition already mentioned[31]) and the latter, to the final movement of the voice added in *cantus mensuralis*, which relies on the typical suspension of the movement conducted at the conclusion of the *cantus* (or the modern *cantizans*). However, if we consider the explanation provided by Faxolis, we could apply the term "*cadentia*" also as "conclusive unity" according to the inherent progression of the interval.

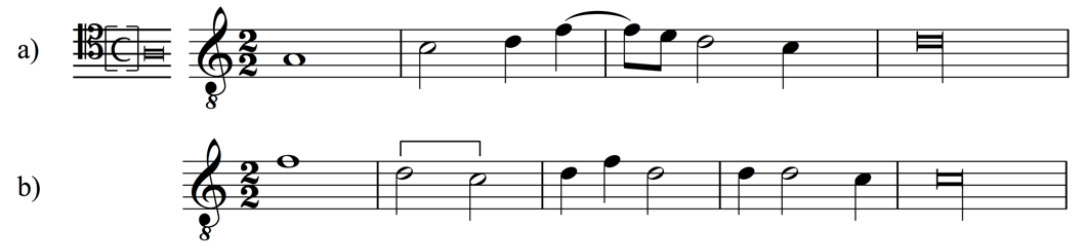
Faxolis further relates the importance of cadence to measurement, revealing that "it will always be appropriate for the composer to measure a cadence completely, that is saying, in a circle or semicircle (Exs. 7 and 8, respectively), with a sentence of the text" (2010: 159)[32]. And if by conjecture, we overlap both "*neuma*" and "*cadentia*" structures, a typical polyphonic cadential gesture emerges (Ex. 6).



Ex. 6: an example of "*neuma"* (in the first tone).



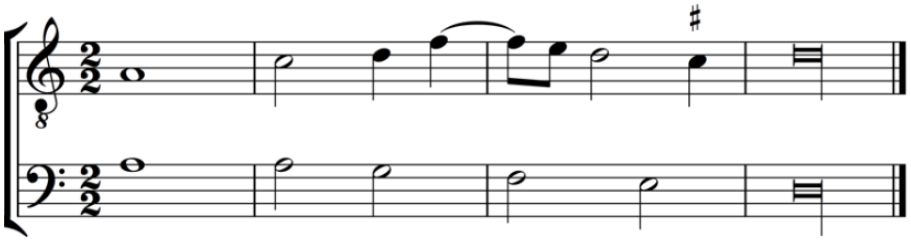
Ex. 7: *Cadentiae in circulo* or "cadences in perfect *tempus* mensuration" (cf. Blackburn/Holford-Strevens edition). The difference in both examples is concerning the use of syncopation on *antepenultima* and *ultima* (on example b).



Ex. 8: *Cadentiae in semicirculo* or "cadences in imperfect *tempus* mensuration" (cf. Blackburn/Holford-Strevens edition). The difference is again concerning the use of syncopation (in example b).

[31] In view of the erudition that Faxolis intended to demonstrate with his work, an allusion to a sort of obsolete term to the detriment of an intention in this direction is not surprising.

[32] Similar reasoning is presented also by Tinctoris, for example, during the exposition of Chapter 25 of Book 2 in his *Liber de arte contrapuncti* (1477), concerning dissonance treatment in a cadential situation on *proportio dupla* in *tempus perfectus* and *prolatio minor*.



Ex. 9: By conjecture, a conjunction between two unities - *neuma* and *cadentia* (from Examples 3 and 4a) - on *tempus imperfectus* and *prolatio minor*.

So, although the cadential terminology reaches an important stage with Tinctoris and Faxolis, the detailed stratification of its elements remains an open case. Under these circumstances, we can assume that further steps towards its development would come from one of the most significant writings on fauxbordon and gymel of the late fifteenth century: the treatise *De praeceptis artis musice*, written by the last writer on our list Guilielmus Monachus (c. 1435-c. 1500) probably in Milan between c. 1480-1490 (HAMRICK, 1992: 2). Here, besides providing the most significant discussions on the treatment of dissonance[33], a series of cadential formulations at the end of the section on "certain rules on counterpoint", establishes this source as a pioneering treatise in recognizing the three elements of the four-voice cadential process[34].

The section which Guilielmus recognizes these three elements is concerned to two variations on cadential models. These variations consist mainly in the permutation of stereotyped melodic movements on each voice. Thus, the attributions are derived from the methodological necessity to identify what roles are exchanged, otherwise, there would be no need to demonstrate them, once they are already understood as such. Consequently, Guilielmus calls the stereotyped clauses by name, providing a type of signature to each: *modum suprani* (soprano's manner), *modum tenoris* (tenor's manner), and *modum contra[e]* (*contratenor bassus*' manner). However, unlike these voices, the *contratenor altus* is the only which is not named based on a specific movement; the *altus* i.e., the remaining voice, is not named in this type of classification purely for practical reasons (or lack of necessity).

The first variation of the cadential model consists of the *modum suprani* on *Tenor*, the *modum tenoris* on *Contratenor Bassus*, and the *modum contrae* in *Contratenor Altus*. In order to present the exchange between parts, Guilielmus explains in detail what he means by such terms, consisting of a highly significant passage for the theory of cadence[35].

[33] In addition, according to Elisabeth Schwind in *Kadenz und Kontrapunkt*, it is also a significant document to cadence models. In this important monograph, the author devotes the whole of Chapter 3 (2009: 105-132) to organize a synthesis from the structural point of view of the Guilielmus discourse.

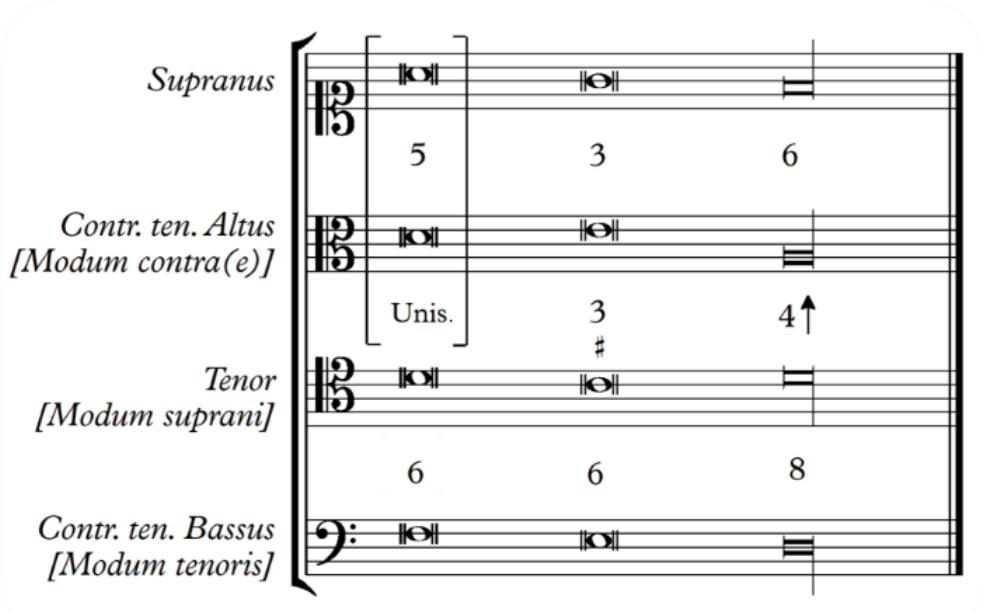
[34] The complete four-elements description reaches with the Andrea Ornithoparchus in *Musica activae micrologus* (1517), which described the melodic clauses as "*clausula discantus*", "*tenoris acuti clausula*", "*clausula tenoris*" and "*baritonantis clausula*".

[35] As cited by Julie E. Cumming: "As far as I know, Guilielmus is the first theorist to develop terminology for voice function at the cadence" (2013: 194).

...si cantus firmus teneat modum suprani, sicut fa mi [mi] fa, sol fa fa sol, la sol sol la, tunc contratenor bassus potest tenere modum tenoris, hoc est, facere suam penultimam sextam bassam subtus tenorem, ultimam vero octavam bassam. Contra vero altus tenebit modum contrae, hoc est, faciet suam penultimam tertiam altam, ultimam vero quintam supra contratenorem, quae erit quarta subtus tenorem. Supranus vero faciet suam penultimam quintam altam supra tenorem, quae erit decima cum contraneore basso; ultimam vero suam faciet tertiam supra tenorem, quae erit decima cum contratenore basso (PARK, 1993: 70)

"If the cantus firmus holds the *modum suprani*, for instance *fa mi [mi] fa*, *sol fa fa sol*, *la sol sol la*, then the C*ontratenor Bassus* can hold the *modum tenoris*, that is, to make its *penultima* a low sixth beneath the *Tenor*, and the last note an octave below. But the C*ontratenor Altus* will keep the *modum contrae,* that is, it will make its penultima a third higher, but the *ultima* a fifth above the C*ontratenor [Altus],* which will be a fourth below the *Tenor*. But the *Soprano* will make its penultima a fifth above the *Tenor*, which will be a tenth with the C*ontratenor Bassus*; but it makes its *ultima* a third above the *Tenor*, which will be a tenth with the C*ontratenor Bassus* (PARK, 1993: 190).

An interesting fact is the example provided by the author does not represent his explanation. However, an illustration is presented here based on indications by Guilielmus, as seen below:

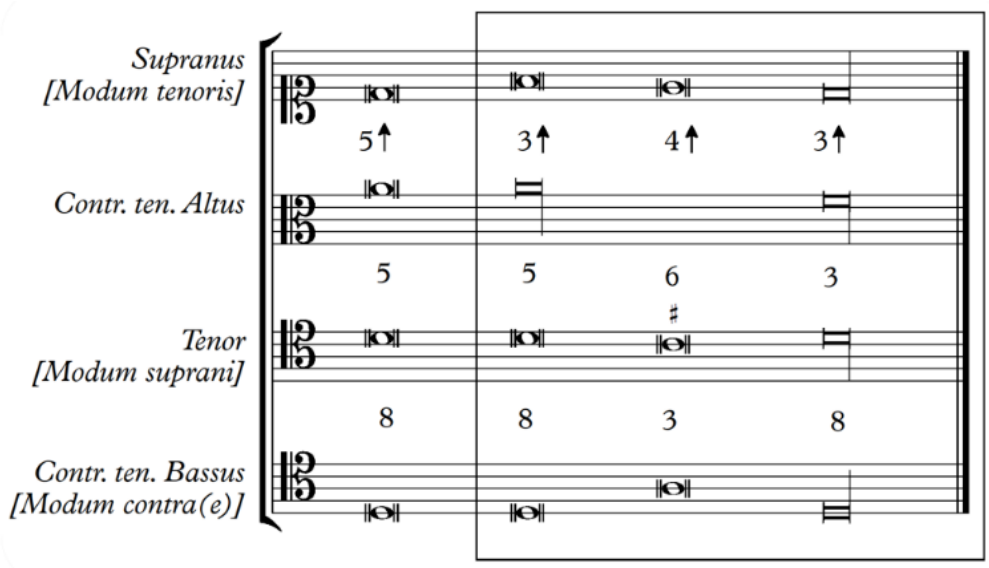


Ex. 10: The two voices presented in square brackets was only suggested, since Guilielmus does not comment on this part of the cadence in its formulation.

The second variation presented by Guilielmus constitutes another type of permutation between the stereotypical clauses. In this case, the author provided his own illustration of the formulation (Ex.11).

...si cantus firmus vel cantus figuratus teneat adhuc modum suprani..., tunc contratenor bassus potest facere suam penultimam tertiam bassam subtus tenorem, ultimam vero faciendo octavam bassam subtus dictum tenorem; supranos vero faciet penultimam suam tertiam supra tenorem, ita quod unisonus sit ultima cum tenore, quae erit octava bassa cum contratenore basso. Contratenor altus faciet suam penultimam sextam supra tenorem ultimam vero suam faciendo tertiam supra tenorem (PARK, 1993: 70-71).

If the *cantus firmus* or *cantus figuratus* should still hold the *modum suprani* […], then the *Contratenor Bassus* can make its *penultima* a low third below the *Tenor* but making the last a low octave below the above-mentioned *Tenor*.
But the *Soprano* will make its *penultima* a third over the *Tenor*, in such way that the *ultima* will be in unison with the *Tenor*, which will be a low octave with the *Contratenor Bassus*. The *Contratenor Altus* will make its *penultima* a sixth over the tenor but making the *ultima* a third above the *Tenor* (PARK, 1993: 190).



Ex. 11: Another four-voice cadence model. the square circumscribes properly the cadential process (*ultima*, *penultima* and *antepenultima*).

III

We conclude by stating, once again, that the terminological and conceptual development related to cadence provides evidence of a significant change in the theoretical context of the late fifteenth century. Since the codification of cadential elements has acquired a significant level of detail among the fourteenth-century treatises–specially with Marchetto and Jacques—the segmentation already organized in previous treatises through *ars grammatica* has since reached a completely new level. Those terms which referenced cadence as a "metaphor of instability" were gradually changed to terms which assigned to a "conclusive unity" of structure segmentation.

The evidence manifested by Faxolis about the vernacular term "*cadentia*" exposed a term which had already been applied earlier, but some new aspects of understanding was attributed to this case. The neologism, later transformed into "*cadenza*" when presented in Italian, does not

occur with its counterpart "*clausula*",whose application continued to be considerably stable mainly during the sixteenth century[36]. One of the most clear examples of this appropriation is the definition presented by Stephanus Vanneus (c. 1493 - after 1539) in his *Recanetum de musica aurea* (1533). Vanneus uses the same definition presented by Tinctoris (concerning the "*clausula*" entry on *Terminorum*), but substitutes the term with "*candentia*" and offers an expanded version, which could be considered a type of concise summary of the grammatical-musical tradition argued earlier[37]:

Cadentia igitur est, cuiuslibet partis cantus particula, in fi ne cuius, vel quies generalis, vel perfectio reperitur. Vel Cadentia est quaedam ipsius Cantilenae partis terminatio, perinde atque in orationis contextu Media distinctio, atque Distinctio fi nalis. Studentque periti Musici, ut Cadentiarum Meta fi at, ubi & orationis pars, seu membrum terminat (VANNEUS, 1533: 85^{v}-86^{r})

Cadentia, therefore, is a small part of any section of a song at the end of which is found either general repose or perfection. Or cadence is a certain end of this same section of song, just as in the context of speech the middle and final signs of punctuation. Experienced musicians seek to place cadences where the speech or its clauses end (SMITH, 2011: 72).

Therefore, evidence of the consolidation of a "cadence theory" properly speaking coincides mainly with the development of a humanist character in the understanding of music among the liberal arts. This proposal, even presented in certain medieval treatises, gradually gains a wide approach in which the teaching of composition and its elements in the molds of the *ars versificandi,* especially those in the German context in the early sixteenth century. This circumstance comprises short scholar manuals[38] that reconcile this tradition by a new approach, influencing multiple aspects of the cadence, which was categorically establishing not only as a "conclusive unity" (embedded in a metaphorical process of instability), but also as a well-defined model which had highly influenced the upcoming discussions from the sixteenth century onward.

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[36] The gradual disuse of the term *"clausula"* by virtue of its *"cadentia"* counterpart can perhaps be attributed to the direct relationship of the growth of the use of treatises in the vernacular. Although there is still predominance of "candentia", especially in Italian treatises.

[37] Despite Pietro Aron's *Libri tres de institutioni hamonica* (1517) published in Latin (in fact a translation made by Flaminio), he also uses the term "*cadentia*", as seen in the title of Chapter 25 of the third book: "*De Indicibus cantillenarum et cadentiis*".

[38] Mainly those of the so-called Cologne School, such as: *Opus aurem* (1501) by Wollick and Schanppecher; *Musica* (c.1504) by Cochlaeus, for example.

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