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Use of Linkage Technique in Johannes Brahms' op. 78 and Leopoldo Miguéz's op.14 Violin Sonatas

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Abstract: This paper specifically addresses linkage, a characteristically Brahmsian technique employed in the formation of musical ideas through the gradual transformation of precedent elements, being considered an indicator in the use of developing variation. After a detailed review of the literature encompassing definitions, classification and exemplification considering works of three theorists (FRISCH, 1984. SMITH, 2007. RAHN, 2015), an original proposal for a typology of linkage is presented. We compare a special occurrence of linkage in Brahms' *Violin Sonata,* op. 78 to two similar occurrences in Leopoldo Miguéz's sonata op. 14, a work of the same genre.. The results reinforce the hypothesis that Miguéz had employed organic constructive processes in his piece.

Keywords: *Linkage;* violin sonatas op. 78 by Brahms and op.14 by Miguéz; developing variation.

Uso da técnica de *linkage* nas sonatas para violino op. 78, de Johannes Brahms, e op.14, de Leopoldo Miguéz

Resumo: Este artigo aborda especificamente a técnica de *linkage*, caracteristicamente brahmsiana (SMITH, 2007: 109), empregada na formação de ideias musicais através de transformações graduais de elementos precedentes, sendo considerada como indicadora do emprego de variação progressiva. Após uma detalhada revisão bibliográfica, englobando definições, classificação e exemplificações, considerando trabalhos de três teóricos (FRISCH, 1984; SMITH, 2007. RAHN, 2015), é apresentada uma proposta original de uma tipologia para o conceito. Um caso especial de *linkage* na *Sonata para Violino* op. 78 de Brahms é analisado comparativamente com duas ocorrências semelhantes em obra de mesmo gênero de Leopoldo Miguéz, a sonata op.14. Os resultados reforçam a hipótese de que Miguéz teria empregado processos construtivos orgânicos em sua sonata.

Palavras-chave: *Linkage*. Sonatas para violino op. 78 de Brahms e op.14 de Miguéz. Variação progressiva.

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This paper integrates an ongoing PhD research intended to comparatively analyze the thematic structures of two almost identical contemporary violin sonatas: Brahms' op. 78 (composed in 1878) and the first work of the same genre written by the Brazilian composer, Leopoldo Miguéz (1850-1902) cataloged as op. 14. A previous study (MAYR, 2015) found a strong positive correlation between the eight themes of op. 14's first movement (organized in sonata form). Moreover, the study demonstrated that most of the thematic structures could be explained analytically as having been derived from the gradual transformation of a group of six basic elements present in the first four bars. Such circumstances denote the employment of organic and economic means in the construction of the piece. The present proposal aims to further this investigation by taking into account the linkage technique. By hypothesis, the unequivocal analytical identification of this characteristically Brahmsian technique (SMITH, 2007: 109) in a given musical passage may constitute concrete evidence of developing variation, as opposed to a mere superficial transformation without further structural consequences.

This paper is structured in four main sections, each focusing on a specific issue: (1) the theoretical background behind linkage: ideals of Organicism and principles of *Grundgestalt* and developing variation; (2) a literature review on the subject of linkage, including definitions and exemplification; (3) an original proposal for a linkage typology, aiming to refine the derivative analysis; and (4) an examination into the use of linkage in the sonatas by Miguéz and Brahms.

Theoretical antecedents

For Leonard Meyer (1989: 189-205) organicism represented the most important extra-musical influence to Romantic Austro-German composers, mainly Mozart, Beethoven, Brahms, Schoenberg and Berg. Essentially, the organicist conception can be defined as an artistic creation that models biological growth. In music, organic construction corresponds to the economic structural development of related material derived from a basic group of musical elements. Ideally, the whole substance of an organically constructed piece (themes, accompaniment, contrasting and subsidiary ideas, etc.) may be obtained through derivative processes operating along an indefinite number of generations of variants.

During the 1910s, Arnold Schoenberg elaborated two principles that aimed to describe and formalize the process of organic construction in music, namely, developing variation and *Grundgestalt*. Motivated by an intention of demonstrating "continuity between the compositional processes of the classical romantic Viennese school and his own music"

(COLLISON, 1994: 20), Schoenberg formulated both concepts based on his observation of the music of Brahms, one of his declared "great masters" (SCHOENBERG, 1984: 76). In a well-known essay entitled *Brahms the Progressive*, published in the book *Style and Idea* (1984: 398-441)[1], Schoenberg praises the highly sophisticated Brahmsian thematic treatment, characterized by a gradual development of a group of elementary motives. It is interesting to note that, in spite of adopting Brahms as the ideal model of organic composer for his theoretical formulations, Schoenberg himself has intensely employed these principles in his music since the beginning of his professional career, as several analytical studies demonstrate (RUFER, 1954; FRISCH, 1984, 1993; NEFF, 1984; HAIMO, 1997; COLLEEN, 2009; ALMADA, 2011, 2016).

In a few words, a *Grundgestalt* corresponds to "the first creative thought" (RUFER, 1954: ix) or, metaphorically speaking, the seed from which an entire musical work can be extracted. In practical terms, a *Grundgestalt* is presented at the very beginning of a piece (normally with a duration of two or three measures), being characterized by a combination of strong and "personal" musical elements (as intervallic or rhythmic sequences, harmonic relations, metrical positions and so on). In organic construction, the *Grundgestalt* becomes a referential unity for material production through developing variation techniques. As defined by Ethan Haimo,

> Developing variation is a special category of variation technique, one that implies a teleological process. As a result, later events – even markedly contrasting ones – can be understood as originate from, or grow out of, changes that were made in the repetitions of early musical unities. Therefore, true developing variation can be distinguished from purely local varied repetitions that have no developmental consequences. Developing variation offers the possibility of forward motion, permitting the creation of new or contrasting (but still related) ideas, while local variation affects only the passage in question (HAIMO, 1997: 351).

Fig. 1 presents a schematic view of developing variation being applied to a *Grundgestalt* (Gr). As it can be observed, it basically consists of a recursive process of variation over variation, resulting in generations of derived forms (a, b, c,…), which in turn becomes referential forms for further derivation. The process gradually moves away from the *Grundgestalt* in concentric circles, expanding (in thesis, at least) the divergences between

[1] This essay, published in the book *Style and Idea* (SCHOENBERG, 1984: 398-441), was originally a conference presented by the composer broadcasted on the Frankfurt Radio in 1933 as part of the commemoration of Brahms' birth centenary.

the variants and the referential form. In this manner, even the most contrasting musical ideas (as indicated by Haimo's quotation) may be obtained.

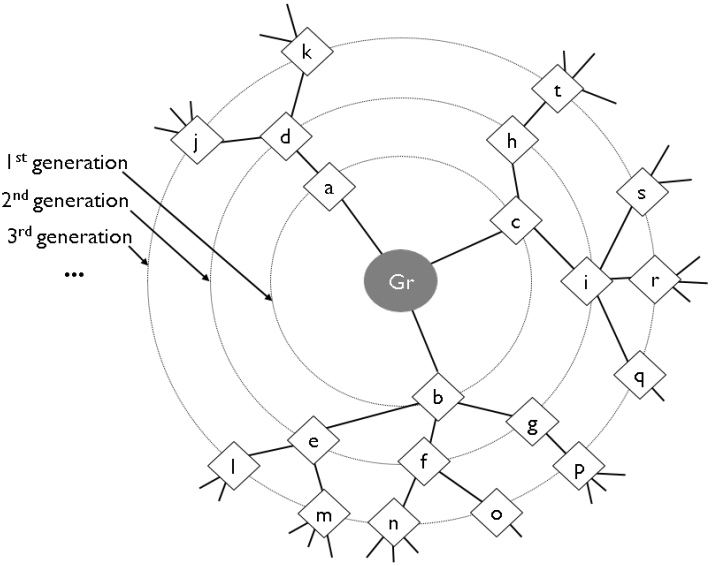


Fig. 1: Schematic representation of the principles of developing variation and *Grundgestalt.*

Developing variation is related to different kinds of techniques and procedures, among them linkage is certainly the most important. One of the main objectives of this study is to define and systematically map these techniques, which, consequently, will contribute to refine the methodology employed for the derivative analysis of the sonatas by Brahms and Miguéz.

Linkage

The first elaboration of the concept of linkage (originally in German, *Knüpftechnik*) is due to Heinrich Schenker (1868-1935), as one of the vast repertoire of elements of his analytical method. It can be defined as a "technique of motivic association in which a new phrase repeats the motivic idea of the precedent phrase, aiming both to provide continuity and to initiate something anew" (FRAGA, 2011: 76). Linkage is a relatively lesser-known resource of Schenkerian analysis (compared to others, like unfolding, register transfers, progressions, initial ascents, and so on), being simply omitted in some referential texts on

the subject.[2] This fact seems to corroborate the general critique associated to the Schenkerian analysis, namely, that it gives less importance to motivic relations in the reduction process. However, as it can be demonstrated in texts written by some of the first followers of Schenker's thought (for instance, Oswald Jonas[3] and Sylvan Kalib[4]), the motive was not completely absent from his concerns[5].

According to Peter Smith, linkage "reflects the theorist's [i.e., Schenker's] penetrating insight into the motivic dimension of tonal music" and consists of the "transformation of a gesture of conclusion into one of initiation" (SMITH, 2007: 109). As a complementary definition, linkage occurs when "a 'new' idea evolves spontaneously from a preceding one" (FRISCH, 1984: 15-16), which can be associated to the concept of gradual development. Considered by Frisch and Smith as a distinctly Brahmsian constructive procedure, the employment of linkage for generating new themes from preceding motives can be viewed as one of the most efficient manners to provide continuous and organic growth in a musical piece. Fig. 2 presents a graphical representation of the use of linkage: the motivic element X that ends the musical idea *a* serves as basis for the beginning of the musical idea *b*. In general, element X' undergoes some type of transformation, for example, melodic variation or metrical displacement. Nonetheless, the new context provides sufficient contrast for both ideas, while the strong similarity between X and X' creates a unity of its own and grants continuity to the musical flux.

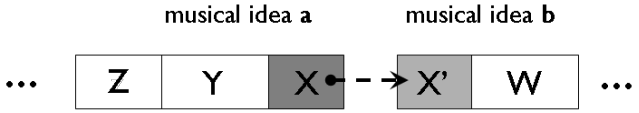


Fig. 2: Graphical representation of linkage in the connection of two musical ideas.

[2] Cf. Forte and Gilbert (1982), Pankhurst (2008)

[3] Jonas (1897-1978) was Schenker's pupil. In 1934, he emigrated to America just after publishing *Das Wesen des musikalischen Kunstwerks: Eine Einführung in Die Lehre Heinrich Schenkers* [*Introduction to the Theory of Heinrich Schenker*, in the English translation]. With his colleague Felix Salzer, also a student of Schenker and a fugitive from Nazism, he founded the Schenker Institute at the University of California. Both are considered largely responsible for the extraordinary expansion of Schenker's ideas in American academia.

[4] The American music theorist, Sylvan Kalib (b. 1929) had studied with Oswald Jonas. In 1973, he published his PhD thesis entitled *Thirteen Essays from the Three Yearbooks Das Meisterwerk in der Musik by Heinrich Schenker: An Annotated Translation*.

[5] Cf. Jonas' and Kalib's comments on the concept in this section.

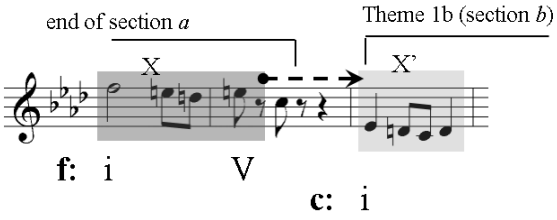
Three analytical works provided the main references for the present approach according to its main objective, namely, to evidence the correlations between the technique of linkage and developing variation: (1) the influential book *Brahms and the Principle of Developing Variation* (published in 1984) by Walter Frisch; (2) Peter Smith's article *New Perspectives on Brahms' Linkage Technique* (2007); and (3) a newly issued academic dissertation by Steven Rahn entitled *Knüpftechnik: Coding Narrative in the Music of Brahms and the Experimental Fiction of Robbe-Grillet* (2015). Although each one of these studies basically discuss the same concept, they each address specific and particular aspects of the subject and in this way are mutually complementary.

Frisch's book departs from Schoenberg's comments in the previously mentioned essay *Brahms the Progressive*. His study aims to produce a systematical and deeply analytical investigation on Brahms' organic procedures employed in the derivation of themes, considering his different compositional phases. The further-reaching results of Frisch's analyses is undoubtedly the precise identification of these procedures, among which the linkage technique is certainly the most important. In his first comments on this topic, Frisch points to an implicit recognition of linkage as a typical Brahmsian procedure in two writings by Schoenberg (FRISCH, 1984: 15-16). In spite of not formally identifying it as a technique, Schoenberg perceives the use of linkage in an analysis of Brahms' *String Quartet* op. 51, no. 2 (included in the essay *Brahms the Progressive*), where he detects the presence of a "linking motive". More meaningfully, in the book *Fundamentals of Musical Composition* (SCHOENBERG, 1990), Schoenberg exemplifies the composition of a musical sentence in the style of Brahms, in which a linkage idea connecting two subsections is clearly present[6]. Both instances (especially the latter) suggest that Schoenberg (even if in an intuitive manner) recognized linkage not only as a personal trait of Brahms' style, but also as a decisive constructive technique for thematic development. It is noteworthy to add that Schoenberg employed linkage to his own music (two examples of its application will be presented later in this paper).

In his text, Frisch analyzes various passages of Brahms' works distributed along his creative trajectory. In an early work, the *Piano Sonata* op. 5/I (composed in 1853, when Brahms was only 20 years old), there is what the author considers "an impressively precocious instance of the linkage technique" (FRISCH, 1984: 37). Ex. 1 shows an adapted and simplified version of Frisch's illustration while highlighting only the application of the technique. The movement's opening theme is organized in a small ternary form (using

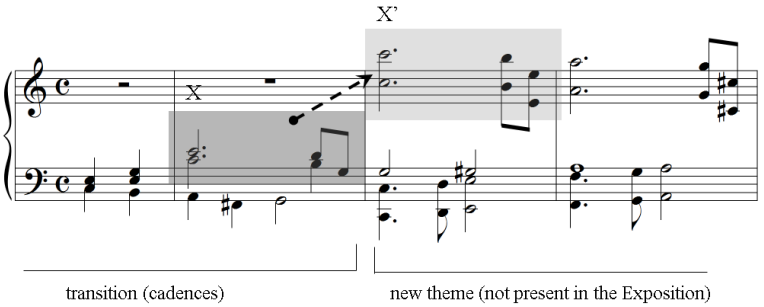
[6] This passage can be found in Schoenberg's *Fundamentals of Musical Composition* (SCHOENBERG, 1990: 65-66).

Schoenberguian terminology) divided, according to Frisch's analysis, into three complementary ideas: Themes 1a, 1b and 1a'. As it can be observed in Ex. 1, Theme 1b initiates with a variation (X') of the fragment that concludes section *a* (X) within a new harmonic context.



Ex. 1: Brahms: *Piano Sonata* op. 5/I – mm.5-7, reduction (adapted from FRISCH, 1984: 171).

Throughout his book, Frisch points to several other applications of linkage that are increasingly more sophisticated in treatment. Essentially, Brahms' use of the technique in the connection of ideas became more subtle and fluid avoiding explicit compartmentation like in the case of op. 5. As an example of this mature practice, Frisch mentions the creation of a new theme through "one of his most inspired uses of the linkage technique" (FRISCH, 1984: 140) in the recapitulation section of the second movement of the *Second Symphony* op. 73. As shown in Ex. 2 (an adaptation from Frisch's Ex. 40), the conclusive horns' figure (X) is immediately "recycled" by the violins (X') initiating the theme.



Ex. 2: Brahms: *Second Symphony* op. 73/II – mm. 5-7, reduction (adapted from FRISCH, 1984: 140).

Interestingly, this new theme replaces the original secondary theme (introduced in the exposition). After presenting the new idea, "the two-note motive of the original second theme is heard, much as it was in exposition" and "the 'missing' theme resurfaces three times in the last movement." This fact suggests a deeper, structural use of linkage, which becomes part of the basic compositional planning. As Frisch affirms, besides "an elegant method of generating new ideas", in op. 73, linkage "is put into the service of the larger design […], for it replaces an earlier theme and thus sets in motion a drama that is resolved only in the finale" (FRISCH, 1984: 140).

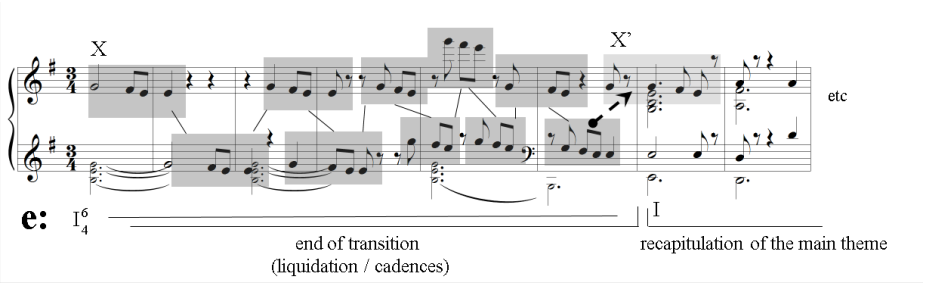
Peter Smith proposes a refinement of Frisch's study about linkage. With the aid of analytical tools adapted from a Schenkerian analysis, Smith examines different instances of linkage in a varied group of Brahms' pieces (and in two cases of Beethoven compositions, as well). However, his main contribution to the subject is certainly the conceptual expansion of the scope of linkage, by considering three domains of application: melody, harmony and rhythm/meter. While the first one may be associated to "conventional" linkage, i.e., oriented by a motivic-thematic derivation, as in Frisch's examples, the other two aspects demand further explanation. Introducing his point of view, Smith affirms that

> What has not been well recognized . . . is the extent to which rhythmic or harmonic components may enhance the associative effect of linkage, even as these components also manifest their own forms of structural reinterpretation. In the rhythmic dimension, this enhancement may involve either a change in the hypermetric position of a linking motive or the migration of that motive in relation to the notated meter. In the harmonic dimension, the magical effect[7] of association might engage continuity of a vertical sonority even as the verticality involved undergoes a shift in structural meaning. Such harmonic linkage may even arise between a structural harmony and an incidental or "apparent" version of the same sonority (SMITH, 2007: 110-111).

From Smith's words, we can deduce that *structural reinterpretation* is a common attribute of the three kinds of linkage and that its main consequence is to provide *continuity* in an economic way. The differences between the harmonic and rhythmic cases are properly elicited through the manner in which they are accomplished.

[7] "Magical effect" is a reference to an expression used by Schenker to define linkage in his book on harmony published in 1906.

Essentially, harmonic linkage occurs when a formal boundary is "blurred" in some way, be it due to an unexpected connection or even to the omission of a chord. A recurrent instance of this case among Smith's musical examples involves the cadential formula "$I_{6/4}$-$V_{5/3}$-I" positioned at the boundary of some important formal section (as the recapitulation of sonata forms). A harmonic linkage is properly established when the cadential $I_{6/4}$ chord is *not* followed by the expected $V_{5/3}$. Its omission from the formula weakens the tonic arrival and the sense of change contributing to fluent continuity. Ex. 3 (an adaptation of Smith's example 6) illustrates the use of harmonic linkage in Beethoven's *Piano Sonata* op. 90. As can be observed in the passage that antecedes the recapitulation of the main theme (m. 138-143), the resolution of the cadential $I_{6/4}$, i.e., the expected $V_{5/3}$, is elided and in some way harmonically fuses both sections. This contributes to the fluency of the musical narrative being, therefore, perfectly adjusted to the idea of linkage according to Smith's conception[8].



Ex. 3: Beethoven – *Piano Sonata* op. 90 / I / mm.138-145, reduction (adapted from SMITH, 2007: 118).

For Smith, rhythmic linkage involves necessarily "metric reinterpretation" of motives providing "continuity and contrast" (SMITH, 2007: 114). On a higher level, this is considered also under hypermetrical organization. This aspect is perfectly represented in the finale of Brahms' *Piano Quartet* in G minor. As pointed by Smith, in this movement Brahms manipulates the metrical structure of a dyad F♯-G in several different ways. Thus,

[8] Even though this can undoubtedly be considered an example of harmonic linkage, one cannot disregard other elements that contribute to the intended compositional effect as complementary factors: the almost obsessive repetition of the melodic motive G-F♯-E (X) and the constant metrical displacements of its several imitations. This discussion will be returned later during the classification of types of linkage.

the composer "develops the motive potentials for either strong-weak or weak-strong placement on multiple rhythmic levels" (SMITH, 2007: 140). In other words, by exploring both local and global (hypermetrical) possibilities for organization, Brahms obtains continuous structural reinterpretation for a single unity, which contributes to a notable economic construction. In an analysis that encompasses a considerable portion of his paper (SMITH, 2007:139-150), Smith demonstrates the extraordinary potential of the metric linkage for structuring a whole movement.

Steven Rahn investigates an attractive and original perspective on linkage, addressing the correlations between musical and literary narratives. The study takes as a point of departure the famous passage from Marcel Proust's *Du Côté de Chez Swann* (first book of *La Recherche du Temps Perdu*), in which some of the narrator's childhood memories are unexpectedly recovered by the taste of a madeleine cake accompanied by a cup of tea. Rahn (2015: 3) claims that a similar sense of associative relation may occur in music, "by recognizing and focusing on what is familiar: a melodic gesture, a rhythmic motive, a vertical sonority, the form, the genre, or any other characteristic." The dissertation examines the techniques employed by the French writer Alain Robbe-Grillet in select passages from the novel *Le Voyeur* (published in 1955) and compares them to linkage occurrences in two of Brahms' works (the song *Liebesglut*, op. 47, no. 2 and the *Piano Quartet* no. 2 in A major, op. 26, I) in search for "instances in which association and linkage blur formal boundaries, thus creating a continuous stream of musical events" (RAHN, 2015: 5).

In his first chapter, Rahn examines the origins of the concept, taking as reference studies on Schenkerian analysis. In a passage from a book written by Oswald Jonas, linkage is firmly associated to the concept of musical cohesion that must be attained through varied repetition. Sylvan Kalib defines linkage as a "technique related to the connection of ensuing spans […] it concerns the connection or linkage of phrases and/or sections." (KALIB apud RAHN, 2015: 6). After adding comments about Smith's study, Rahn presents his reflections in regards to linkage by arguing that

> temporal sequence increases in complexity and new meaning may emerge when the ending of a musical phrase simultaneously functions as the beginning of the subsequent phrase. A facet to linkage that has yet to be explored, in conjunction with narrative, is the manner in which the technique can produce confusion and disorientation and the expressive implications therein. While composers often use linkage to achieve formal cohesiveness, the technique can also cause temporal disruption (RAHN, 2015: 10).

Therefore, Rahn proposes another functionality for linkage besides achieving cohesiveness by continuity, which is caused by *temporal disruption*. Aiming to deepen and to support this original point of view, the second chapter of the dissertation addresses the use of linkage as a powerful narrative device in the Robbe-Grillet's novel. Musical application of the results obtained from the literary analysis is the focus of chapter three with the exam of the two Brahms pieces. Rahn initiates the discussion with the argument that, while Smith is only concerned with instrumental music, his approach aims to demonstrate that linkage is also subordinate to poetic expression, especially in Brahms's songs (RAHN, 2015: 53). Considering the specific case of *Liebesglut* he affirms:

> While my reading of the musical narrative partially derives from Brahms's treatment of hypermeter throughout the work, the interaction of linkage with the harmonic fabric also plays a significant role. By engaging with the text's themes, I argue that the song's second half progresses through a tragically ironic denouement and rejects the earlier expressive implications defined by the moments of linkage. Rather than resolution, defeat and resignation characterize the conclusion of the work.

In his long analyzes (20 pages), Rahn presents three instances of linkage, each one oriented by a musical parameter: hypermetric organization, harmony and melody (personified by a motive). According to the author, all three moments are put into the service of elements present in the poem's plot (and associated to literary strategies evidenced in his second chapter), thus musically illustrating concepts like disruption, evasion and confusion.

Considering the discussion in this literature review, it is possible to enlist the followings conclusions:

(a) linkage is an efficient technique intended to promote developing variation;

(b) its employment by Brahms is a characteristic trait of his thematic construction *modus operandi* present in most of his compositional career;

(c) it can operate on different structural levels and within three domains: melody, harmony and rhythm/meter;

(d) melodic linkage, which is the most salient type and of easiest understanding, occurs when a variation of the conclusive motivic fragment of a musical idea is employed for initiating the subsequent thematic idea;

(e) harmonic and rhythmic linkage involve more vague and abstract associative relations (and, consequently, relatively harder to detect in analysis), resulting in structural reinterpretation due to the "blurring" of formal boundaries. This can be caused by frustrating harmonic expectancies (omission of chords, use of inversions, etc.) or displacement and/or manipulation of metrical or hypermetrical structures;

(f) linkage may also be employed for highlighting expressive connotations with narrative plots, as in songs;

(g) the main specific purposes of linkage use for organic construction can be summarized as: to achieve cohesiveness by continuity (Jonas), to generate new thematic ideas (Frisch), to "provide continuity [and contrast] in an economic way" (Smith), to be employed as a structuring means on a larger-scale (Frisch and Smith), "to produce confusion and disorientation and the expressive implications therein" (Rahn).

Based on these points, the next section presents an original proposal of a typology for linkage, aiming to contribute to the systematization and refinement of this subject.

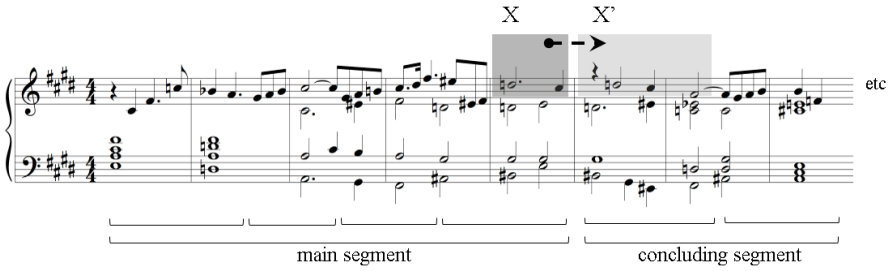
Linkage typology

An ideal typology would be able to precisely describe a given occurrence of linkage considering three aspects: (1) domain (melodic, harmonic or rhythmic/metric); (2) level (formal position) and (3) finality (one of those listed in Point (g) above). Since the latter aspect cannot always be easily determined (especially considering a local analysis), it seems reasonable (at least, at the time of this study) to propose a simpler version of the typology encompassing only the first two aspects.

Concerning the class "domain", the three possibilities will be represented by their initials: *m* (melodic linkage), *h* (harmonic) or *r* (rhythmic/metrical). In hybrid cases, when two or three types are combined, the corresponding letters should be noted together, with the most salient one taking first position in the formula. Thus, returning to Beethoven's *Sonata* op. 90 (Ex. 3), its linkage domain could be identified as *mhr*, *hmr* or *rmh* when depending solely on the analytical bias (from Smith's point of view, it is a case of *rmh*).

The level of linkage is determined by the importance of the formal position to which it is associated. It can be *external* (level 1) when it occurs within a boundary of two sections (and different thematic ideas, in the case of melodic linkage) or *internal* (level 2) when it is positioned inside a given section while almost always connecting phrases or segments of a theme. Though level 1 corresponds to the general case (represented by the scheme of Fig. 1), level 2 is considerably rarer. Exx. 4 and 5 present two instances of

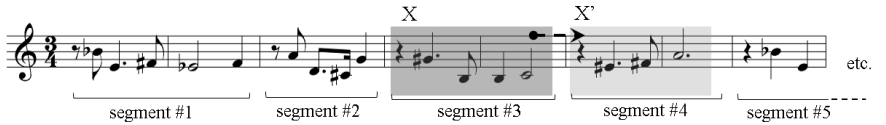
internal linkage extracted from two distinct pieces by Schoenberg. The first application is found inside the secondary theme of the *First Chamber Symphony* op. 9 (composed in 1906), one of the latest works of Schoenberg's tonal phase (Ex. 4).



Ex. 4: Schoenberg – *Chamber Symphony* op. 9 / Part I: Secondary theme / mm. 55-62, reduction. Example of linkage of level 2. Crossed labels indicate chord transformations (SCHOENBERG, 1969: 9).

As can be observed, the concluding segment of the theme is initiated by an almost strict restatement of the last motivic fragment in a different harmonic and metric context.

Ex. 5 shows an interesting case of level 2 linkage in the construction of the theme for *Orchestral Variations* op. 31 (concluded in1928), one of Schoenberg's most important serial works.



Ex. 5: Schoenberg – Theme of *Orchestral Variations* op. 31/ mm. 33-38 (accompaniment omitted). Example of level 2 linkage.

Despite X' being an elaboration of the preceding segment X (by suppression of a quarter note and a change of melodic contour), its linking function is clearly explicit, providing continuity and some contrast to the theme's structure by economic means.

A further refinement of cases of level 1 can be now proposed aiming to express the grade of "deepness" of the separation of the sections involved. In other words, for a more complete functional understanding of linkage in this aspect it seems necessary to know if the boundary in question corresponds to a relatively more or less important event, formally speaking. Taking into account the comprehensible difficulty for establishing a precise distinction of all the possible situations in such a fluid and almost intangible issue, only two alternatives will be considered: global-level boundaries (for example, between the development and recapitulation sections in a sonata-form movement to be labeled with the letter "a"), and local-level boundaries (between subsections as parts of a small ternary form, for example), which are cases to be classified with the letter "b".

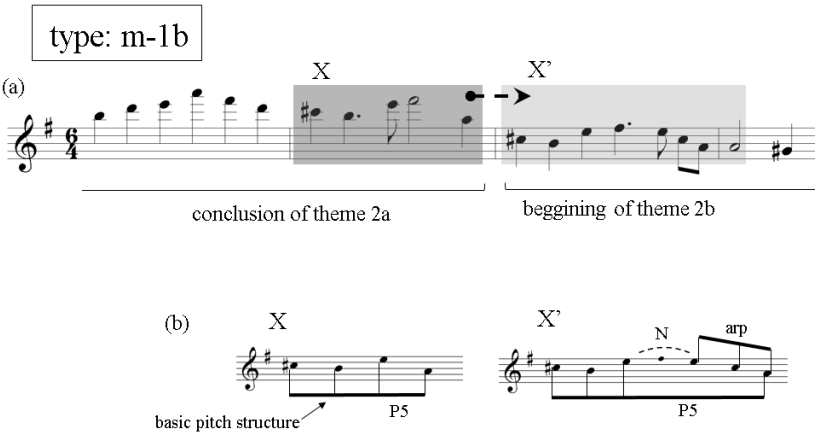
According to the present typology, a generic case of linkage must be identified through a simple formula (d-l) when "d" expresses the considered domain (*m*, *h* or *r* in simple cases or a combination thereof in hybrid situations) and "l" the level of application ("2", for internal linkage, "1a", for global-external and "1b", for local-external). Table1 classifies the types of the linkage cases presented in the five musical examples of this study.

Example	Title	Composer	Type
1	*Piano Sonata* op. 5	Brahms	m-1b
2	*Third Symphony* op. 73	Brahms	m-1b
3	*Piano Sonata* op. 90	Beethoven	hrm-1b
4	*Chamber Symphony* op. 9	Schoenberg	mr-2
5	*Orchestral Variations* op. 31	Schoenberg	m-2

Table1: Formal identification of the types of linkage present in Exx. 1-5.

Linkage in the Sonatas op. 78 and 14

Brahms' *Violin Sonata* in G major op. 78 is a piece that perfectly represents the composer's mature phase in regards to developing thematic treatment. In the words of Walter Frisch, in op. 78 "developing variation seems to have at last become a fully continuous process, one capable of generating an entire sonata exposition" (FRISCH, 1984: 120). Certainly, linkage plays a special role in this sophisticated constructive process. Frisch himself presents a case in his analysis, in the connection of two secondary themes (labeled as 2a and 2b). Ex. 6a reproduces Frisch's Ex. 34 with this instance of linkage, including its typological identification.



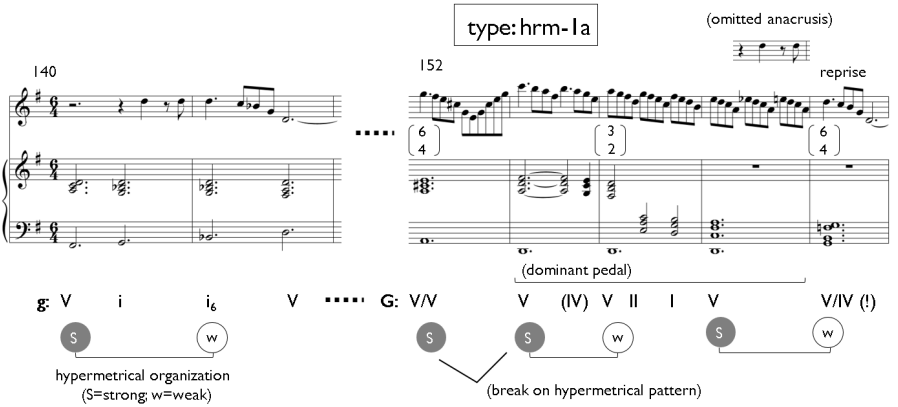
Ex. 6: (a) Brahms – *Violin Sonata* op. 78 / I / mm. 42-45, violin, (adapted from FRISCH, 1984: 119); (b) structural analysis of motives X and X'.

Ex. 6b proposes a structural analysis of both motives, according to Frisch's comments. As it can be observed, X' is an ingenious reformulation of X, which is especially evidenced by the elaboration of the descending fifth interval E-A.

For Peter Smith (2007: 120), "harmonic and rhythmic factors [act] as a complement" to melodic linkage. Their interaction is especially present in the final section of the development, culminating with the entry of the reprise. In respect to harmony, according to the author, linkage is provoked by a premature return of the tonic chord, in strong metrical and root positions along the final portion of the development[9]. Moreover, at the moment of the reprise, the expected gravitational I of G is weakened by a F natural (transforming this chord in a V/IV) and the characteristic anacrusis of the main theme is substituted by a two-bar flow of eight notes, strongly disguising its entry. The conjunction of both factors contribute to occult the recapitulation's borderline, resulting in a combination

[9] As argued by the author, "what is unusual that this tonic orientation arises from prolongation of the tonic harmony itself instead of expansion of the home dominant" (SMITH, 2007: 120). In fact, however, Smith omits the information that the various references to the tonic (which include a "false" recapitulation at m. 140) are related to its *minor* version. Actually, the "real" G major anticipation (inferred by a dominant preparation) is only unequivocally stated at m. 153, three bars before the reprise (cf. Ex. 7).

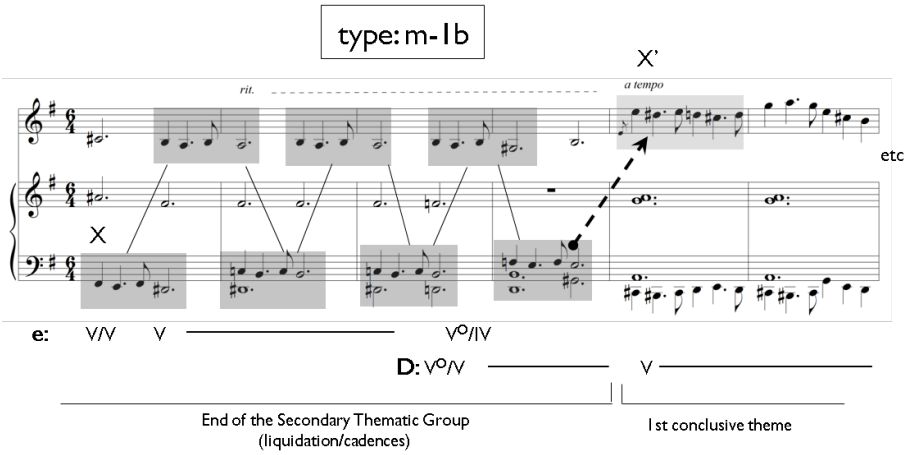
of fluidity and continuity. This effect is still intensified through a remarkable change in the hypermetrical organization at m. 152 (Ex. 7)[10]. Ex. 7 summarizes Smith's considerations on the triple linkage convergence in the passage between the re-transition and the recapitulation of op. 78/I, proposing a typological label as well.



Ex. 7: Brahms – *Violin Sonata* op. 78 / I / mm.140-1 and 152-156, reduction. Interaction of harmonic, melodic and rhythmic linkages (original conception based on Smith's analysis).

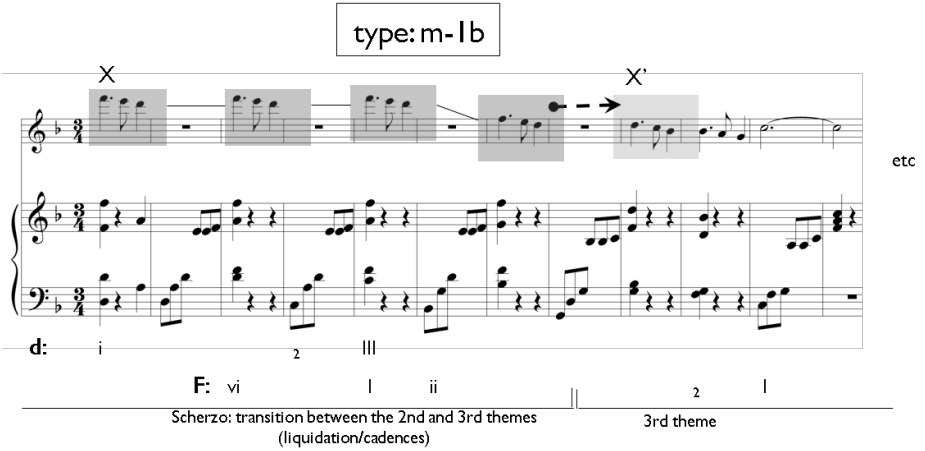
Besides these cases, the present analysis has detected other occurrences of linkage in the first movement of op. 78 specifically employed to introduce new thematic ideas from the transformation of precedent motives (or else, "conventional" linkage). Ex. 8 selects a special passage that resembles the melodic strategy employed by Beethoven in his op. 90 (cf. Ex. 3) consisting essentially in an imitative dialogue between violin and piano based on a motivic fragment at the end of the secondary thematic group, preparing the entry of the first concluding theme of the exposition.

10 Though not mentioned by Smith, there is also a subtle metrical transformation on the surface level suggested by a regrouping of the eight notes at mm.153-4 as indicated in Ex. 7 that helps to bring more indefiniteness and "turbulence" to the passage.



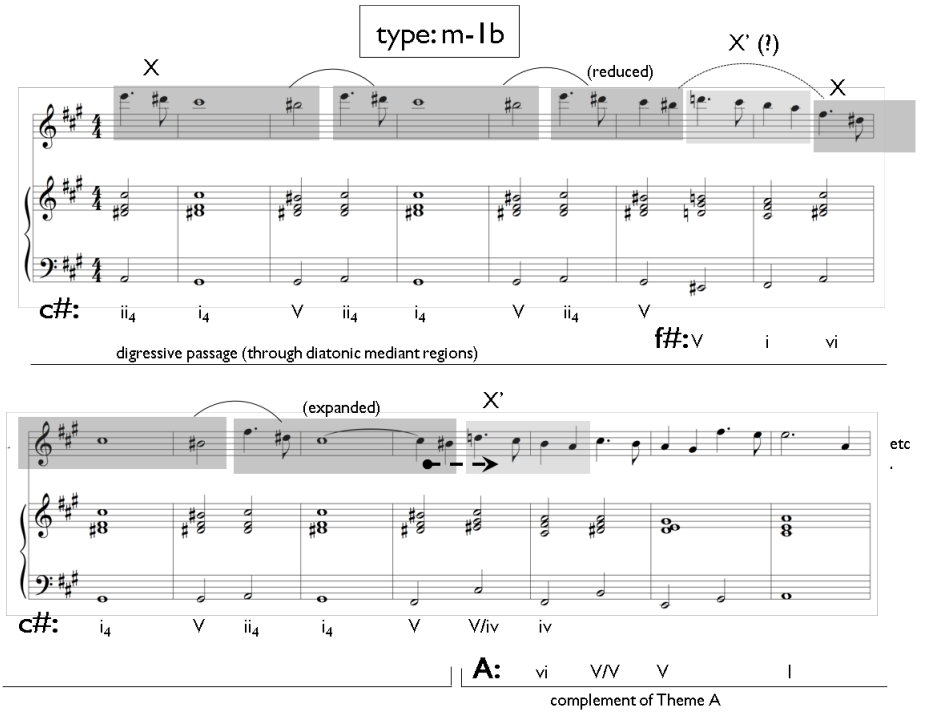
Ex. 8: Brahms–*Violin Sonata* op. 78 / I / mm. 66-71, reduction.

Similar constructive procedures are found in two passages in Miguéz's sonata. The first case (Ex. 9), located in the third movement between the second and third themes of the scherzo section, may be considered to some extent a simplified version of the Brahms' last example, in which only the imitations of the main motive are absent.



Ex. 9: Miguéz – *Violin Sonata* op.14 / III (Scherzo), mm. 135-144, reduction.

The same strategy is also present in the first movement of op. 14, although in a somewhat more sophisticated manner (Ex.10). Like in precedent cases, the linking fragment X is repeated. Then, a reduced version (mm. 43-44) seems to introduce the beginning of a new thematic idea, but the return to X one bar later implies that the process had not yet finished. A new transformation of the motive, this time by a subtle expansion of the duration of its penultimate note (C♯) brings, finally, the "real" X' and, consequently, the entry of the new theme. Moreover, this point coincides with the return of the tonic (A major) after a relatively long digressive passage on the tonal area of diatonic mediant, reinforcing the sense of a formal boundary.



Ex.10: Miguéz – *Violin Sonata* op. 14 / I, mm. 40-52, reduction.

Conclusion

This paper addressed the concept of linkage, a compositional technique intended to provide a fluent connection of musical ideas that is firmly associated to organic musical construction and, consequently, to the principle of developing variation. After a well-exemplified literature review on the subject, an original typology was presented encompassing several possibilities of occurrence as a contribution for the analytical identification of systematic linkage. A specific case of melodic linkage in Brahms' op. 78 was selected as a model for comparison with two similar occurrences in two different movements of Miguéz's op. 14. The analysis of these cases suggests that Miguéz has in some way assimilated this distinctive Brahmsian procedure in the construction of at least two of his themes. Probably this assimilation, like in Schoenberg's case, may have resulted from a combination of pure intuition and analytical observation of Brahms' *modus operandi*. It is important to add that at this juncture, the analysis has found a considerable number of different cases of linkage in op. 78 and just the two in op. 14 presented in this study. In spite of this asymmetry, the results contribute to reinforce the hypothesis that Miguéz employed organic constructive procedures in the composition of his violin sonata. Evidently, the analysis will be continued in the search to identify and classify other cases of linkage, aiming to present a complete panel of the use of this constructive technique in both sonatas.

This systematic search for evidence of the use of organic thematic construction in these pieces will be expanded in the next stage of the research through a similar analytical examination considering other procedures listed by Walter Frisch (1984: 170) as unequivocal indicators of developing variation: metrical manipulation and thematic transformation.

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