

Harmonization of Brazilian Popular Songs

Silvio Augusto Merhy

Instituto Villa-Lobos, Universidade Federal do Estado do Rio de Janeiro, Unirio, Rio de Janeiro, 22290-240, Brazil

Abstract Harmonization of popular songs in Brazil has, for quite some time, been considered worthy of the attention of both music theorists and musicologists. The accompaniments attract attention due to their varied and sometimes original character. The peculiarities of the harmonization of popular Brazilian songs may not always be immediately comprehensible, nor correspond exactly to conventions found in analyses of the traditional concert repertoire. The chief reference treatises and manuals adopted in music schools can certainly provide satisfactory explanations, when appropriately used. Yet many specialists consider problematic some concepts and definitions that should facilitate the task of analysing popular songs. The *Manual of Harmony* by Igor Vladimirovich Sposobin, 1955 edition, is the textbook adopted for harmony classes in the undergraduate program at the Universidade Federal do Estado do Rio de Janeiro – Unirio. Considered one of the most complete on the topic, it is also used at the Tchaikovsky Conservatory in Moscow. The 2007 edition is also used for reference. Nevertheless, it is worth mentioning that the book has not been used intensively for the analysis of popular songs. The *Manual* covers 60 topics, some of which are useful in explaining harmonic language frequently present in popular songs. Concepts such as inclination, the major-minor system, augmented sixth chords, Neapolitan harmonies, ellipse, diminished-seventh chords and chords with non-chord tones, can be used to explain many of the harmonies heard in Brazilian popular songs.

Keywords Harmony, Brazilian Popular Songs, Musical Analysis

1. Introduction

Music theorists and musicologists in Brazil have been turning their attention to the harmonization of popular songs for decades, because of its variable and sometimes original uses. The harmonic peculiarities of Brazilian popular songs necessitate clarification since they do not correspond exactly to the time-honoured conventions of the traditional repertoire.

The best-known instructional manuals adopted by music institutions provide acceptable explanations. These books contain concepts and definitions ready to use in exercises, but up to now have seemed difficult for some experts, and thus have not been used intensively for the analysis of popular songs.

The undergraduate music program at the Universidade Federal do Estado Rio de Janeiro – Unirio, has adopted the *Manual for Harmony* by Igor Vladimirovich Sposobin as its textbook for the field. While the 4th edition has been used at Unirio since 1970 [1], the more recent, 2007 edition is now being used as well. The book has also been adopted at the Moscow Conservatory. The *Manual* covers 60 topics, some of which are useful in explaining harmonic language of

popular songs. Concepts such as inclination, the major-minor system, augmented sixth chords, Neapolitan harmonies, ellipse, diminished-seventh chords and chords with non-chord tones can be used to explain many of the harmonies heard in Brazilian popular songs. Similar explanations appear in related works by such authors as Almir Chediak [2], Arnold Schoenberg [3], Ian Guest [4], Joaquin Zamacois [5], Nicolas Rimski-Korsakov [6], Paulo Silva [7], Philip Tagg [8] and Walter Piston [9].

2. Selecting the Repertoire to be Analyzed

Brazilian popular song refers as much to the object of study as to the production of tunes sung in Portuguese. In any event, the current analysis encompasses songs with Brazilian Portuguese lyrics. The study is not restricted to a particular time period, since doing so might lead to mistakes. As an example, the harmonic complexity frequently associated with Bossa Nova would seem to be at odds with the fact that songs recorded before 1950 contained non-diatonic harmonic progressions similar to those used after that period of time. For this reason, questions about the correspondence between genres, styles and period of time were put aside.

As an illustration, examples of the use of inclination include “Vira a casaca”, a song originally recorded in 1923 and remastered in 1996, played by Pixinguinha and the band Os Oito Batutas.

* Corresponding author:

simerhy@globo.com (Silvio Augusto Merhy)

Published online at <http://journal.sapub.org/edu>

Copyright © 2012 Scientific & Academic Publishing. All Rights Reserved

3. Spossobin's Concepts and Their Applicability to the Concepts Used in the Analysis of Popular Songs¹

3.1. Inclination

In the 31st Theme of the Manual, page 235 [1], Spossobin defines inclination as “briefly leaving the principal tonality and moving into a secondary tonality during the exposition of a monotonic or modulating structure (period). There are two types of inclination: passing and cadential. The passing inclination occurs inside the structure, without the cadence, it is similar to the passing tone or passing chord.”

On page 234 of the Manual the author distinguishes inclination from modulation as “passing into a new tonality to conclude the musical structure in that tonality. As a rule, modulation ends in a complete cadence. The simplest modulation is that which substitutes the tonality at the end of the first period [1].”

Table 1. Examples of Songs with Inclinations

1. “Vira a casaca” (Support another Team) by Joubert de Carvalho and Gáudio Viotti
Key: C major
Chord progression: E7/B AmF# ^o C/G Dm G7 C
Analysis: V VI VIm #IV ^o I VIIm V7 I
Placed at the second phrase of the second part.
2. “João e Maria” (John and Mary) by Chico Buarque and Sivuca
Key: A minor
Chord progression: Am7 Dm7 G7 Gm7 C7 F7M
Analysis: Im7 IIIm7 V7 IIIm7 V7 VI7M
Corresponding lyrics: “...E pelaminha lei a gente era obrigada a ser feliz...”
3. “Água de beber” (Drinking water) by Tom Jobim and Vinícius de Moraes
Key: B minor
Chord progression: E7(9) Em7(9)A7(13) D7M(9)
Analysis: V7(9) IIIm7(9) V7(13) I7M(9)
Corresponding lyrics: “...E quissalvarmeucoração...”
4. “Look to the sky” by Tom Jobim
Key: E flat major
Chord progression: Abm7 Db7 Gb7M
Analysis: IIIm7 V7 bII7M
Placed at the final part of the song.
5. “O bêbado e a equilibrista” (The alcoholic and the man on wire) by João Bosco and Aldir Blanc
Key: A major
Chord progression: A7M C#m7 (b5) F#7 Bm7 D7M Bm7 E7(9) C#m7
Analysis: I7M IIIm7 (b5) V7/II IIIm7 IV7M IIIm7 V7/I IIIm7
Corresponding lyrics: “... e um bêbado trajando luto me lembrou Carlitos,
A lua, tal qual a dona de um bordel, pedia a cada estrela fria um brilho dealuguel!”
6. “Na intimidade me preto” (Intimately, I’ll call you my black) by Nei Lopes
Key: F major
Chord progression: F Gm7C7 F F7 Bb6
Analysis: I IIIm7V7 I V7 IV IV6
Corresponding lyrics: “Quando eu saio pra propaganda ela faz um escarcêu, Dizendo que eu não valho nada, E que a grandeculpada é a Princesa Isabel”

This definition coincides with the notion of inclination as taught in both schools of music and in well-known manuals. Inclination is a harmonic technique that appears in the majority of songs. For this reason it may not be appropriate to group repertoire by its country of origin or a specific time period. However it is important to note that the process of inclination applied to some songs can be slightly different from the above definition.

The notion of inclination is frequently replaced by the concept of secondary dominants, more often used to explain harmonization in popular music. Almir Chediak [2] and Ian Guest [4] have consistently used it as an alternative to the term inclination. The concepts of secondary dominants and tonics are also explained in the 32nd Theme of the Spossobin’s Manual. There are many songs in which secondary dominants are combined with secondary or interpolated subdominants and followed by deceptive cadences (ellipsis), as in the passages shown below.

Most of the examples listed below have already been discussed in my dissertation, “Bossa Nova: a permanência do samba entre a preservação e a ruptura” (Bossa Nova: the endurance of samba amid preservation and rupture) [9].

3.2. Major-Minor System

The major-minor system is an important aspect of harmonic analysis. Spossobin defines the concept on page 374 [1] of the 49th Theme: “in the development of the idea of modality, the major and the minor modes have never had an isolated, independent existence. On the contrary, it has long been noted that changes, linked to the interaction of both modes, have produced complexities through the insertion of harmonic elements from either mode, which, as a result, become richer. The major and minor modalities become more complex due to their interaction and form the major-minor system, named major-minor or minor-major, depending on the leading tonic, major or minor. The system can be homonymous if they share the same tonic (for example C major – C minor) or parallel (for example C major – A minor).”

Modal interchange has been widely used in popular music. Philip Tagg points out that bitonality is common in many popular styles of Latin American music (page 10) [8]. Chords from the minor mode are often inserted in a song whose prevailing tonality is in the major mode. On the contrary, inserting major mode chords in a progression whose principal tonality is in the minor mode is much less common. The exception to this is the Picardy third, used both in traditional and popular music.

The idea of modal interchange comes closer to Spossobin’s definition, due to the fact that major and minor mode are often mixed together. It is important to consider additional modal interchanges, which occur in the church modes: Mixolydian, Lydian, Phrygian and Dorian. In his book, *Theory of Harmony*, Arnold Schoenberg describes the genesis of the major and minor modes and considers them “both a residue of the seven church modes” [3].

¹ The author translated the originals.

However, modal interchange in popular music typically occurs when the major and minor tonics are the same, or homonymous. In Walter Piston’s *Harmony*[10] he explains modal interchange along with the idea that the minor mode runs parallel to the major. The same notion appears in Spissobin’s *Manual*, yet the minor mode is not the homonymous but the relative, which shares the same key signature as the corresponding major.

The major-minor system comprises the modal interchange concept as demonstrated below:

Table 2. Examples of Songs in Major-Minor System

1. Look to the sky by Tom Jobim
Key: E flat major
Chord progression: Abm7 Db7 Gm7
Analysis:IVm7 bVII7 IIIm7
Placed at the second phrase of the first part.
2. “O bêbado e a equilibrista” (The alcoholic and the man on wire) by João Bosco and Aldir Blanc
Key: A major
Chord progression: Dm7 G7(13) D#° A7M
Analysis:IVm7 bVII7(13) I°17M
Corresponding lyrics: “...Louco, o bêbado com chapéu-coco...”
3. “Luiza” by Tom Jobim
Key: C minor
Chord progression: D7(b9) G7(b9) C7M(9)
Analysis:V7(b9) V7(b9) I7M
Corresponding lyrics: “...Escuta agora a canção que eu fiz pra te esquecer, Luiza...”
4. “Gatas extraordinárias” (Amazing babies) by Caetano Veloso
Key: E major
Chord progression: E7M Bm7 E7(13) A6 Am6 G6 C7M F#7 B7(b13) Em7
Analysis:I7M IIIm7 IV V7 IV IV6 IVm6 bIII6 bVI7M V7/V V7 Im7
Placed at the first phrase.

3.3. Augmented Sixth Chord

The harmonic structure known as subV has been increasingly used in popular music, both in the harmonization and re-harmonization of songs. The so-called subV chord has as its main characteristic the augmented sixth, which is derived from the inversion of the diminished third between the major third and the diminished fifth of the dominant chord. Hence, it may be more useful to think of it as the second inversion of the dominant chord with a lowered fifth, where its diminished third is converted to an augmented sixth. Both Schoenberg and Piston considered this an important topic, and dedicated complete chapters to it.

The repeated use of this chord may overshadow the fact that it is simply an alteration or variation of a dominant chord with a lowered fifth.

Spissobin describes these altered chords as comprising not only the lowered II degree of the major mode (which is the fifth of the dominant chord) but other possible altered tones inserted in a variety of chords on different scale degrees. He states, “As is well known, the alteration represents the intensification of a semitone in the tension of a whole tone existing in the mode, without changing the chord function and without leaving the respective tonality. The

corresponding chord is called an altered chord. Altered harmonic compounds have their origin in chromatic passing tones in different voices inside the diatonic mode. The basic alteration present in most harmonic functions is associated with the change of the II degree of the scale. Its alteration in the major mode can be done by raising or lowering it; in consequence, the intensification of the tension occurs toward the tones of the lower third of major tonic triad, i.e., toward the I and the III scale degrees. In the minor mode, raising the II degree is not possible, thus the alteration in that mode is based exclusively by lowering the II degree and, to some extent by altering the IV degree. Consequently the intensification of the tension occurs toward the lower third of the tonic minor triad[1].”

This quotation makes clear the origin of the chord alteration. The harmonic situation is quite common and can be heard in various songs, of which three were selected.

Table 3. Examples of Songs with Augmented Sixth Chord

1. “Luiza” by Tom Jobim
Key: C minor
Chord progression: D7(9) Dm7(9) Db7 G7(b5) Cm7(9)
Analysis:V7(b9) Im7(9) V7/b5 V7(b5) Im7(9)
Corresponding lyrics: “...Acordaaamor, queeuseiqueembaixodesta neve mora um coração...”
2. “Sótinha de ser com você” (It must be you) by Tom Jobim
Key: F major
Chord progression: F7M C7(#9) F7M Gb7(b13) Cm7(9) Bm7(b5) Bbm6(9)
Analysis:I7M V7(#9) I7M subV7(b13) Im7(9) IV #IVm7(b5) IVm6(9)
Placed in the first phrase.
3. “Derradeira primavera” (Ultimate springtime) by Tom Jobim and Vinícius de Moraes
Chord progression: Dm7 E7 Bb7 Am7
Analysis:IVm7 V7 bII7 Im7
Placed at the end of the song.

3.4. Neapolitan Harmonies

The lowered II degree can often be detected in the harmonization of popular songs. It shows up most frequently in the bII^{7M} root position form. The most common way to explain it is through its origin from the Phrygian mode, considered a modal interchange.

The shape of this structure however, may be explained by its origin, as described by Spissobin on page 352 of the 47th Theme: “The most significant and common altered subdominant chord is b_1sII , formed by the sII of the minor and the harmonic major mode, through the alteration of the chord’s root. In addition to the lowered fifth of the minor subdominant chord, the first inversion contains an altered sixth, formed between the lowered root and the third of the chord. This lowered II major triad in its first inversion is the Neapolitan sixth chord, sometimes called Neapolitan harmony. It first appeared in works of XVII century composers from the Neapolitan Opera School (A. Scarlatti, A. Stradella and others), as a Phrygian minor mode harmonic compound[1].”

Spissobin goes on to explain the use of the seventh in

Neapolitan harmony: “A passing tone between the b_1sII_6 altered tone and the dominant third gradually created a new Neapolitan harmony – the Neapolitan seventh chord (b_1sII_7). Combining s and b_1sII_6 in the major and minor mode altogether shaped it. It is a major chord due to the major triad and its seventh[1].”

Indeed, the appearance of the Neapolitan chord in root position is quite peculiar: “Later, the lowered II triad in root position appeared. Originating from the Neapolitan sixth chord, it emerged in a singular way, as if it had been an inversion form the original chord[1].”

Table 4. Examples of Songs with Neapolitan Harmonies

1. “Gema” (Gem) by Caetano Veloso
Key: G major
Chord progression: Cm F7(9) Bb Bb7 Eb7M Ab7M Am7(11)
Analysis: IIm7 V7/bII bIII V7/bVI bVIbII7M IIm7(11)
Corresponding lyrics: “...esquecer, não, me perder, não...”
2. “Bronzes e cristais” (Bronzes and crystals) by Alcyr Pires Vermelho and Nazareno de Brito.
Key: F major
Chord progression: F7 Bb7 Eb7 Ab7 Db7 Gb7M C7 F7M
Analysis: V7 V7 V7 V7 V7 bII7M V7 I7M
Placed at the last phrase of the song.

3.5. Ellipsis

In linguistics, ellipsis (from the Greek *éllipsis*, "omission") refers to the absence of one or more words from a clause. In Spossobin's *Manual* it refers to the lapse of an expected resolution. Other designations, such as deceptive cadence, deceptive resolution and irregular resolution appear in Schoenberg's *Theory of Harmony*, page 136[3], and Piston's *Harmony*, page 191[10]. The concepts of ellipsis and irregular resolution have not been applied to the harmonic analysis of popular music. In some cases these terms were replaced by extended and consecutive dominants that deal specifically with a dominant chord resolution in which the tonic preserves the major triad but adds a minor seventh, changing it to a dominant chord (Chediak, page 266[2], and Guest, page 99 volume 1[4]). The concept of extended dominants is related to a generic jazz notion that defines a dominant chord as a preparation chord: due to its tension it can prepare or precede any chord placed a fifth below. For example, the dominant of the dominant chord ($\text{V7} - \text{V7}$), a secondary dominant, involves a situation in which a dominant chord precedes another chord with the same structure and does not have the expected resolution, typically to a stable major or minor chord. According to Spossobin, the double dominant chord, as defined in the *Manual*, does not characterize ellipsis as long as the resolution is not omitted. On the other hand, ellipsis does take place in the case of consecutive dominants since the resolution chords are continuously replaced.

The notion of ellipsis does not appear in Chediak and Guest, but is replaced by the deceptive resolution, the same as described by Schoenberg, (page 137): “This term is understood to mean the substitution for the expected progression, V-I”[3], and mentioned by Philip Taggon in his

article *Troubles with tonal terminology*, page 9[8]. Guest (page 70, volume 2) describes it as follows: “The deceptive resolution occurs when the dominant chord does not lead to the predictable resolution”[4].

Spossobin explains the term on page 426 of the 56th Theme: “Literally meaning absence or omission, ellipsis is formed by replacing the expected chord with any other without delay, in the functional sequence of the first chord. Ellipsis juxtaposes two chords that have no immediate relation such as dominant and tonic, subdominant and tonic or DD and D[1].”

Harmonic progressions, understood as extended and consecutive dominants, are explained on page 430: “the expected tonic chord is replaced by the dominant seventh chord, built on the same bass note of the tonic chord, so as to create the dominant cycle, ending, in most cases, with D7 of S or SII[1].”

The use of extended dominants is one of the harmonic situations that can be called ellipsis in popular music. Sometimes the resolution to extended dominants is delayed due to the interpolation of a subdominant chord. Interpolated subdominants can appear in situations as often in ellipsis as in inclinations. (See the examples of inclination above).

Table 5. Examples of Songs with Ellipsis

1. “Joana, a Francesa” (Joana, the French) by Chico Buarque and Francis Hime
Key: C major
Chord progression: Dm7 /E F7M Bbm6 A7 D7 G7
Analysis: IIm7 IV7M bVIIm6 V7 V7 V7
Corresponding lyrics: “Treme de preguiça e de suor, já é madrugada...”
2. “Chorinho pra ele” (Chorinho for him) by Hemeto Pascoal
Chord progression: F7 Bb7 Eb7 Ab7 Db7 C7 F7
Analysis: V7 V7 V7 V7 V7 V7 V7
Placed at the introduction.
3. “A rã” (The frog) by João Donato and Caetano Veloso
Key: F major
Chord progression: A7(13) A7(b13) D7 D7(b13) Bb7M C7(13) D7M
Analysis: V7 V7 V7 V7 V7
Final cadence.
4. “Estrada do sol” (Road to the sun) by Tom Jobim and Dolores Duran
Key: F major
Chord progression: Bbm7 Eb7 Am7 D7(9) Abm7 Db7(9) Gm7 C7
Analysis: IIm7 V7 IIm7 V7(9) IIm7 V7(9) IIm7 V7
Corresponding lyrics: “...quero que você me dê a mão...”
5. “Sóinha de ser com você” (It must be you) by Tom Jobim.
Key: F major
Chord progression: A7 D7 G7 C7 F7M
Analysis: V7 VI V7 II V7 V V II7M
Placed at end of the first phrase.

3.6. The Seventh Diminished Chord

The seventh diminished chord is commonly designated as a diminished chord on the VII degree of the harmonic minor scale. This chord has become, for many reasons, one of the most useful harmonic elements in popular music. As a result, its origin from the harmonic minor scale has been forgotten in various harmonic progressions and does not even appear in the chord symbol used to notate the diminished chord.

Chord symbol notation is, by and large, insufficient to represent harmonic elements. Conventionally it does not indicate the inversion as commonly used for all other chord labels, as for example, D^o would stand for B^o/D. In some harmonic progressions the chord symbol of a root position is given, though it is actually an inversion. This kind of simplification has some advantages, though it may cause misunderstandings. In any case, one should note that the same chord symbol used for root position might be used to represent an inversion of other chords, sometimes as an enharmonic equivalent.

In general, in popular music diminished chords has two different functions:

- As a dominant chord of the seventh degree, which precedes the tonic chord.
- As an element derived from the combination of altered tones.

Both can appear as auxiliary or chromatic passing chords, sometimes without the dominant function. A passing chord can be explained as follows: the bass note of a diminished chord becomes a passing tone between two other bass notes, in ascending or descending stepwise motion.

Diminished chords preceding secondary tonics can be easily seen as having dominant function because they are related to the tonic as its seventh degree.

Diminished chords, however, do not have a dominant function when resulting from some other chords in which altered notes or non-chord tones are inserted. In any case, the melodic relation prevails over the harmonic relation: melodic motion in inner voices is made by chromatic or diatonic approach notes and prevails over the harmonic relation. They are voice-led chords and are designated as approach chords having no dominant function at all, regardless of whether the root moves up or down stepwise.

On the contrary, the seventh degree diminished chord is always connected to the resolution, up one degree in root position or other intervals, depending on its inversion.

Diminished chords may link neighbouring diatonic chords by moving the bass up or down. They are known as passing diminished chords because of the chromatic passing tone in the bass. However, they can function as auxiliary chords (I^o or V^o) when they have the same bass note as the first and the fifth degrees.

In Sposobin's *Manual*, diminished chords are not dealt with in one exclusive Theme (chapter). In the 22nd Theme they are explained in the context of the seventh degree of the minor scale, together with the seventh degree of the major scale, which, though built differently, has the same dominant function. The use of the VII chord of the major scale is not as widespread as that of the minor. However, the examples presented in the book are useful for both major and minor modes.

In the 57th Theme, devoted to enharmonic modulation, the diminished chord is dealt with exhaustively on page 439: "Enharmonic modulation by way of the diminished seventh chord is one of the most widespread examples of abrupt changes in tonality and a consequence of the universal

possibilities inherent in this chord. This type of modulation is based on the fact that diminished chords, in terms of sonority, have only three possibilities, though they can be formed on any of the twelve pitches of the chromatic scale. Thus each of the three inversions of the seventh diminished chord can resolve to any tonality as the leading tone of T, S or D[1]."

The examples are very specific and comply with the chord resolution and in every enharmonic situation. The correct notation is consistent with the expected tonality and the prevailing key signature.

The 57th Theme deals with the diminished chord involving only the dominant function on the seventh scale degree. In other harmonic situations that include the diminished chord, the chord in question is built with non-chord tones.

The examples below demonstrate two types of diminished chords: as a seventh degree chord and as an auxiliary chord formed with auxiliary notes. Both types can feature passing chords, unlike the auxiliary chord that can never have dominant function.

Table 6. Examples of Songs with Seventh Diminished Chords

1. Avarandado (Terraced) by Caetano Veloso
Key: A major
Chord progression: E7 A ^o A7M
Analysis: V7 I ^o I7M
Corresponding Lyrics: "...Tem um amoçarecostada..."
2. "Discussão" (Argument) by Tom Jobim and Vinícius de Moraes
Key: C major
Chord progression: C7M Eb ^o D7m D# ^o Em7
Analysis: I7M bII ^o Im7 #II IIIm7
Corresponding lyrics: "Se você pretender sustentar a opinião..."
3. "Entrudo" (Carnival parade) by Carlos Lyra
Key: B minor
Chord progression: Bm7 A# ^o Am7 D7
Analysis: Im7 VII ^o IIIm7 V7
Corresponding lyrics: "Vem, ó minha amada, desce a estrada de rainha..."
4. "Eusei que vou te amar" (I know I will love you) by Tom Jobim and Vinícius de Moraes
Key: C major
Chord progression: C7M Eb ^o Dm7
Analysis: I7M bII ^o Im7
Corresponding lyrics: "Eusei que vou te amar, portada a minha vida e vou te amar..."
5. "Feiçãõ é bonito" (It is ugly, not beautiful) by Carlos Lyra and Gianfrancesco Guarnieri
Tonalidade: Lá m
Hamonização: Dm7 D# ^o Am7 E F7M
Análise: I Vm7 #IV ^o Im7 S VI7M
Localizar: "...Ama, o morro ama..."
6. "Look to the sky" by Tom Jobim
Key: E flat major
Chord progression: Gm7 Gb ^o Fm7
Analysis: IIIm7 bIII ^o IIIm7
Placed at the end of the first phrase.

3.7. Chords with Non-chord Tones

The notion of a chord as a tertian structure is crucial to understanding the methodology used in Sposobin's *Manual*. Based on tertian structure, it is possible to view non-chord tones as relevant to distinguish between a chord and other types of harmonic compounds. The expression "harmonic compound" was created to translate the Russian word *совучие*, meaning notes sounding together. It is explained

early in the introduction where the author defines both concepts.

Harmonic compounds, or *cosvúchie*, refer to non-harmonic tones or non-chord tones. Similar to the 'non-harmonic' tones discussed by Schoenberg, (page 309[3]) and Piston, (page 109[10]): these are also defined in the introduction but developed in later chapters. Some of them are dealt with in separate chapters, for example the delayed notes are in the 36th and 37th Themes, passing tones in the 38th, 39th and 41st Themes.

Unlike tertian chords, harmonic compounds are formed by intervals other than thirds: they are random structures that appear accidentally in the melodic-harmonic relationship. The 44th Theme defines how these structures can be shaped, rather differently than the tertian chord.

Nevertheless, the accumulation of non-chord tones can occasionally form structures in thirds and are similar to the diatonic chords without the corresponding harmonic function. Diminished chords without dominant function are included here. While their structure is actually tertian, their function does not correspond to the seventh scale degree of the harmonic minor.

There are other harmonic situations in which chords do not correspond to their apparent function, such as minor chords that become dominant chords through the insertion of an altered tone. Despite this modification they maintain their original function.

The sus4 chord can be explained in much the same way: the perfect 4th is inserted as a suspended tone, but is considered part of the chord because of its intensive use. Due to its repeated use over time, the delayed tone lost its sense of novelty. There are numerous songs containing the perfect 4th, of which a few were selected for the list below.

Table 7. Examples of Songs with Chords with Nonchord Tones

1. #IVm7(b5):
“Aula de matemática”(Mathematics lesson) by Tom Jobim and Marino Pinto
Key: Fmajor
Chord progression: Gm7 Bbm/C Bm7(b5) Bbm6
Analysis:IIIm7 V74(b9) #IVm7(b5)IVm6
Placed at the end part.
2. Seventh diminished chord modified:
“Euseiquevou eamar” by Tom Jobim and Vinicius de Moraes
Key: C major
Chord progression: Am6 Abm6 C7M
Analysis:VIIm6 bVIIm6 I7M

4. Conclusions

Harmonic analysis can be applied not only to scores of classical music, but also to aurally perceived material in any cultural tradition. Composer and theorist Paul Hindemith in his *Traditional harmony* discussed the loss of prestige which

conventional harmony teaching had suffered. More recently, its rules would "have interest only for the backward-glancing and analytical student." (page iii)[11] The range of concepts studied in music schools should not be restricted to classical and more traditional types of music. The most recent discussion on musicology has pointed out that the borders separating composition and song writing, concert music and aural tradition, are not as easy to define as previously assumed.

In the second half of the 20th century a significant number of books were published with the term 'functional harmony' in the title. The focus of these was restricted to the harmonic functions of tonic, dominant and subdominant. Conversely, ancient treatises failed to fully describe the syntax of chord progressions but exceeded in rules about voice leading.

Brazilian authors including Francischini[12] Chediak[2] Nascimento[13] Brisolla[14] Guest[4] Lemos and Aguiar[15] Silva[16] Vicente[17] and others such as Lilja[18] Tagg[8] and Sessions[19], used the notion of functional harmony in their writings. Nevertheless, it is remarkable how ancient notions can also explain chord progressions in song writing in general and in Brazilian popular songs in particular. Such notions are based on concepts of functional harmony as well, although dealing with voice leading in detail. With respect to bossa nova style, it is possible to assert the primacy of harmony over melody, the same way as Jean-Philippe Rameau did in the 18th century.[20]

As demonstrated above, various chapters in Spossobin's Manual thoroughly and accurately explain chord progressions such as those used in Brazilian popular songs. This manual, and other such treatises on harmony as Koechlin[21], Zamacois[5] Rimski-Korsakov[6], and Persichetti[22] can certainly be used as a scholarly tool to analyze music of the past, as well as popular song writing.

Appendix

I. Inclination:

1. “Vira a casaca” (Support another team) by Joubert de Carvalho and Gáudio Viotti
PIXINGUINHA. No tempo dos oitobatus. Curitiba: Revivendo, 1995
2. “João e Maria” (John and Mary) by Chico Buarque and Sivuca.
NARA LEÃO. Meus amigos são um barato. Rio de Janeiro: Philips, 1977.
3. “Água de beber” (Drinking water) by Tom Jobim and Vinicius de Moraes
TOM JOBIM. Antonio Carlos Jobim, the composer of Desafinado plays. Los Angeles: Verve, 1963.
4. “Look to the sky” by Tom Jobim
TOM JOBIM. Wave. Los Angeles: A&M Records, 1967.
5. “O bêbado e a equilibrista” (The alcoholic and the man on wire) by João Bosco and Aldir Blanc
ELIS REGINA. Essamulher. Rio de Janeiro: WEA, 1977.
6. “Na intimidade meupreto” by Nei Lopes

CASUARINA. Casuarina. Rio de Janeiro: Biscoito Fino, 2005.

II. Major-minor system:

Major-minor system comprises the modal interchange concept:

1. “Look to the sky” by Tom Jobim

TOM JOBIM. Wave. Los Angeles: A&M Records, 1967.

2. “O bêbado e a equilibrista” (The alcoholic and the man on wire) by João Bosco and Aldir Blanc

ELIS REGINA. Essamulher. Rio de Janeiro: WEA, 1977.

3. Luiza by Tom Jobim

TOM JOBIM. Passarim. New York: Verve Records/Polygram, 1987.

4. Gatasestraordinárias (Amazing babies) by Caetano Veloso.

CASSIA ELLER. Com você meu mundo fica completo. Rio de Janeiro: Universal, 1996.

III. Augmented sixth chord:

1. Luiza by Tom Jobim

TOM JOBIM. Passarim. New York: Verve Records/Polygram, 1987.

2. “Sózinha de ser com você” (It must be you) by Tom Jobim

ELIS REGINA. Elis & Tom. Los Angeles: Polygram, 1974.

3. “Derradeira primavera” (Ultimate springtime) By Tom Jobim and Vinícius de Moraes

NARA LEÃO. Opinião de Nara. Rio de Janeiro: Elenco, 1964.

IV. Neapolitan harmonies:

1. “Gema” (Gem) by Caetano Veloso

TEREZA CRISTINA. Delicada. Rio de Janeiro: EMI Music Brasil, 2007.

2. “Bronzes e cristais” (Bronzes and crystals) by Alcyr Pires Vermelho

MAYSA. Convite para ouvir Maysa nº2. Rio de Janeiro: RGE, 1958.

V. Ellipsis:

1. “Joana, a Francesa” (Joana, the French) by Chico Buarque and Francis Hime

CHICO BUARQUE. A Arte De Chico Buarque. Rio de Janeiro: Universal Music, 2004.

2. “Chorinho pra ele” (Chorinho for him) by Hermeto Pascoal

HERMETO PASCOAL. Missa dos escravos. Rio de Janeiro: Warner, 1977.

3. “A rã” (The frog) by João Donato and Caetano Veloso

JOÃO DONATO. Quem é quem. Rio de Janeiro: EMI, 1973.

4. Estrada do sol by Tom Jobim and Dolores Duran

AGOSTINHO DOS SANTOS. Agostinho dos Santos. Rio de Janeiro: Polydor 262-a, 1958.

5. “Sózinha de ser com você” (It must be you) by Tom Jobim

ELIS REGINA. Elis & Tom. Los Angeles: Polygram, 1974.

VI. Seventh diminished chords:

1. Avarandado by Caetano Veloso

CAETANO VELOSO. Domingo. Rio de Janeiro: Philips, 1967.

2. Discussão by Tom Jobim and Vinícius de Moraes

JOÃO GILBERTO. O amor o sorriso e a flor. Rio de Janeiro: Odeon, 1960.

3. Entrudo by Carlos Lyra

ELIS REGINA. Elis especial. Rio de Janeiro: Philips, 1979.

4. Euseiquevouteamar by Tom Jobim and Vinícius de Moraes

TOM JOBIM. Novo Millenium. Rio de Janeiro: Universal, 2005.

5. “Feião é bonito” (It is ugly, not beautiful) by Carlos Lyra and Gianfrancesco Guarnieri

CARLOS LYRA. Carlos Lyra. Rio de Janeiro: Continental, 1974.

6. “Look to the sky” by Tom Jobim

TOM JOBIM. Wave. Los Angeles: A&M Records, 1967.

VII. Chords with nonchord tones:

1. “Aula de matemática” de Tom Jobim e Marino Pinto

TOM JOBIM & MIUCHA. O essencial de Miucha e Tom. Rio de Janeiro: RCA, 1979.

2. “Euseiquevouteamar” by Tom Jobim and Vinícius de Moraes

TOM JOBIM. Novo Millenium. Rio de Janeiro: Universal, 2005.

REFERENCES

- [1] Igor V. Sposobin, “Manual de harmonia”, 4th ed., Música, Russia, 2007. (Russian original)
- [2] Igor V. Sposobin, “Manual de harmonia”, 4th ed., Música, Russia, 1965.
- [3] Almir Chediak, “Dicionário de acordos cifrados”, Vitale, Brasil, 1984.
- [4] Arnold Schoenberg, “Theory of harmony”, Faber, UK, 1978.
- [5] Ian Guest, “Harmonia”, Vol. 1 and 2, Lumiar, Brasil, 2006.
- [6] Joaquin Zamacois, “Tratado de armonia”, vol. 1, 2 and 3, Labor, España, 1975.
- [7] Nicolai Rimski-Korsakov, “Tratado practico de armonia”, Ricordi, Argentina, 1970.
- [8] Paulo Silva, “Manual de Harmonia” 6th ed. Brasil, 1962.
- [9] Philip Tagg, “Troubles with tonal terminology”, text submitted as contribution to Festschrift for Coriún Aharomián and Graciela Paraskevaïdes, UK, November - December 2011
- [10] Philip Tagg, “Definitions of terms to do with tonal polyphony”, handout version 3, UK, October 2005.
- [11] Silvio A. Merhy, “Bossa Nova: a permanência do samba entre a preservação e a ruptura”, Dissertation, UFRJ, Brasil, 2001.
- [12] Silvio A. Merhy, “Oscilações do Centro Tonal nos choros de Garoto”, Thesis, UFRJ, Brasil, 1996.

- [13] Silvio A. Merhy, "Letra, melodia, arranjo, componentes em construção 'O morronão tem vez' de Antonio Carlos Jobim e Vinícius de Moraes", *Per Musi* vol. 22, Brasil, 2010.
- [14] Walter Piston, "Harmony", Norton, USA, 1978.
- [15] Paul Hindemith, "Traditional harmony", vol. 1 and 2, Schott, USA, 1968.
- [16] Alexandre Francischini, "Laurindo Almeida e a Bossa Nova: precursor ou difusor do novo estilo?" IX Congresso IASPM-AL, Venezuela, 2010.
- [17] Hermilson Nascimento, "A partitura e análise da música popular: construindo uma instância provisória de representação do original virtual", ANPPOM XX Congresso, ISSN 1983-5981, Brasil, 2010.
- [18] Cyro Brisolla, "Princípios de Harmonia Funcional", 3rd ed. Annablume, Brasil, 2008.
- [19] Julio Cesar Moreira Lemos and Werner Aguiar, "A MPB instrumental contemporânea e a produção violonística de Marco Pereira: análise da obra 'Samba Urbano'", ANPPOM XXI Congresso, ISSN 1983-5981, Brasil, 2011.
- [20] Raphael Ferreira da Silva, "A interação na improvisação por meio do sistema das inversões", ANPPOM XX Congresso, ISSN 1983-5981, Brasil, 2010.
- [21] Rodrigo Aparecido Vicente, "A sonoridade do Trio Surdina", ANPPOM XXI Congresso, ISSN 1983-5981, Brasil, 2011.
- [22] Esa-Lilja, "Theory and Analysis of Classic Heavy Metal Harmony", Finish Music Library Associations, Finland, 2009.
- [23] Roger Sessions, "Harmonic Practice", Harcourt, USA, 1951.
- [24] Jean-Philippe Rameau, "Traité de l'harmonie", France, 1722.
- [25] Charles Koechlin, "Traité de l'harmonie", Max Eschig, France, 1946.
- [26] Vincent Persichetti, "Harmony", Norton, USA, 1961.