

COMPARATIVE STUDY OF THE PERFORMANCES OF GREEK ADOLESCENTS IN DICTÉE¹

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Abstract: Music dictation (dictée) constitutes one of the most difficult challenges in the teaching of music and a source of disappointment for the students. Their errors, during this lesson, may be fundamental to our research. The goal of this paper is to observe, describe and analyse the errors made during the recording of melodies of western European and tropical Greek demotic music (traditional cosmopolitan melodies). These errors indicate proof and a means of analysis of the mental procedures which are inextricably connected to the teaching of music. By analysing these errors we will attempt to discover the causes which provoke difficulties and are inextricably connected to notes, intervals, scales, drops and rhythmic values. The statistical sample of the students (36 students) is a representative of the two different teaching methods (traditional and Kodaly) in an environment of a specific musical culture (Greek).

Keywords: music education; Western-European music; tonic music; Greek demotic music; music dictation (dictée); errors

Resumen: El dictée (dictado musical) es una de las pruebas más duras en la enseñanza de la música y fuente de frustración para los estudiantes. Sus errores durante este curso pueden ser reveladores en nuestra investigación. Nuestro objetivo es observar, describir y analizar los errores cometidos en la transcripción de melodías tonales y de música tropical occidental tradicional griega (melodías tradicionales). Estos errores son signos y medios de análisis de los procesos cerebrales que están íntimamente ligados al aprendizaje musical. Analizándolos, trataremos a descubrir las causas de las dificultades que causan estos errores en treinta y seis estudiantes y que están íntimamente ligadas a los intervalos, los niveles, las cadencias y los valores rítmicos. La muestra estadística de estudiantes (36 estudiantes) es representativa de las dos diferentes enseñanzas (tradicional y Kodály) en un medio ambiente de la cultura musical específica (griego).

Palabras clave: Educación musical; música europea-occidental; música tónica; música popular; música dictado (dictée); errores

1. Introduction

Modern pedagogy researches different domains of the mental abilities of an individual. It could be approached, amongst others, via three levels:

1. The structure of knowledge, which depends on different pedagogical means, requirements and conditions in order to be obtained.
2. The tasks which affect the individual's abilities via pedagogical methods and exercises.
3. The evaluation, via recommended musical exercises which require special pedagogical methods, in order to research and record the performance of students and to focus the reasons which cause errors during the exercises and the categories they belong to. (Descomps, 1999: 175)

2. Theoretical background

2.1. Music culture (socio cultural dimension³)

Demotic Greek music developed parallel to the Byzantine music, having been affected by ancient metric. This musical type is mainly monophonic and ignores the major and minor ways. The demotic song finds its roots in Byzantine music (Giannelos, 1996: 252), which combines its scales and modes, using eventually fourteen ways, divided into three categories of five, four and five ways respectively.

The modes of the first category are used by Modern Greek music and do not present an adduction. In these modes the distance between the VIIth and VIIIth degree is bigger than a semitone and the natural ascending pull does not exist. The modes of the second category have an adduction from the VIIth to the VIIIth degree, however creating, with the suitable modifications of other degrees (alterations of notes), distances of the semitone and among other notes, except for the one which exists between the VIIth and VIIIth. While those of the third category constitute a combination of the first two categories, that is, although the main adduction is missing (just like the first category) there are one or more secondary adductions among the other degrees.

Demotic songs which contain "Greek echo colours" belong to the first and third category, while those that contain "eastern or gypsy echo colours" with a sensuous and often erotic character belong to the second. The main characteristic of the demotic songs of the second category is that of the interval of the ascending second or the augmented second.

Within the fourteen modes which characterise the Greek demotic song, we can also find songs which have been composed in

the western European major and minor ways. These, however, in turn derive, as is already known, from ancient Greek modes.

Within this cultural boundaries, we state two hypotheses according to which:

- **Hypothesis 1 (H1):** *The systematic education of the western European music, dominates within the musical culture (Greek modal music) of the socio-cultural environment of the students, causing, however, significant difficulty in the consolidation and interpretation of tonal exercises. (Mauss, 1989: 281-310), (Naugle, 2002: 238).*
- **Hypothesis 2 (H2):** *The conflict between cognitive and experienced (emotional) procedure of interpretation of a score, is caused by the necessary co-existence of two different music systems: the tonic (which involves the cognitive field) and the modal (which involves the emotional field). (Frances, 1984: 23), (Micha, 2009: 332-333)*

2. 2. Methods of teaching music (pedagogical dimension)

The traditional method of teaching music in Greece is characterized by the practising of music dictation via the consolidation of the two musically structured elements: melodic and rhythmic (Mialaret, 1978: 58). This involves, to begin with, the parallel acquisition of different skills (Mialaret, 1978: 57) such as the ability to recognise, reproduce and name different heights of notes), the melodic reading of rhythmic melodies, the consolidation of a melodic profile of an ascending form prior to a descending one. Then, the teacher will mention all possible combinations of the notes of the scale (Mialaret, 1978: 52), from the simplest to the most complicated. Simultaneously, he introduces students to the tonic structure, and the recognition of the intervals of the fourth and the fifth, which are the most accessible to the human voice, as well as the logic behind the diatonic scale and the interchanging of the semitone. By acquiring a theoretical and practical background from the very first lesson, students can more easily associate reading music with music dictation.

In the Kodaly method, all the previously mentioned elements of learning music are presented in conjunction with the characteristics of Hungarian Folk melodies. It begins with the teaching of songs which contain two or three notes and evolve into the five note ones to be conducted with the diatonic scale.

The learning of the melodic-rhythmic musical extracts is certain via this procedure (Szonyi, 1976: 10). One of the

characteristics of this method is attributed to the parallel learning of the song, the listening of musical works, the reading and writing of music whose subject is inextricably connected among them. Different or new notes acquired through learning regarding their absolute tonic height but through their position in the interior of the relevant scale. This requires that the new notes are presented as a group of two or more notes, in other words they group together. Students can also refer to notes with different names, as the procedure of phononimie (Selosse, 1982: 229) suggests. An important part of the Kodaly method has to do with the domain of internal hearing or “correct” intonation which is achieved via teaching method which has been adapted to each child.

2. 3. Mental functions of music teaching (psychological dimension)

The acquired knowledge during music teaching is realized with a series of questions which relate to:

- The way in which Greek students develop their different musical abilities;
- The individually adapted strategies for the completion of the exercise;
- The reasons for which these students (the majority of whom do not have a complete technical and theoretical musical education) do not understand the different structural musical elements (intervals, chords, degrees, scales, tonic forms, converters, rhythmic values);
- The types and frequency of the errors made during the lesson of musical dictation (dictée).

According to R. Frances (Frances, 1984: 18), the errors made are attributed mainly to the weakness of the students to recognise the four basic elements of the melody: the direction or the melodic movement of the melody, the size of the intervals, the quality of the pauses (diatonic, coloured, ascending, descending) and the rhythm (Cummings-Persellin, 1992: 306). The omissions and errors, as far as the rhythmic awareness is concerned, are concentrated mainly on the time and dynamics between the notes. The relationship between the notes of tonic height and the chronic duration of the rhythm of melody, demand human mental functions, such as perception, understanding, memory, acoustic ability (Cuddy, 1992: 333), the symbolic re-enactment, attention, all of which ought to function either individually or collectively for the recognition of a melody.

In a steadily rising scale system, the point of initiation and interest among its seven degrees is the tonic, the understanding of which determines the hierarchy of the degrees in an octave. Every degree is thus characterised by a special acoustic level, compared to the tonic one so as to be recognised. The distance between two degrees determines a distance of a tone or a semitone which varies according to the two most taught ways, major and minor. According to B. M. Teplov (Frances, 1984: 105), these ways become noticeable not as a consequence of obtained knowledge but as an accumulation of older musical acoustic experiences which are reproduced as feelings of intensity or diffusion, suspension or completion, pausing or moving.

To the above different views, we must add the factor of habit or the already formed musical experience in the modal Greek demotic music which is an integral part of people's daily lives. We also take into consideration the adaptation of the students to the musical culture of the tonic Western-European music, through education, which constitutes a prerequisite in the development of a new musician. The basic characteristics of Greek music culture in a society bonded to its traditions, associated with important social events, and entirely attached to the daily musical experiences of the students, vary as far as the principles of the discerning of the octave and the tonic Western-European music are concerned.

The errors which are observed from the confusion caused by the phenomenon of adjusting to a new musical culture have been coined "perception errors" by R. Frances. The acquired musical knowledge depends on one's musical experiences, according to R. Frances (Frances, 1984: 52), to the extent that those musical desires constitute a total of references of the past.

From the previous theoretical frame we can assume (Frances, 1975: 5-16), (*Micha, 2009: 335-339*) that:

- The errors which appear during an educational procedure are attributed to the ability to or not to recognise a melody;
- The errors which appear during an educational procedure are attributed to the Cognitive skills and musical culture of a student;
- The errors which appear during an educational procedure are attributed to the way in which one uses one's knowledge⁴.

3. The research methodology

The research methodology was mixed (quantitative & qualitative). Before starting the research, we made a spot

observation of the key parties involved (teachers and students), the used pedagogical methods as well as the educational material, to deepen more and set boundaries in the area of research and thus identify its problems (questions and hypotheses). In order to confirm the socio-cultural dimension of our research, a questionnaire of personal evaluation (Singly, 1992: 21) was given to the students before the exercises. In order to confirm the psychological dimension of our research, just after the students have completed the exercise, we proceed with the method of determination interviews (Blanchet et al., 1992:125), including questions concerning the performance and errors made during specific exercises. Finally, in order to confirm both the pedagogical and the psychological dimension of our research, an analysis of the content (Lassare, 1978: 167), (Robert et al., 1997: 125) was made. All the errors the students made in structural elements of the exercises (intervals, degrees, cadences) were recorded, categorized and analyzed. These structural elements were transferred to three groups of tables, with the description (types of errors /quality of errors) and the interpretative analysis of the errors (possible reasons the errors were made).

3. 1. Statistical sample

The research was conducted in the Municipal Conservatory of Patras (Greece), during the academic year 2009-2010, the last month of every term (November, March, June). Forty eight hours of lessons in twenty eight tapes⁵ (the lesson lasts 45 minutes) were recorded. Thirty six students (18 boys, 18 girls) from 12 to 16 years of age were involved, in three classes of "third theory"⁶. The majority of students belonged to the middle class, affected by a variety of musical influences and benefited by an educational programme which introduces the Kodaly method for the first time.

3. 2. Musical exercises

In this paragraph we will present the melodic, rhythmic and harmonic elements of the exercises, including some musical characteristics, associated with Greek demotic music. They will be analysed so as to clarify if the recognition or not of some of these demotic elements causes these errors, or if it is related to the "Cognitive conflict"⁷ of our students (associated, maybe, with the "Adjustment Phenomenon"⁸ (Frances, 1984: 52-55) to the Western-European culture).

Interval values above the staff:

System 1 (bars 1-2): +3+ -2+ -2+ -2- -2+ -2- -2- +2- +6- +3+ -2+ -2+ -2- -2+ -2+ +2+ +2+ +6-

System 2 (bars 3-4): -5I- -2- -2+ -2+ +6+ -6+ -2- +6- -2+ -2- -2+ +2+ -3+ +2+ +2+ +4I+ +2+ -3- +2- 0

System 3 (bars 5-6): -7- +2- +2+ -5D- +7D+ -2- 0 -3+ -2- -2+

Chord symbols below the staff:

System 1: mi:I I V I SOL:IV V7 I VI

System 2: mi:VI V7 I V SOL:I IV V I mi:V I

System 3: II IV V V I I

Figure A: The tonic exercise

The exercise of tonic music (Figure A) is written in e minor, in 6/8 rhythm and in moderate speed execution (*tempo moderato*). It contains 12 bars which are divided in 6 sections of 2 bars. It also contains a modulation to the relevant g minor in bars 3-4 and 7-8.

The specific exercise was chosen taking into consideration the level of studies and the age of the students as well as its melodic, rhythmic, and structural elements. As instruments for the recognition and comparison of the errors is the evidence which came about from their interviews, concerning the most difficult recognisable intervals and rhythmic values.

Therefore, the melodic line contains the intervals of great ascent and small descent of the seventh, the clear and reduced descent of the fifth, the clear ascent of the fourth, the great ascent/descent and the small descent of the third which are all possibly responsible for the difficulties the children face. Several rhythmic elements can cause some insecurity concerning their recognition and performance, such as the 6/8 rhythm, the rhythmic phenomenon of the syncopation (bars 10 and 12) and also the pause of the eight and last bar.

The demotic song (Figure B) exercise is a long one which is called "Thalassaki" (Sea) which derives from the musical tradition of the Dodecanese, and more specifically the island of Kalymnos,

written is soft D and based on the first plagal mode B-C-D-E-F major-G-A-B minor-C-D. This way has similarities with D minor. We also observe that small groups of notes create small concurring motives (i.e. the motive G-A-G repeats itself three times in bars 1, 3, 6), the absence of the leading note and the use of alien notes. It's a "Kalamatiano"⁹ dance in seven rhythm (7/8) (**ta ta ta, ta, ta, ta, ta**)¹⁰ and with modest speed ("moderato").

Figure B: The demotic exercise

The exercise contains 10 bars and is divided into five sections of two bars. Its harmonic structure does not present special difficulties. The melodic line contains intervals of clear ascent of the fourth, the small ascent/descent of the third and small ascent of the sixth, which probably cause some doubts among the children. The rhythmic elements, which can cause concern to the children as to their recognition and performance, are the notes which are placed in the first timing (dotted quarter notes) and are linked to those (dotted eighth and quarter notes) in the second timing, as well as the eccentric character of the rhythm itself.

Taking into consideration, on the one hand, the instructions and indications of two musicologists and the two participating teachers and, on the other hand, the criteria behind the choice and structuring of the exercises, we can achieve the control and the comparison of the tonic exercises and modal music. These criteria will help us to compare the difficulty in recognising and coding of the

exercises¹¹ respectively, so as the level of difficulty to be compatible with the level of studies of the students, and the melodic, rhythmic and harmonic structure of all musical types.

We note that the exercise of the tonic music is, objectively, more difficult (compared to that of the Greek modal and demotic music) if we take into consideration that the level of knowledge of the students is quite high in the learning of tonic Western-European music, the rules of which the students are taught, and the modal Greek demotic music, which the students are not used to recognising or performing.

According to the above, the exercise of Greek modal demotic music¹² seems to be simple. It is probable, however, not to say certain, that although the level of difficulty is similar, taking into account, the errors of the Greek modal demotic music will be considerably more compared to that of the Western-European tonic music. From the procedure of coding the two exercises a variety of comparable types of errors will emerge.

4. Description and classification of errors

The students' answers (during the interview) are spontaneous and instinctive and reflect their personal method for the solution of the exercise. J.-P. Astolfi (Astolfi, 1997: 48), linking his ideas with Piaget, (Piaget, 1961: 302), considers that the hindrances in perception and understanding, as far as the coding of the melody, rhythmic and harmonic line is concerned, derive from the mental depiction of the structural elements of the exercise. Concerning the teacher and his teaching, the error could constitute a useful tool, the same applying for the student and his learning strategies. The description, the categorizing and analysis of the errors, under specific circumstances and exercises, allows us to diagnose the evolution of learning and create later on his psychological profile, as is determined by J. Piaget (Piaget, 1976: 55), L. Vygotsky (Vygotsky, 1985: 40). Thus we realized two different qualitative and quantitative descriptions of melody-rhythmic errors. The first description focused on melodic (Sinclair, 1988: 129) (intervals), rhythmic (bars, duration, intervals) and harmonic (Sinclair, 1988: 135, 145, 154) (degrees, cadences) elements. Moreover, it concerns each student individually first and then the whole group of students. The second one focuses on specifying the performances and their percentage during the two exercises and concerns the whole group of students.

4. 1. Results of research

4. 1. 1. Result Group I

The first group presents the results which concern the performance of each student concerning every category of structural elements (melodic, rhythmic and harmonic) of each exercise.

Errors in tonic music (Table 1)¹³

1. Twenty out of thirty-six students (55%) made errors in the melody of the music dictation of the exercise.

2. Thirty out of thirty-six students (83%) made errors in all the categories (intervals, degrees, cadences) in the melody of music dictation.

Students		Music Dictation - Melody			Music Dictation - Rhythm		
		Structural Elements			Structural Elements		
		47 Intervals	24 Degrees	6 Cadence	47 Intervals	24 Degrees	6 Cadence
1 st student	N ^o of errors	24/47	14/24	4/6	2/47	2/24	0/6
	% of errors	51%	58%	67%	4%	8%	0%
2 nd student	N ^o of errors	4/47	1/24	1/6	0/47	1/24	0/6
	% of errors	9%	4%	17%	0%	4%	0%
3 rd student	N ^o of errors	0/47	0/24	0/6	0/47	1/24	0/6
	% of errors	0%	0%	0%	0%	4%	0%
4 th student	N ^o of errors	19/47	9/24	4/6	7/47	4/24	1/6
	% of errors	40%	38%	67%	15%	17%	17%
....
36 th student	N ^o of errors	7/47	3/24	1/6	10/47	5/24	1/6
	% of errors	15%	13%	17%	21%	21%	17%

Table 1: Errors from the exercises of tonic music (sample)

The fact that the majority of students makes different types of errors, allows us to assume that, on the one hand the melodic and harmonic elements of the exercise cause difficulties in the procedure of recognition and coding in music dictation and, on the other hand,

their personal desires and motives, their level of education or generally any other aspect linked to the psychological profile are put to the test during this procedure.

3. Twenty-one out of thirty-six students (55%) make a small number of rhythmic errors, in contrast to the rest who, apart from the fact that they make a large number of errors, these are observed in the same rhythmic sections.

The fact that the majority of students makes more or less the same type of errors (which sometime appear in marginally small percentages) allows us to assume that the specific rhythmic elements of the exercise cause difficulties in the realization of the music dictation of tonic music (exercise-rhythm- musical style). It must be noted that the exercise is characterized by the rhythm of (6/8) and by complicated¹⁴ rhythmic values.

Conclusively, we would say that the students make more errors in the coding of the melody rather than the coding of the rhythm of musical dictation. This final conclusion could mean that the processing of the melodic elements causes more difficulties to the students than that of the rhythmic during the tonic exercise (exercise: melody/rhythm).

Errors in demotic music (Table 2)¹⁵

1. Twenty-nine out of thirty-six students (80%) made errors in the melody of music dictation, of which one third of the students had larger negative percentage than that of the average results.

2. Thirty out of thirty-six students (83%) made errors in the rhythm of music dictation, which also throws doubts upon the rhythmic structure of this type of the exercise (rhythm, musical style). One of the characteristic rhythmic elements which could cause errors is the constant presence of the representative rhythmic motives of the Greek Demotic music and the fact that our students are not familiar with their encoding.

We note that many of the students' performances deviate significantly from each other, in other words either they make many or minimal errors.

As for the second establishment of the controversial performances, both the melodic and harmonic structure of this type of exercise is placed in doubt. Generally the negative results of the performances in this specific exercise may be attributed to the continuous presence of the alien notes.

Students		Music Dictation - Melody			Music Dictation - Rhythm		
		Structural Elements			Structural Elements		
		52 Intervals	28 Degrees	5 Cadence	52 Intervals	28 Degrees	5 Cadence
1 st student	Nº of errors	44/52	24/28	3/5	14/52	8/28	2/5
	% of errors	85%	86%	60%	27%	28%	40%
2 nd student	Nº of errors	0/52	0/28	0/5	8/52	4/28	2/5
	% of errors	0%	0%	0%	15%	14%	40%
3 rd student	Nº of errors	0/52	0/28	0/5	0/52	0/28	0/5
	% of errors	0%	0%	0%	0%	0%	0%
4 th student	Nº of errors	44/52	22/28	3/5	26/52	13/28	4/5
	% of errors	85%	79%	60%	50%	45%	80%
....
36 th student	Nº of errors	4/52	3/28	2/5	9/52	3/28	1/5
	% of errors	8%	11%	40%	17%	10%	20%

Table 2: Errors from the demotic (modal) music exercises (sample)

4. 1. 2. Result Group II

The second group presents the results which concern the performance of the whole sample towards each category of structural elements (melodic, rhythmic and harmonic) of every exercise.

Errors in tonic and demotic music (table 3)

In Table 3¹⁶ we present the structural elements of both exercises in which students made the most errors and to be more specific: notes (C, D, E), intervals (+3⁺, -2⁺, +4^C), rhythmic values (fourth, eighth), degrees (Ist, IInd, IVth), cadences (Vth, Ist) and number of bars. It refers to the types of those structural elements which cause many problems compared to others during the dictée procedure (music dictation). We not only pinpoint which bars of the exercise they are at but also to which melodic and rhythmic frame they belong to.

Errors in tonic music

The tonic exercise is quite difficult, always considering the level of studies of the students and the level of difficulty of the demotic exercise. At this point we will summarize the observations and findings which emerge from Table 3:

- This exercise contains four modulations in E minor and the relevant G major which are presented in the bars 2-3, 4-5, 6-7 and 8-9. The students make the specific errors especially in the category of intervals in the first (bars 2-3), third (bars 6-7) and fourth (bars 8-9) modulations, while in the degree category and cadence category, they make the same errors during the first modulation (bars 2-3) in the melody of music dictation.
- The presence of the leading note (D major) of the E minor scale is expected to cause difficulties because the students hear it not only in the medium but also in the higher area of the piano. The students make these specific errors in the category of intervals during the second appearance of the leading note (bar 9) and in all the categories of structural elements (i.e. the intervals, degrees and cadences) during its second (bar 9) and its third (bar 11) appearance. We also note that not only the leading note but also its solution are not usually observed in demotic music.
- The intervals of $+7^+$ and -7^- , of -5^C , $+4^C$, $+3^+$, -3^+ and -3^- were also expected to cause difficulties to the students. The difficulty of this exercise was a conscious choice because it contains these specific types of difficult intervals. In this way we balance the level of difficulty between this exercise and the next of the demotic music which the students are neither used to recognizing nor examining. The majority of students make errors in -7^- , -5^R and -3^+ during the music dictation.
- The rhythmic elements, which could cause errors, are mainly the rhythm 6/8, the syncopation (bars 10 and 12) and the interval of the 8th (last bar). The majority of the students make errors in bars 10 and 12.

Errors in demotic music

By examining Table 2¹⁷, the following observations and findings about the melody-rhythmic errors in the demotic music exercise, emerge:

- There are groups of notes which create small, repeated melodic motives (for example, the motive G-A-G is repeated three times in the bars 1, 3, 6). When the above motive appears in the IInd degree, (which is part of a perfect complex cadence) the

students make errors at a percentage of 33% (12/33 students) whereas in the IVth degree at a percentage of 50% (20/36) of the students.

- The fact that the leading note and its solution do not appear in this exercise as in the previous, does not seem to create a recognition problem.

Number of students who made errors	Intervals	Rhythmic values	Degrees	Cadence	Bars
20/36 students	+4 ^J (D-G)	Quarter-dotted quarter notes	I-IV		5-6
	+6 [̂] (D-B)	Dotted eighth-tenth	I-I		8
	-3 [̂] (G-E)	Sixteenth-eighth	II-V	perfect (V-I-I)	9

Table 3: Common errors per category (tonic and demotic music exercises)

- The frequent appearance of the alien notes in the music dictation (in the form of passing notes, embroideries, appoggiaturas or escape tones) makes it harder for students so they make errors. The students made errors at a percentage which reaches 50% (17/36 students).
- The melodic line includes bars +4^C, +3[̂], +6[̂] and -3[̂], also cause errors. The majority of the students at a percentage of 77% (28/36 students) make errors in bars +4^C and -3[̂] of music dictation.
- The rhythmic values which cause problems to the students focus mainly: on the encoding of the unusual bar of 7/8, on the dotted quarter notes, placed in the first time of the bar, connected with a coupling with dotted quarter or eighth notes of the second time in the bars 2, 4 and 8. The students at a percentage of 50% (19/36 students) make errors in bar 8, the melody and the rhythm and the majority of students at a percentage which reaches 80% (29/36 students) in bar 2 in rhythm of music dictation.

4. 1. 3. Comparison of errors in tonic and demotic music

Based on the up to now analysis, two categories of errors emerge. We will compare them in order to find which category causes more errors and difficulties to the students. The first category concerns the melody-rhythmic elements of each exercise, and the second concerns the different form and styles of the exercise (tonic and demotic). Such a categorization is to identify:

- common errors in different structural musical style
- common errors in the same or different music style

Common errors, in the first category (melodic and rhythmic):

- The note A¹⁸, part of the interval of +2⁺ (G – A), the degrees IInd - IVth and the rhythmic values of the eighth-dotted quarter notes (bar 10)
- the note B part of the interval of 0¹⁹ (B-B), the degrees of the IVth - Ist, the perfect cadence (Vth - Ist) and the rhythmic values of the dotted quarter notes connected with the eighth (bar 12) to the melody and the rhythm of music dictation of the tonic music exercise. The encoding of rhythmic values may be that mental function which sparks off these types of errors.
- The note D, part of the interval 0 (D-D), the Ist - Ist degrees and the rhythmic values of the dotted quarter notes connected with dotted eighth (bar 8) the melody and the rhythm of music dictation of the demotic music exercise.

Common errors, in the second category (melodic and rhythmic):

- The intervals of 0 (joined notes with coupling). The students cannot manage to define exactly the rhythmic values and the number of respective rhythmic pulses.
- The major degrees (Ist, IVth, Vth). The students have not yet developed a complete harmonic consciousness at this specific time. This explains the fact that the encoding of quite a few notes, which are part of a cadence, causes errors.
- The rhythmic phenomenon of syncopation. For example, a dotted quarter connected with a coupling with an eighth. This phenomenon is observed not only in the tonic music exercise but also in the demotic music exercise.

4. 1. 4. Result Group III

The third group presents the results which relate to the performance of the whole sample towards the bulk of the categories of structural elements (melodic, rhythmic and harmonic) of each exercise.

Errors in tonic and demotic music

Chart 1 presents the performance of the whole of the students concerning the bulk of the categories of structural elements of each exercise. These results derive from the results of the two previous groups.

We can, in this way, realize which type of the exercise and which category of structural elements produces most errors.

It seems therefore that the melodic elements are more difficult to be recognized in relation to the rhythmic ones, implying that the melody and the harmonic structure of the exercises cause the encoding errors. Taking into consideration, the already shaped and verified, from the results, assumptions, which refer to the psychological dimensions of the research, we assume that it is more difficult to recognize and encode the melodic elements of the exercises than those of the rhythmic.

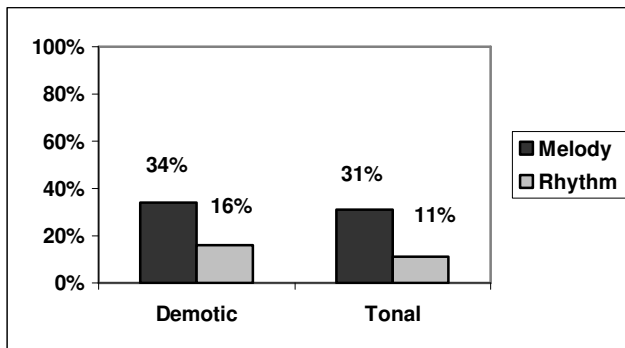


Chart 1: Percentage of errors in melody & rhythm²⁰

The above supposition brings to light that:

1. There is possible confusion between the mental representation of the melodic line of the exercise – the mental inter-transferring of specific information – and the processes such as the auditioning, writing and generally producing the melody of the exercises, and

2. The difficult intervals do not make the process of recognizing and encoding in any type of exercise (tonic and model) easier.

Also, as seen from chart 1, the percentage of errors in the music melody recognition is almost the same, not only in model music but also in tonic music. This partially confirms the socio-cultural dimension of our research, which refers to the “cognitive conflict”. The term “Cognitive conflict”, refers to the difficulty of students to understand and perform different musical styles as they try to recognize them (tonic and model), in the same way, following the rules of harmony of tonic Western-European music. The reason is that they are mostly educated at this kind of recognition and encoding although they are experienced in tropical music²¹ on a daily

basis. We therefore assume that musical education plays a significant role in the recognition and encoding tonic music exercises, while the cultural experience reinforces the acoustic procedure in solving exercises of model music.

Conclusion

Taking into consideration the two hypotheses which were presented and analyzed in a theoretical background, we can assume the following:

According to the first hypothesis (**Hypothesis 1**) the systematic study of a type of music outweighs the music culture, causing supplementary difficulties to the students not only in consolidating and performing (the “Cognitive conflict” phenomenon) but also in the mental functions of recognizing and encoding of exercises. Specifically, the effort to understand a tonic melody leads students to a momentous knowledge, a result of the systematic study of the Western-European music system (cognitive domain). A similar attempt to recognize a demotic model melody, is affected to a large extent, by the cultural background as a result of musical culture of a nation and their daily conscious and unconscious acoustic experiences (emotional domain)²².

The first part of this hypothesis is not verified from the respective error percentages which are observed during the execution of the exercises (melody of music dictation) of tonic and demotic music. On the contrary, the second part of the same hypothesis seems to be verified by the same percentage of errors. This fact is explicable partially, because the proposed exercises from their musical style, present similar melodic and rhythmic characteristics, which cause errors, proving wrong the fact that the phenomenon of adjustment to Western-European culture is what finally causes it. Moreover the transferring of each exercise to the staff cannot be done but only according to the rules of tonic harmony, since these are the only ones they have been taught.

The second part of this hypothesis is confirmed also by the similarity of the structural elements (table 4) which cause difficulty and errors to both proposed exercises. This could explain the reasons why an easy and familiar melody could cause similar and comparative performances with another one, more difficult, as students try to interpret similar structural elements.

According to the second hypothesis (**Hypothesis 2**) the mental processes and procedures which are activated during the

recognition and encoding of the melodic elements of an exercise in music dictation, contain significant hurdles in performing it whether or not it belongs to tonic music (melody/rhythm).

According to the overall results of the research however, the melody and the rhythm of the exercise of demotic music and the melody of the exercise of tonic music in music dictation, cause equal problems to the students in all the categories of structural elements (intervals, degrees, cadences). We also conclude that the lack of experience and education of the students in these types of the exercises are necessary requirements so as to overcome the obstacles they face during the encoding of any exercise. However, Greek students do not practice adequately in Greek model music and mainly count on their cultural instinct (music heritage). The difficulties they face in performing these types of exercises may be attributed to the phenomenon of attempting to adjust students to the Western-European music culture.

Musical style	Bar	Alien notes	Intervals	Tonality
Tonic	6/8	passing notes appoggiaturas delay	$+6^-$, -5^K , $+6^+$, $+4^K$, -5^H , $+7^H$	Modifications E-G-E-G-E
Demotic- model	7/8	passing notes, embroideries, appoggiaturas escape tone inlays	$+6^-$, $+4^K$	Soft way of D without its presence adduction

Table 4: *Vital*²³ errors in tonic and demotic music (melody/rhythm) in music dictation.

The students perceive a melody through the prism of their emotional references and their experiences in tonic and model music, interwoven with their level of studies and always according to their musical and cultural traditions. The same method is not always followed necessarily by all students. The execution of their errors which occur during both exercises, tonic and model music, show us that the procedure of understanding the structural elements is different in tonic to model music. In both types of exercises, what is required is the systematic effort and high level of studies of the students towards melody, rhythm and harmony.

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¹ *Estudio comparativo de las performances de adolescentes griegas en dictado*

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³ We borrowed the term from M. Mauss (1989: 281-310), *apud* D. K. Naugle (2002: 378).

⁴ For example, some students realise the melodic or rhythmic modulation of the proposed melody.

⁵ We did not use a video-camera because we did not want to disturb the flow of the lessons and the students' concentration, since the hours we were present at the lessons were many.

⁶ A lesson which was part of the compulsory cycle of musical studies and oriented mainly towards tonic Western-European music.

⁷ It concerns a mentally produced disorder which occurs during group learning activity. It's caused by an inconsistency of mental images of cognitive, cultural and human nature, which are activated during the performing, recognition and coding tonic and modal music exercises. The term "Cognitive conflict" is used in the PhD thesis which includes the whole of the research (Micha, 2009, 7, 10, 34, 134, 202, 238, 239, 252, 232).

⁸ It refers to the Adjustment of an individual to a new music culture.

⁹ Very popular demotic dance (also called «isos» or «syrtos») with very ancient Greek roots.

¹⁰ The word for word recording of the rhythmic values was conducted according to the rules of the Kodaly method.

¹¹ This research was utilized with complete exercises and not small melodic sections so it can constitute part of a real educational act. The numbered presentation of the intervals of the exercises were proposed by Jean-Mare Chouvel, professor in Paris Sorbonne IV University.

¹² The transfer of Greek model music on the staff was necessary so we can compare, on the one hand, the structural elements of the exercises (Greek modal and Western-European tonic music) which cause errors, and, on the other hand, the students performance. The small intervals of Byzantine music could not be transferred on the staff and for this reason, we did not include a similar exercise in the present research.

¹³ A part of the comparative table is presented so as to show the way the errors are recorded.

¹⁴ We characterize these rhythmic values as complex, considering the students' level of studies during the academic year.

¹⁵ Part of the specific table is presented so as to show the recording of the errors.

¹⁶ Descriptive table of Group II, pg.11. Similar tables of rhythmic errors. In both exercises, are found in the annex of Micha, 2009: 692-707.

¹⁷ Descriptive table of Result Group II.

¹⁸ The melodic, rhythmic or harmonic elements of the text which were executed wrongly by the students are underlined in the text.

¹⁹ We are referring to the same note which extends from one bar to another attached to a coupling.

²⁰ Similar charts, which concern interval, degrees and descents in the annex of Micha, 2009: 709-717.

²¹ The studies focus mainly to tonic Western-European music.

²² We are referring to the socio-cultural dimension of the theoretical background.

²³ Vital or fatal is what we named the errors which cause a number of other errors.