STYLE PROCESSING

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ABSTRACT

The musical style processing is difficult to investigate due to different aspects: complex cognitive strategies that are involved in the elaboration of musical information, the construction of experimental procedures that are able to study music as aesthetic phenomenon, and the ambiguity of the elements that define the term 'style' in musicology.

In their recent work *Le regole della musica*, Baroni-Dalmonte-Jacoboni have analysed a corpus of arias written by the baroque composer Legrenzi; on the basis of their results they have constructed a system of rules that, supposedly, describes the composer's style. In order to verify the validity of their system, the researchers have implemented the Legre software that seems capable of 'composing' arias in the same style.

The objective of the present study is to verify stylistic validity of Legre's output by using methods adopted in cognitive psychology. One of the fundamental question is to determine whether the methods of generative grammar can describe and recreate by computer the style of Legrenzi's aria. Furthermore, concerning the musicological aspect, the data discusse the essence of the concept style.

1. INTRODUCTION

In the last decades, musicology has formulated a wide range of methodologies to capture and explain the notion of musical style, but up to now the examples still reveal the presence of an 'enigma' in their description. We are certainly able to recognize the style of a composer or an historical period; nevertheless we are not able formally to specify the guidelines of our attributing processes and to give a complete explanation of those peculiar features that characterize the listened or analysed music. According to Gardner, style perception is governed by a "cognitive unconsciousness", by a "procedural knowledge" that the psychology can try to reveal. The Legre software has a heuristic function: it permits us to evaluate the possibility of defining a musical style by means of a formal grammar and it gives us an "ecological" material. By validating the machine's 'compositions' through differential listening tasks carried out by subjects with different musical background, it's possible to compare the resultant data with a 'traditional' analytical approach to the score. The comparison between finding data and score analysis allows us to make predictions about the differences or similarities between listening and analysing perception, to study the influence of musical background in the discrimination processes and to infer some elements for a theory of style perception. In comparison with the large number of psychological experiments on single musical

parameters, the research on style perception is very limited because of the complexity of phenomenon style. Style implies all the musical parameters and their sophisticated interactions that it is not possible totally to explain.

2. EXPERIMENT 1

The aim is to assess whether Legre is a cognitively valid grammar of Legrenzi. The experiment consists of two phases. In the first phase 28 italian musicians, expert in baroque music, listen to 8 arias of Legrenzi, 4 being repeated two times. The 12 arias are played in a random order. The task is to indicate whether each aria has been already heard or not. In the second test phase the sample of participants is split into two groups of 14. Group A listens to 10 pairs of arias. Each pair presents a single text composed both Legre and Legrenzi. The task is to indicate which aria of the pair is by the composer who has written the 12 previous arias. Group B has the same task and material but the participants now listen to the 20 arias played in a random order. Participants have also to indicate the confidence of their response on a 7 point-scale.

2.1. Methods

The participants listen to music in informal context via walkman or CD player. In order to avoid the influence of performance on the discrimination task, the arias are performed by piano and soprano without a particular baroque style performing. The experimental material is presented in different orders.

2.2. Results

Analysis per subjects. Performances is above chance in group A (78.46%) of correct response as in group B (59.28%), but the performance of group A is better than group B. In the group B confusion between Legrenzi and Legre is as numerous (19.64%) than confusion between Legre and Legrenzi (19.28%).

Analysis per aria. In group A, the pair containing the tune "Ah ch'indarno" is the only pair to be poorly performed (1% correct). In group B, the tunes by Legrenzi which are the most difficult to identify as Legrenzi's are "Ah ch'indarno" (9.17%) and other two arias; four tunes by Legre are also poorly performed.

2.3. Discussion

The present experiment is designated to assess whether Legre simulates the style of Legrenzi's arias. Results of the study demonstrates that italian expert baroque musicians manage to differentiate both 'composers' when arias are presented by pairs,

but they encounter more difficulties to distinguish the composers when arias are presented in isolation. Pair presentation results in lower charge of working memory and permits to enable participants to focus on more detailed stylistic information

3. EXPERIMENT 2

Assess validity of the grammar with a broader group of musically expert listeners and no-musicians. 15 Italian musicians (not expert in baroque music) and 15 no-musicians take part to the same experiment 1. They listen to 8 arias of Legrenzi, 4 being repeated two times. The 12 arias are played at random; the task is to indicate whether each aria has been already heard or not. In the second phase they listen to 10 pairs of arias; each pair consist of a single test composed both Legre and Legrenzi. The task is to indicate which aria of the pair is from the composer who has written the 12 previous arias. Participants have also to indicate the confidence of their response on a 7 point-scale.

3.1. Methods

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3.2. Results

Analysis per subjects. The performance of musicians is better (63.52%) than no-musicians (54.20%).

3.3. Discussion

Experiment 2 shows the influence of the musical competence in the process of style discrimination. Results demonstrate that both musicians and no-musicians, at different degrees, are able to differentiate Legre from Legrenzi.
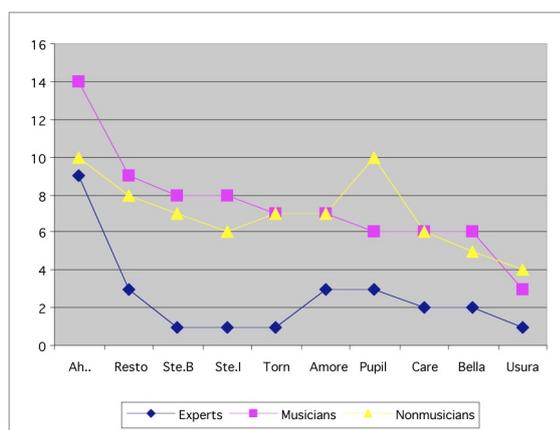
4. CONCLUSION

A comparison among baroque expert musicians, musicians and no-musicians reveals a difference in the ability of discrimination task.

The graphic shows the responses of the subjects correlated to each tune of the pair. According to the theory of implicit learning all the participants acquire a knowledge of Legrenzi's style (during the first phase of the experiment) that they apply to recognize the composer in the second phase. But again current assumption of psychological theories of music perception, the musical background influences the results of the participants. We're currently testing the same material in a task of score analysis to investigate on a further modality of information processing. A comparison among the three modalities of reception – listening and analysing task, and 'traditional' analysis of the score will be discuss to emphasize the several types of musical features reported by the subjects in the different experimental contexts. The interaction between these data and theoretic reflection contribute to the explication of the question of style.

5. REFERENCES

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