

Interpretative Criterion and Understanding of the Texture Hierarchy.

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Interpretative Criterion and Understanding of the Textural Hierarchy

A Production-study about some internal representations

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Introduction

When the performer translates a score into a sound musical experience, he applies an action system which is his Interpretative Criterion (IC). This set often shows *deviations* from the written score. Many studies (e.g. Sundberg, Friberg & Frydén, 1991; Shaffer & Todd, 1987, Gabrielsson, 1987) reveal that these *deviations* are expressive, and usually rule-governed. Thus, the expression can be related to the musical structure (Clarke, 1985; Shaffer, 1995). Furthermore the rule-based system would have some correlates in the perceptual input and this would allow the listener to interpret the *deviations* and to rebuild the performer's expressive intention (Palmer, 1989), founding codes to build the communication of the musical idea between both of them (Clarke, 1985). Through this double code system, the musical structure is revealed to the listener.

The message can communicate both structural features -as meter (Sloboda, 1983), phrasing (Fryberg, Sundberg & Frydén, 1987), rhythm' regularity (Clarke & Baker-Short, 1987)- and emotional characters (Gabrielsson & Lindström, 1995; Gabrielsson & Juslin, 1996). Thus, the performer mediates in the listener's internal construction of very complex factor. May be the more complex the attribute to communicate is, the more important the role of performance will be the rol played by the performance will be.

The work itself, does not reveal to the listener all of its own expressive content without the performer's mediation. The high level of responsibility assumed from this forces the performer to insure the IC *Relevance* and *Efficacy*. The systematic analysis of the piece (Berry, 1989) and the study of the time and author stylistic characteristics allow the performer to notice the logic of the musical content in order to (there seems to be a general agreement on this point) reveal to the listener as clear as possible. A IC is *relevant* when its logic fits into the logic of the structure and it is *effective* if it can communicate the performer's expressive intentions. However, when we think about more sophisticated aesthetic choices, *Relevance* and *Efficacy* are dialectically related. As a result, an effective IC can be irrelevant in that sense because it is either exaggerated, obvious, or banal.

The texture is a high complexity organisational factor. The interpreter finds hierarchies among the components of the structural organisation through the analysis of the work (e.g. the distinctness by peculiar qualities of a figure-background relationship) in order to guarantee the IC *relevance*. The performer can operate on the perceptual hierarchy of these lines by a number of actions, which being ruled-governed, would be unconscious, as the chordal asynchrony (Palmer, 1989) - insuring the IC *efficacy*. Nevertheless an exaggerated performance, even *effective*, is not *relevant*.

The skill to focus a melodic line of the texture is related to the Gestalt principles (Sloboda, 1985). When complex textures are analysed, this principles can apply not only to the focal line configuration but also to all the components concurrence with their particular dependence-interdependence relationships (Berry, 1987). Thus, this skill would be governed by the features of the musical structure. However, real life music is much more complex: the textural structures are often either configurations that are far from gestalt models or different

conflicting concurrent dispositions, since the interdependence weaving relationships among the textural components is usually very complex. Consequently, the textural organisation itself often prevents the listeners from representing the hierarchy. In those cases, the IC would be crucial (Cook, 1990).

Furthermore, in the analysis of the representation of the textural organisation, two different situations should be distinguished: the first one takes place as a result of the active search of the given configuration; and the second one occurs as rising from the passive awareness of such configuration (Sloboda, 1985). That active search could be caused both by the previous knowledge, -not only of general musical background, but also of the particular piece-, and by some kind of task prior to the listening, which could *catalyse* said task.

This study is a part of a research which explores the nature of the internal representation of the texture related to the IC by studying the listeners' skill to isolate the *figure* from the background while listening to complex textures, in first listening contexts.

Previous Research

Four excerpts from nineteenth century piano repertoire were chosen according to a number of categories for the textural analysis. They were recorded by a pianist (ADR) in two versions: 1) making the melody perceptually salient according to his own analysis (version A), and 2) deadpan performance (version B). Records were analysed by 5 experts - professors of the Faculty of Fine Arts, professional musicians who have acknowledged background as either choir conductor, orchestra conductor or music educators, all of them are pianists and have acknowledged expertise in aural skills and assessment of instrumental performances -. They chose the best version for the experiment. The agreement among them and the pianist intention was: 83 % for the example 1, and 100 % for the example 2.

In the first experiment (Shifres, in press) listeners had to answer: *Which is the version where the melody (figure) is clearer?* For the ex. 1, the 29% chose version A, 24% version B, and 47 % could not make a difference between them. For the ex. 2: 68% chose version A, 13% version B, and 19 % could not make a difference. The second study (Shifres, 1996) examined the efficacy of this differentiation, considering a performance as effective when it enables listener to build the expected hierarchical internal representation. Listeners had to answer: *Could you identify this melody (figure) while you were listening to?* Answers were classified in 10 ordered categories showed medians of 10 and 9 (NS) to versions A and B respectively of the ex. 1 and 9 and 3 ($p < .001$).

Method

The present study relates more direct information entailed to the internal representation of the textural hierarchy. For this a production test was made using an adaptation of the *Aloud Thinking* technique. Here, subjects give a "quick description" (as a response in musical terms) of the process that they are using as they are doing the experimental activity. It is assumed that a careful exam of these responses allows us to obtain some access to the subject' thinking pattern, since "the more interesting features of musical understanding may be expressible only in a musical medium" (Clarke, 1985. p.209). Records of a version (A or B) of each example were presented twice, separated by the same time span as the example. Subjects had to listen to the first one focusing on the main melody (figure) and had to sing (or whistle) it, over the record, while they were listening to the second one. They were asked to show this voice ("thinking aloud") as they were listening to it; and *to give as much information as possible*.

Responses were recorded in order to their subsequent analysis. Each test took 3 minutes. No subjects declared to know the heard excerpts.

Selected musical stimuli were the same as the previous tests (see Previous Research). Subjects were sorted in 4 groups in order to reduce the amount of listenings and to shorten the test length - in order to avoid tiredness and have a positive attitude to the task throughout the test. Each group listened to the version A of two examples and the versions B of the other. Common version were taken as a pre-test to measure the reliability for the responses to the other versions. (Responses given to common versions showed in every case no significant differences). 195 applicants for admission at the Faculty of Fine Arts of the UNLP (1996), sorted in two categories according to their previous musical experience were taken as subjects for this test.

Results

In order to avoid a wrong interpretation of data, only responses that can show some property of the study problem must be taken into consideration: if the subject does not do any performance or if he carries out an "undesciphable" performance, one can not consider that response as an internal representation indicator, but simply as inability to solve the task. However, it is possible to take some information from a "real" performance of the subject. Thereupon, not only the responses quality -in terms of metric-rhythmic configuration and melodic-tonal organisation- were taken into account, but also other attributes of the performance -such as articulation, phrasing, dynamics, all of them revealing coherence and fullness of meaningful musical units - were analysed.

An open observational system of data record and storage was used: every response was listened to and a verbal description of each was done. Those descriptions were classified in a seven category system. Responses were analysed by trained people. In order to reach the maximum agreement, inter-ratters discussion sessions were held when necessary. The system was improved by rewriting some of the categories according to those analysis. Then, responses were recategorized according to this adjustment.

The isolated categories were: (The response shows....)

1. The main melodic line (figure).
2. Some excerpts of the main melodic line (figure), which form meaningful units.
3. The main melodic line (figure) - either complete or incomplete - with some added sounds belonging to other textural components (background).
4. Another textural line (background) is noticed in the response.
5. The complete basic (minimum) rhythmic beat (background) with pitches of the main melodic line (figure).
6. No identifiable (clear) line (unconnected pitches, voice leading non-existent, non explicit contramelody, a line tonal and/or rhythmically non configured, etc.).
7. Nothing (the subject loses immediately the continuity, he tries but does not emit any sound, he only emits very isolated sounds at the excerpt boundaries, etc.).

Findings from two of the test examples are reported here:

Example 1: Schumann's *Noveletta No. 6*



Example 2: Schumann's *In der Nacht op. 12 No. 5*



No response of these examples was classified into the fourth category. Therefore, observed frequencies (in percentage) of the other categories are introduced, in order to compare data arising from both versions. (Table 1)

Example	1		2	
Version	A	B	A	B
category 1	41	44	52	6
category 2	8	15	13	5
category 3	33	23	27	41
category 5	5	5	1	11
category 6	7	4	0	26
category 7	7	9	7	11
χ^2	5,32 NS		75 $p < .001$	

Table 1

Example	1		2	
Version	A	B	A	B
analysable	86	87	93	63
non analysable	13	13	7	37
χ^2	0.00 NS		22.8 $p < .001$	

Table 2

Responses belonging to the sixth and the seventh categories can not reveal any attribute of internal representation, as said above, since they do not show identifiable features. As a result, all of the responses could be sorted in two groups: responses can be studied (analysable) and responses can not be studied (non analysable). -Table 2.

No differences among subjects with a different level of previous musical experience were found.

Discussion

The used procedure enabled to reduce memory, tests design and chance incidence compared with other tests. Moreover, subjects' commitment was higher (this topic is crucial in our work environment). Each response can be analysed in musical terms in order to deepen the study of the representation nature, which is an important advantage from the other. However, it shows some disadvantages: 1) Musical expertise degree involved in the response, knowing that

sample of the internal representation is intervened by the task difficulty itself when it engages a performance activity; 2) Difficulty for objective assessment of the responses; 3) Limit to search non analysable responses. Nevertheless, findings for example 2 could be talked about IC' incidence in the subject' song response organisation. As these results are highly coherent with the previous tests' findings, which did not have these objections, it is useful to interpret all of the data together.

The percentage of responses classified into the category 1, would reveal that, in the example 1, the main melody is focus regardless of the performer's intention, while the performer's mediation rises as decisive to the example 2. This appears to be against intuition, since a non sophisticate description would predict the opposite: the melody is the highest level, being the other features very similar. Melody description, in terms of the Gestalt principles, can not give a reason for this difference by itself either. However, there are some characteristics that can make great differences between both of examples: 1) the tempo would contribute to configure the melody (Shaffer, 1995); 2) Rhythmic relationship between figure and background (1:4 -♪/♪- and 1:2 -♪/♪- in example; and 1:8 -♪/♪- and 1:4 -♪/♪- in the ex. 2); 3) accompaniment directionality that shows *gestures forward the melody*, in the second example. 4) The bass line, in the second example is reinforcing the upbeat of each time. Thus, the *conflict* is noticeable in the many textural factors concurrence. These can interact either reinforcing or neutralising their reciprocal effects and, therefore demanding a more or less emphatic performance.

High responses percentage for the example 2B category 3 could be understood by the same explanation. Most responses classified in this category just added that background upbeat to the figure. Consequently the necessity of deepening the study by a more detailed description in musical terms of each category surfaces. Besides, this fact gives notice about the specific character of the used classificatory system for these examples.

It is possible to think that the IC for both version were not different, being the version B non deadpan. The IC was evaluated in three levels: the pianist, who was evaluated by himself in the same way as he did for the example 2; the panel, who did not reach a complete agreement while evaluating the two versions even though it could find differences between both of them; and the listeners. "(T)he temporal nature of performance creates priorities different from those of the analyst, for whom time becomes converted into space - or at least loses its dynamics and irreversible quality" (Clarke, 1995 p. 25). In this way, the performer approaches the analyst's view, since the multiple repetitions of the excerpt during the study process and the non perceptual knowledge of the configuration decreases these qualities when he is making the internal representation of his own performance. May be, this is why his representation is so different from the passive listener's. According to this, the real temporal nature of music would be only experienced by the listener.

Why does the difference among the three levels take place with only one example? Probably, this difference could be explained by the description of the textural features again. These characteristics would influence the way to organise the structural properties (Clarke, 1985. p. 210) and to carry it out through his IC.

We face again with the fact that the traditional analysis models of the texture do not explain the phenomena involving the structure. A satisfactory model must take into account the temporal nature of this communicational phenomenon, beyond simple local properties of the structure.

To ensure the IC relevance and efficacy demands an interpretation engaged not only with the analysis of the piece but also with the listener's representation. Therefore a descriptive theory of texture with the view to drawing interpretative actions must take into account of: 1) both its synchronic nature and its diachronic development; 2) dynamic and irreversible quality of the passive listening; 3) configurations of the textural components in the Gestalt terms; 4) the dependence/interdependence relationships among components; and 5) the incidence of the tonal and metric elements.

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