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# ART, EMOTION AND COGNITION: VYGOTSKIAN AND CURRENT APPROACHES TO MUSICAL INDUCTION AND CHANGES IN MOOD, AND COGNITIVE COMPLEXIZATION

José A. Adrián, Darío Páez y Javier Álvarez
Universidad del País Vasco

This study analyzes the first empiric data on the incidence of certain aesthetic elements on mood and on cognitive restructuralization. To this end, we have carried out experimental research which, based on the theory of Vygotski's about the role of Art (1925/1972), contemplates the possibility that stimuli, with positive and negative affective charges, provoke simultaneous activation of positive and negative emotions, producing a catharsis -in the sense of greater cognitive complexity. Our research was focused on the emotional and cognitive reactions to romantic music.

As has been proved by recent research, music can generate psychophysiological alterations in our organism: alterations in pulse, cardiac rhythm, breathing, blood pressure, etc. Besides the changes which are automatically produced in our ANS, some experiments have shown that music generates changes in mood, cognition and conduct (Kenealy, 1988; Martin, 1990).

In this work, results show partial support of some of Vygotski's ideas. This research is one of the first attempts to operate on an aesthetic element, such as music, in order to discover the composition and relevant elements of Art.

*Arte, emoción y cognición: aproximaciones vygotskianas y actuales en la inducción musical, los cambios en el estado de ánimo y la complejización cognitiva.* Este estudio analiza los primeros datos sobre la incidencia de ciertos elementos estéticos en el estado de ánimo y en la restructuración cognitiva. Para ello, hemos llevado a cabo una investigación experimental la cual, basada en la teoría de Vygotski sobre el papel del arte (1925/1972), contempla la posibilidad de que estímulos, con caraga afectiva negativa y positiva, provoquen una activación simultánea de emociones positivas y negativas, produciendo una catarsis -en el sentido de una mayor complejidad cognitiva- Nuestra investigación estuvo centrada en las reacciones emocionales y cognitivas con música romántica.

Como ha sido demostrado en recientes investigaciones, la música puede generar alteraciones psicofisiológicas en nuestro organismo: alteraciones del pulso, ritmo cardiaco, respiración, presión sangüínea, etc. Además de los cambios que son automáticamente producidos en nuestro SNA, algunos experimentos han mostrado que la música genera cambios en el estado de ánimo , en la cognición y en la conducta (Kenealy, 1988; Martin, 1990).

En este trabajo, los resultados muestran un apoyo parcial de algunas de las ideas de Vygotski. Esta investigación es uno de los primeros intentos de operar sobre un elemento estético como la música, para descubrir la composición y los elementos relevantes del arte.

Correspondencia: José Antonio Adrián
Facultad de Psicología
Universidad del País Vasco
Campus de Ibaeta
Avda. Tolosa, 70. 20009 San Sebastián. Spain

First of all, we would like to briefly explain Vygotski's main ideas on art, cognition and emotion.

Art is to Vygotsky a social technique of emotions, for him the social function of works of art is to provoke a cognitive and social evolution in people.

Vygotski's reflexions on art as a social instrument, as a semiotic structure that objetivizes and socializes emotions is, in our opinion, a highly important current issue. His idea that activation of contradictory expectations, scripts or schemes (complex and contradictory aspects of works of art) is a crucial element in aesthetic reaction, is shared by a series of current authors (Strongman, 1987).

Vygotski proposes in his earliest work (Psychology of Art), which was his Ph.D. dissertation of 1925, that works of art are a system of symbols, a type of semiotic mediators, which act as psychological tools transforming different natural impulses, such as basic emotions, into higher mental processes. Psychological tools retain, and differentiate what originally appears as an immediate adaptative reaction (Wertsch, 1988; Alvarez & Del Rio, 1991; Van der Veer & Valsiner, 1991). A sign or symbol helps to create a functional barrier between sensory and motor reactions.

Vygotski suggests the same idea for works of art: they transform basic emotional reactions into delayed and complex social emotions.

The main idea that Vygotski seeks to confirm, through the analysis of fable (in the sense of a short figurative narration having animal characters, a moral etc.), short tales and tragedy, is that the form of the story is in contradiction with its content. There are two opposing affective components in every work of art, form contradicts content. This semiotic mechanism is what allows us to retain, and make more complex, the basic emotional reaction next to a narrative.

The chapter about Shakespeare's Hamlet (see also Kozulin, 1990) allows Vygotski to show the contradiction existing not only between "Form" and "Content", but also inside "Content"-between character and behaviour for instance. Hamlet has a clear story-line, and in the original saga everything is also clear and comprehensible; the psychological reasons for the acts and their development are all clear. Hamlet's father is murdered by his uncle, Hamlet's mother being the accomplice.

At the end of the play Hamlet kills his father's murderer. However this scenario, or story of anger and revenge within the original saga, is not told in a lineal way in Shakespeare's tragedy. Even when he knows the truth about his father's murder, Hamlet does not kill his uncle immediately. The tragedy takes a convoluted path before reaching its outcome. There is a contradiction between story and discourse, between story and plot and between characters and story. Thoughtful Prince Hamlet is strong-willed and is quite capable of killing anybody efficiently; he is not a weak person who would therefore postpone his action. Futhermore, the murderer's death seems feasible. Finally, Hamlet kills his uncle almost by chance, in an action that has no direct connection with the reason for his revenge. The perception of story, plot and hero's character causes opposite reactions

The dynamic relation between the observer and a work of art is another mechanism of explanation for Vygotski. Identification with the hero or heroes, and distancing or separating oneself from the characters, taking an observer's perspective, also play an important role in the induction of different emotions.

Vygotski coincides with psychoanalysts in the idea that identification with the hero, as well as the presence of different features of the hero's personality constitute a central element in the tragedy. When the members of the audience, identifying with

Hamlet, feel that he is no longer acting in consonance with his anger and eagerness for revenge, they experience contradictory emotions. Both opposed levels within the tragedy (Hamlet should take his revenge ——> story and vicarious anger; Hamlet does not take his revenge ——-> plot and vicarious anxiety) combine in the hero. There is an even deeper level of contradiction, i.e.: we watch the tragedy both through the hero's eyes and our own. And besides this distancing, the tragedy acts as a device for creating simultaneously opposing emotions.

The role of identification and distancing in the induction of different moods and emotions is supported by current research. The importance of alternately moving from an observer's position to an identification with the actors, which causes different emotions (those induced by the understanding of the whole plot) and emotions of a different intensity (identification with the actor induces emotions and mood; less intense feeling are evoked when viewing as a spectator), has also been confirmed.

Davis, Mull, Young & Warren (1987) found that positive emotional reactions to a dramatic film stimuli ("Who is afraid of Virginia Wolf?" and "Brian's Song") were affected primarily by instructions to view objectively, but negative emotional reaction was mainly influenced by instructions to view empathically. We can therefore conclude that identification with actors and re-evocation of personal experiences induce strong emotions (in the case of tragedies, stressful events, etc negatives ones). Nevertheless, observing from a "third person" perspective provokes positive emotional reactions. Viewing works of art, and alternating between an actor and an observer perspective, are effective mechanisms for inducing mixed emotions, as Vygostki has suggested.

Contradictions between "Form" and "Content", between characters and plot, and identification or empathic observation are not the only mechanism of works of art. The spectator of works of art experiences a special type of feeling (in the case of "Hamlet", pain at watching a tragic event, and at the same time the feeling of unique triumph evoked by the tragedy as a whole), which represses the peripherical and motory dimensions of emotional reaction. Works of art, through the contradictory nature of aesthetic affect, induce a central,or representational, emotional activation and impede a peripherical, or expressive-motory, emotional release.

Vygotski suggests that the double induction of positive and negative affects makes tension mount. Suddenly, the reader or spectator undergoes a catharsis, a discharge and transformation of affects and emotions. The most important effect is an expansion of fantasy that restructures the reader's global inner experience (Vygotski 1925/1972; Kozulin, 1990) (see figure 1).

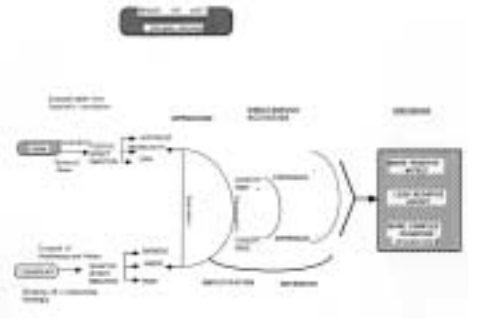

*Figure 1*

Vygotski's originality comes from suggesting that the subject's cognitive complexification starts from a simultaneous activation of positive and negative affectivity at an expressive-motory and representational level. This activation is produ-

ced by the above mentioned contradiction existing between "Form" and "Content", which causes opposing emotions. That works of art are effective, in a broad sense, when evoking affective reactions at any level, has been confirmed. Nevertheless, there is no clear evidence about mixed or ambivalent emotions, although, on the other hand, people often experience mixed emotions: subjects reported moderate amounts of both positive and negative affects, though only rarely are both of these emotions intense at the same time (Diener & Iran-Nejad, 1986). It is not impossible, and it is very congruent with common sense, that works of art are related to mixed emotion.

Vygotski suggests a relationship between contradictions and level of complexity, and aesthetic pleasure. More complex works of art are more able to induce different emotions and provoke a deeper aesthetic feeling. Research on experimental aesthetics partially confirms this idea: a positive link between phenomenic complexity and aesthetic pleasure is a consistent empirical result (Berlyrne, 1968; Corraliza, 1987).

Vygotski comes to the general conclusion that most works of art, fable, novel, tragedy, necessarily contains an affective contradiction, creates opposing feelings, causes "short circuits" and further discharge and change in these feelings (Vygotski, 1925/1972).

In this sense, there are some current data that confirm Vygotski's theory about the role of art. For example, we can find experimental evidence which has recently shown that some stories or written texts provoke mood changes (Johnson & Tversky, 1983).

Scheff (1983) research on art and emotion reaffirms Vygostki's ideas. Scheff's theory, accompanied by the data obtained in different studies of catharsis, shows that drama rituals, provided the optimal "aesthetic distance" is respected, supply a social technique for the safe discharge of negative emotions. (Scheff, 1983; Thoits, 1989).

Finally, an abundant body of literature confirms that emotions influence cognition, suggesting that Vygotski's ideas about emotions and cognitive complexity are partially valid. Results obtained from different studies that investigated the influence of positive affect on cognitive organization, suggest that positive affect is associated with creativity, flexibility and with broader or more interrelated cognitive structures (Isen, 1987; Fiedler, 1988). Positive affect can influence cognitive organization, as suggested by Vygostki, that is to say, it can lead to greater complexity and innovation. On the other hand, people in a bad mood show a higher degree of analytic and conservative reasoning. In the domain of persuasion research, for instance, people in induced bad moods were observed to pay more attention to the quality of persuasive arguments (Schwartz, 1990). Besides, it has also been confirmed that affectivity has an influence on judgment and thought (Isen, 1987).

Therefore, we can state that there is much evidence confirming art as a technique that induces mood changes and emotions. Listening to music, viewing films or reading dramatic texts are adequate mood induction procedures (Salovey & Rodin, 1985; Isen; 1987; Martin, 1990).

Following this line of thought, we were particularly interested in finding out if Vygotskian theory could be observed and applied to more subtle cognitive functions, such as popular music and songs.

For instance, if we take a look at romantic popular music, we observe how blues and "boleros" (Latin songs) mix "depressing" contents with a beautiful rhythmic formal representation and a re-

laxing melody. Something similar could be said about "Flamenco" and popular Arabic music. However we must state that Vygotski does not always represent the musical rhythm as being opposed to the contents of the piece of work. Evidently, in the case of classical music, a more complex explanation has to be sought if we want to demonstrate the validity and usefulness of Vygotski's theory.

Nevertheless, it has been demostrated, through different psychophysiological studies, that music can induce changes in pulse rate, respiration, blood pressure, the psychogalvanic reflex, etc. (Harrer & Harrer, 1977; Dowling and Harwood, 1986)). A curvilineal effect between complexity and aesthetic pleasure when listening to music has also described by some authors (Gaver & Mandler, 1987).

Apart from producing ANS changes, some experiments have recently found that music influences mood, cognition and behaviour. Kenealy (1988) details experimental studies which have found that music affects self-reported mood and also causes some behavioural changes (e.g. subjects who were told they were going to hear sad music but were instead played happy music). Findings suggested that musical mood induction (at least in this procedure) is perfectly capable of producing two different emotional states without instructing subjects "to work at getting into the desired mood".

We can conclude that works of arts induce important changes in mood, and mood changes provoke cognitive reorganization of content and form.

Therefore, Art, quite probably, induces ambivalent emotional feelings. This way of feeling emotions is a direct "procedural" way of learning. It allows subjects to experience emotions that otherwise would be out of their reach. It is capable of reevoking personal experiences from a distant standpoint, from different points of view and penetrating into temporal-causal structuring of affective life.

In our opinion, the process of development and complexization we have described is caused by works of art, which play an important role in socialization, in a similar way that language relates to thought. We conclude that Vygotski's perspective on the psychology of emotions holds an interest that exceedes the mere history of ideas.

Bearing all of this in mind, and pursuing Vygotski's theories we can speculate that if a work of art induces both positive and negative affect, it may provoke higher cognitive reasoning. We will take as an example some of Vygotski's ideas on the social functions of works of art. Deconstructing the action of the work of art, deleting the opposition of "Form" and "Content" should reduce the impact on emotion and cognition of works of art. Focusing people only in one direction (for instance, on the musical form, or the content) of lyrics will simplify the action of "semiotic devices". Taking this into account, people instructed to focus at the same time on content and form, in this case, the lyrics and the music, should have a strongly emotional reaction and should show a higher cognitive complexity. We are not interested in studying the classic effects (i.e. sad lyrics induce negative affect, or relaxing music induces calm affect) but rather we are focusing on contrasting the effects of simultaneous induction.

Love songs are so common that they might be considered a valid but limited form of art, they are widespread and people normally use them to support or change mood. We will test Vygotski's ideas using "boleros" (Latin songs) and other pop songs.

Our experimental research aims to test the Vygotskian idea suggests that a nullifi-

cation of the combined action of "Form" and "Content", in romantic music, would reduce identification, aesthetic evaluation, complexity of induced afective reaction, and induced cognitive complexity. The present work on mood effects in cognition shows that people in a good mood are broader-minded and more flexible in cognitive organization.

## Experiment

### *Method*

#### Subjects

57 Subjects, 70% women undergraduate students who answered a request to participate in aesthetic evaluation tasks. Aged 18-55 (mean = 23). Sex distribution was controlled in each experimental group.

#### Mood Manipulations

Various recorded series of romantic "bitter-sweet" Spanish and Latin-American pop songs were pretested.

Subjects were told to listen to, and aesthetically evaluate three series of different types of music: classical music at basic level; Spanish pop songs and Latin-American romantic songs.

We had three different conditions:

a) Only "form" or music. The instruction was: "Please, pay attention only to the music and evaluate the piece aesthetically".

b) Only "content" or the lyrics, The instruction was: "Please, pay attention only to the poem, word or lyrics and evaluate the piece aesthetically".

c) Both content and form or "Catharsis Condition", The instruction was: "Please, pay attention both to the music and to the lyrics and evaluate the piece aesthetically".

The order of presentation was counterbalanced in the case of Spanish pop songs and Latin-American romantic songs.

The design was a three between conditions, by three within subjects (type of music).

#### Preliminary Measures

Subjects' attitudes towards music (two items: "How interested are you in music?", from 1 = "I am not at all interested" to 4 = "I love music". "How good do you think you are at music?", from 1 = "I think I have no ear for music " to 8 = "I am a proficient musician"); attitude towards pop ("Do you like romantic songs?" "Yes = 1; "No" = 0) and knowledge of Latin-American romantic music (two items: "Do you know "boleros"?"; "Do you regularly listen to "boleros"?", from 1 = "Never" to 5 = "My favourite") were assessed prior to their being assigned the experimental conditions.

Moods prior to manipulation by the works of art were assessed by the Spanish version of the Multiple Affective Adjective Check List (MAACL). MAACL is a 81-item scale measuring anxiety, hostility and depression. There are inverted items as indexes of positive affect (called Topom 1) (e.g. Happy). Affirmative items (i.e. "afraid") are indexes of negative affect (called Tonem 1). Scale is agreement with an adjective to describe my mood; 0 = "not at all"; 1 = "partially"; 2 = "totally". English and Spanish version of MAACL has good reliability and validity (Gottlib & Meyer, 1986).

#### Dependent variables

1) Identification with the protagonists (called Idemp) ("Did the song seem relevant to your personal experience?"; "Did you identify with the protagonist?"; "Do

you understand the protagonist's sentiments and actions?", from 1 = "Not at all" to 6 = "Absolutely".

2) Cultural proximity to works of art (called Rele) ("Do you know the song?", from 1 = "Not at all" to 5 = "Very well"; "The experience recounted is culturally close to you" from 1 = "Close" to 6 = "Distant").

3) Sensory and physiological self-perceived emotional activation (called Sensa) induced by music and songs ("The songs induced feelings and emotions"; "Induced images or visual sensations, evoked by the songs, re-evoked past situations", from 1 = "Totally disagree" to 6 = "Totally agree") (Larsen & Lazlo, 1990).

4) Semantic Differential on Aesthetic Evaluation (D.S. Spanish version) was applied to the evaluation of:

a) Classical music.

b) Spanish pop songs.

c) Latin-American romantic songs. Bechini's reduced version of DS with the three classic dimensions: Valence 6 items (called eval) (i.e. "What you have just heard you would rate: "Agreable" = 1 to "Disagreable" = 5"); Activation (called Activ) (i.e. "Pasive" = 1 to "Active" = 5; Potency (called Fuer) (i.e. "Big" = 1 to "Small" = 5).

5) Differential Emotions Izard's Scale (DES): Ten series of three adjectives ("happy", "joyful", "carefree" for joy) reflect the Izard's ten basic emotions related to listening to music, listening to lyrics, or both. One DES measurement for each type of music (called Topos or Totris). "What you have just heard evoked, induced in you the following emotions: Sadness; Joy; Anger; Fear; Attention; Anxiety; Disgust; Scorn; Surprise; Happiness". DES scores vary from 1 ("Not at all") to 5 ("very much") (Izard, 1972).

6) Typicality ratings to prototypical love features - 44 items. Scores vary from "Not at all typical" = 1 to "Very typical" = 4. (Fehr, 1988; Shaver, Schwartz, Kirson & O'Connor, 1987).

7) Second measurement of moods (MAACL). Total score for positive affect adjectives is called Topom 2. Total score for negative affect adjectives is called Tonem 2.

### PROCEDURE

Subjects were recruited for the experiment from the different courses of the Psychology Department.

Before entering the laboratory, subjects were randomly assigned to one of the three conditions: - to concentrate on a) music; (b) lyrics; or (c) music and lyrics.

The subjects were told that the experiment involved the validity and reliability of an aesthetically-oriented scale. Principal dependent variables were justified as "mood control and attitude variables".

One subject was tested in each session.

Subjects were told to take a seat and answered the "Preliminary Measures" tasks (attitude to, and knowledge of, music) and then heard 5 minutes of classical music. Then, following the stimulus tapes, a dependent-measures packet was administered to each subject (1) Identification, etc; (2) Aesthetic D.S and (3) DES.

Subjects then listened to 5 minutes (three songs) of Spanish (or Latin-American) romantic pop songs. After this, subjects answered the dependent-measures packet for the second time.

Finally, subjects listened to 5 minutes of romantic pop music for the last time and filled in the last form.

Last of all, they completed the "prototypical love features" items and, for a second time, MAACL.

Subjects were carefully debriefed.

*Results*

### Reliability Measures and Data Reduction

We submitted each series of questions (identification; Aesthetic DS and DES) to separate factorial analysis (extraction method maximum likelihood, varimax rotation, free number of factors). Measures forming one factor ("Cultural relevance"; "Identification"; "DES positive emotions"; "DES negative emotions"; "DS Valence"; "DS Potency" and "DS Activation") showed satisfactory Cronbach's alpha values (respectively 0.66; 0.65; 0.71; 0.80; 0.83; 0.76 and 0.43). We worked with simple total scores and the sum of boleros and pop ratings (range and meaning of total scores are shown in tables).

As there were too few subjects to carry out a factorial analysis of prototypical love features, we reagrouped the items according to the scores in a sample of 389 subjects from "The Basque Autonomous Community" (The Basque Country, Spain). The items were regrouped as typical (scores of above 3 in the general sample), central (scores between 2.5 and 3 in the general sample) and peripherical (scores below 2.5).

### Independent Variables and Checking Variables

To check for the equivalence of experimental groups we submitted checking variables (attitudes towards music, towards pop, level of knowledge of Latin-American romantic music, moods prior to manipulation by the works of art) to an Anova. No differences were found in these measurements (univariate F (2,55) always < 1, non-significant) (see table 1).

*Table 1*
ANOVA between Group Conditions and Checking Variables

| Checking Variables | Conditions | | | |
|---|---|---|---|---|
| | Lyrics (N=16) | Music (N=17) | Lyric & Music (N=19) | F (DF=2,49) |
| Attitude<br>Not at all (1) - I love (4) | 2.9 | 2.6 | 2.8 | 1.2 |
| Aptitude<br>No ear (1) - Musician (8) | 3.1 | 2.9 | 3.7 | 1.7 |
| They know «Boleros»<br>Not at all (1) - Very well (4) | 1.9 | 1.9 | 2.1 | 0.7 |
| They listen to «Boleros»<br>Never (1) - My favourite (5) | 1.9 | 1.9 | 1.9 | 0.0 |
| They like romantic songs<br>No (1) - Yes (2) | 1.4 | 1.2 | 1.1 | 0.9 |

* p<.05
** p<.005

### Independent Variables and Factor Scores of Dependent Measures

As dependent variable we considered affect-balance, arrived at by subtracting the negative affect score from the positive affect score. The change-score comes from the difference between the affect balance before and after listening to the songs.

We submitted dependent measures to a Condition by Type of Music by Order Anova. We found no interaction effect and no order effect. Condition shows a significant main effect for affective change, $F(2,55) = 8.47$, $p < 0.05$ (see Table 2), and for positive affect DES, $F(2,55) = 3.2$, $p < 0.05$.(see Table 3)

Catharsis condition induced the strongest affective change (see Camba in Table 2), influenced love features typicality ratings and induced an intermediate level of DES positive affect (see Topos in Table 3).

Catharsis condition did not influence aesthetics, negative affect and emotional identification evaluations (see table 3). The examination of the average of positive and negative affect scores shows that, under "catharsis condition", positive affect does not change and negative affect increases. On the other hand the "only music", or "only lyrics", conditions caused negative affect to decrease and positive affect to rise.

Love features centrality ratings for each condition were contrasted or compared with the mean of a neutral sample (N=389). Catharsis induced significantly higher scores for global and central features centrality. Catharsis condition did not influence central and peripherical love features scores.

*Table 2*
ANOVA between Group Conditions and Checking Affective Variables, and Dependent Affective Variables

| **Checking Aff. Variab.** | **Conditions** | | | |
|---|---|---|---|---|
| | Lyrics (N=16) | Music (N=17) | Lyric & Music (N=19) | F (DF=2,49) |
| Topom 1 (0-102) | 41.6 | 37.1 | 42.8 | 0.4 |
| Tonem 1 (0-108) | 6.8 | 12.8 | 6.8 | 0.3 |
| Balan 1 (Topom 1 - Tonem 1) | 34.8 | 24.4 | 36.0 | 1.8 |
| | | | | |
| **Dependent Aff. Variab.** | **Conditions** | | | |
| | Lyrics (N=16) | Music (N=17) | Lyric & Music (N=19) | F (DF=2,49) |
| Topom 2 (0-102) | 44.3 | 40.9 | 40.0 | 0.7 |
| Tonem 2 (0-108) | 4.5 | 6.3 | 7.2 | 0.6 |
| Balan 2 (Topom 2 - Tonem 2) | 39.8 | 34.6 | 32.8 | 0.5 |
| Balan 1 - Balan 2 (=Camba) | –5.0 | –10.2 | 3.2 | 3.5* |

* p<.05
** p<.005

*Table 3*
ANOVA between Group Conditions and Dependent Variables

| **Dependent Variables** | **Conditions** | | | |
|---|---|---|---|---|
| | Lyrics (N=16) | Music (N=17) | Lyric & Music (N=19) | F (DF=2,49) |
| Identification (Idemp) Not at all (4) - Absolutly (24) | 16.6 | 16.4 | 17.6 | 0.7 |
| Cultural Proximity (Rele) Distant (4) - Close (22) | 16.6 | 15.6 | 17.0 | 1.0 |
| Sensory-Image (Sensa) Tot. agree (4) - Tot. disagree (24) | 18.7 | 17.4 | 18.3 | 0.6 |
| Evaluation (Eval) (D.S.) Agreable (12) - Desagreable (60) | 24.3 | 28.1 | 27.9 | 2.2 |
| Activity (Activ) Pasive (4) - Active (20) | 12.5 | 11.4 | 11.5 | 1.3 |
| Potency (Fuer) Big (6) - Small (36) | 20.5 | 19.1 | 20.7 | 1.3 |
| Topos (Positive Emotion) Not at all (8) - Very much (40) | 23.7 | 19.4 | 22.7 | 3.2* |
| Totris (Negative Emotion) Not at all (12) - Very much (60) | 17.3 | 18.7 | 20.0 | 0.9 |
| DES (Topos-Totris) | 6.4 | 0.7 | 2.7 | |
| | | | | |
| **Social Knowledge of Emotions** | | | | |
| Love Feat. Centrality Ratings | Neutral Sample (N=389) | Lyrics (N=16) | Music (N=17) | Lyric & Music (N=19) | F (DF=2,49) |
| Global | 134.4 a# | 136.9 | 136.2 | 140.2 a# | 0.2 |
| Prototypical | 104.3 a# | 107.2 | 105.7 | 109.2 a# | 0.5 |
| Central | 19.5 | 19.2 | 19.3 | 20.4 | 0.7 |
| Peripherical | 10.6 | 10.6 | 11.2 | 10.6 | 0.2 |

* p<.05
** p<.005
#Means sharing one subscript (i.e. 107.2 a-104.3 a) are significant differents, t-test one tail

Spanish pop songs elicited the highest evaluative and emotional response (data not shown).

### Internal Analysis

Correlations between dependent measures support the relationship between identification, cultural proximity, sensorial and affective reaction, and aesthetic evaluation (see Table 4)

Closer cultural proximity, and identification were related to higher affective reaction and to more positive aesthetic evaluation of the songs. Subjects with the highest second time negative affect (MAACL) disagreed most with romantic love dimensions. We can understand this relationship as "depressive realism". Subjects with the highest second time positive affect (MAACL) agreed most with romantic love dimensions. We can understand this relationship as "an unrealistic optimism illusion".

## Discussion and conclusions

In some ways, our theoretical introduction seems to confirm that works of art, including music, are an efficient inducing mechanism of affective and cognitive changes (as Vygotski suggested). There is partial evidence to support Vygotski's idea about the role of emotion as a facilitator of cognitive complexity, in particular of positive affect. There is also considerable evidence to support the idea that taking an observer's role, or identifying closely whith the characters of a work of art produce qualitatively different emotions. Lastly, there is partial evidence to support the existence of mixed positive-negative states of emotion. In any case, there is no systematic evidence that works of art in-

*Table 4*
Pearson Correlations Coefficients between
Dependent Variables Dimensions Scores

| | **Topos** | **Eval** | **Activ** | **Fuer** | **Sensa** | **Rele** | **Idemp** | **Topom 2** | **Tonem 2** | **Camba** |
|---|---|---|---|---|---|---|---|---|---|---|
| Totris | –.00 | .44* | –.05 | .04 | –.23* | –.20 | .00 | –.13 | .50** | –.31** |
| Topos | | –.57** | .30* | .47** | .27* | .36* | .37** | .45** | –.09 | –.61** |
| Eval (DS) | | | –.29* | –.48** | –.51** | –.54** | –.56** | –.41** | .40** | –.49** |
| Activ | | | | .21 | .34** | .30* | .15 | .14 | –.19 | .19 |
| Fuer | | | | | .42** | .44** | .47** | .24* | –.05 | .21 |
| Sensa | | | | | | .73** | .53** | .41** | –.29* | .45** |
| Rele | | | | | | | .54** | .28* | –.26* | .32* |
| Idemp | | | | | | | | .26* | –.17 | .25* |
| Topom 2 | | | | | | | | | –.26* | .92** |
| Tonem 2 | | | | | | | | | | –.61** |

| **Love Feature Centrality** | **Totris** | **Topos** | **Eval** | **Activ** | **Fuer** | **Sensa** | **Rele** | **Idemp** | **Topom 2** | **Tonem 2** | **Camba** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Global | –.19 | .47** | –.44** | .29* | .27* | .39** | .43** | .31** | .38* | –.18 | .39** |
| Prototypical | –.27* | .48** | –.53** | .30* | .31** | .36** | .42** | .33** | .33** | –.22* | .36** |
| Central | –.06 | .31* | –.21 | .20 | .21 | .34** | .34** | .20 | .36** | –.12 | .35** |
| Peripherical | .13 | .11 | .08 | .19 | –.06 | .16 | .10 | .01 | .16 | .09 | .10 |

* p<.05
** p<.005

duce ambivalent emotions. Neither is there any sistematic data that works of art provoke an intense cognitive or representational emotional reaction, while at the same time inhibiting the peripherical motoric-expressive reaction.

Our experimental research was aimed at testing the idea that if we annuled the combined action of the form and content of romantic music there would then be a reduction in identification, aesthetic evaluation, complexity of induced affective reactions and complexity of induced cognitive reactions.

Only affective impact, an optimistic evaluation of prototypical romantic love features and a connection between cultural proximity, identification and affective reaction, were clearly supported by our data. Focussing subjects only on the lyrics of the songs, or only on the musical form, did not influence aesthetic feelings, refuting part of Vygotski's ideas.

A preliminary interpretation of our results would suggest that we did not handle the question of the appreciation of works of art adequately. However, the fact that "catharsis condition" produce an intermediate result while the lyrics have the highest results and the music the lowest, confirms in some way that the manipulation had an effect. A second line to interpret the results would be that the stimuli, being well-known, were given an aesthetic evaluation independent of the experimental manipulation.

We must understand our data as reflecting a direct influence of the mixture of form and content on affective change and as producing a greater agreement with prototypical love features, and indirectly, by means of a more egalitarian balance of affects, as inducing a more realistic point of view of romantic love.

We will have to work on different replications, with stricter manipulations of stimuli, more valid creativity and cognitive complexity variables. Finally, we ought to mention one weakness which limited the effects of our manipulation- subjects did not know very much about music, nor did they have a positive attitude towards romantic music.

Nevertheless, we think that Vygostki's theory of the role of works of art in emotional socialization and cognitive development has a general heuristic value, the real core and relevance of which has yet to be found.

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