# Motivation

Literature about music interpretation is mostly written

    by performers,e.g.

➢   **A. Brendel,** "Musical Thoughts and Afterthoughts" (1976);

➢   **A. Brendel,** "Paradosso dell'interprete. Pensieri e riflessioni sulla musica" (1997);

➢   **A. delle Vigne,** "Viaggio nell'intimo di un pianista" (2006);

➢   ...

But does not necessarily reflect the way musicians

    think in their everyday life.

Goals

➢ perform a close analysis of the vocabulary concerning **music performance** and **interpretation**

➢ explore the multiple **relationships** between these meanings

➢ focus on **subcategories of meaning** and their inter-relationships
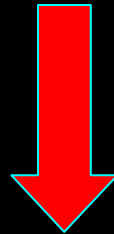
to map out how musicians think about interpretation

Method

➢ ## *Procedure:*

    ➢ **participants freely described performances of piano pieces in different interpretations by different performers**

        ➢ *Part 1:* **open spoken interviews**

        ➢ *Part 2:* **closed written interviews (two different instructions)**

➢ ## *Stimuli:*

    ➢ **3 Chopin Preludes of different character**

    (Op. 28. n°1, 4 and 5)

Ex.: performed by **George Bolet,**
http://www.24listen.com/jorge-bolet-carnegie-hall-recital-1974-part-5-mp3.htm

➢ ## *Participants:*

    ➢ **16 subects** *(8 pianists and 8 not pianists; 8 males and 8 females; 8 German speakers and 8 Italian speakers)*

Method

➢ ## Procedure:

    ➢ **participants freely described performances of piano pieces in different interpretations by different performers**

        ➢ **Part 1: open spoken interviews**

        ➢ **Part 2:** **(A)** free associations and emotions

                (B) music structure

➢ ## Stimuli:

    ➢ **3 Chopin Preludes of different character**

    (Op. 28. n°1, 4 and 5)

Ex.: performed by **George Bolet,**
http://www.24listen.com/jorge-bolet-carnegie-hall-recital-1974-part-5-mp3.htm

➢ ## Participants:

    ➢ **16 subects** *(8 pianists and 8 not pianists; 8 males and 8 females; 8 German speakers and 8 Italian speakers)*

Examples

P1 <u>**Prelude op. 28 n°1 performed by Ashkenazy**</u>

It is evocative, it brings up quite precise sensations, an image of spring, flowers luxuriance (as if I see flowers growing in an accelerated way), it gives me a sense of luminosity, of colour, of softness [translated from Italian]

<u>**Prelude op. 28 n°1 performed by Cortot**</u>

This is the same piece performed in a different way. Here is emphasized another part of the piece: previously, one could hear more the harmony, and hence a general picture, now one can better hear melody incisiveness and this results in a tension previously absent, a nervousness, a worry, in short a not completely peaceful state of mind - wilder than before. To find an image, a worried person [translated from Italian]

P7 <u>**Prelude op. 28 n°5 performed by Pollini**</u>

It is always better than the previous one, there are a lot of dynamics and agogics, it is much more logical and made much more precisely. It seems to me much more developed, simple and mature, while the other was played rather superficially; so when I compare the two performances, here there are more happening things and simply more diversity and transparency [translated from German]
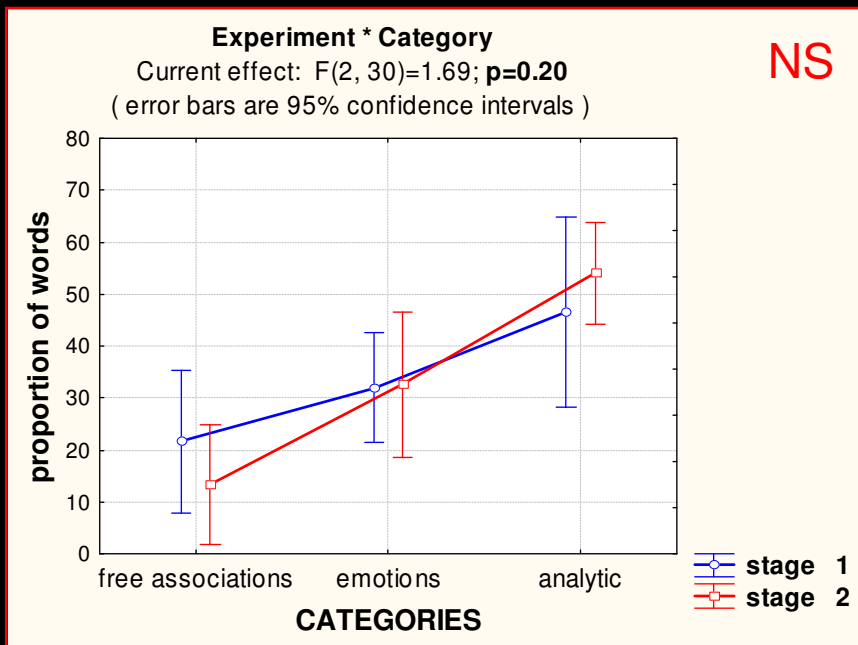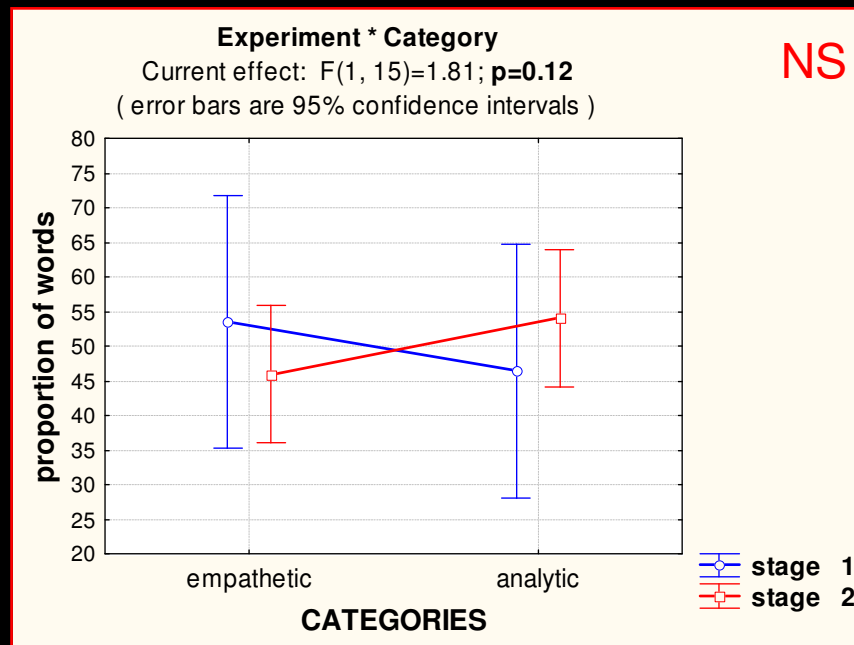
Data analysis

➢ *stage A:*

    ✓ *top-down categorization:*

       ✓ *free associations (images, situations)*

       ✓ *emotions (feelings, mood)*

       ✓ *analytic (musical structure, technical)*

➢ *stage B:*

    ✓ *bottom-up categorization:*

       ✓ *subcategories derived by data*

Analysis of categories

➢ *The relative number of words in each category does not depend on the procedure (spoken & free versus written & constrained)*

Experiment * Category
Current effect: $F_{(1, 15)}=1.81$; **p=0.12**
(error bars are 95% confidence intervals)

NS

Experiment * Category
Current effect: $F_{(2, 30)}=1.69$; **p=0.20**
(error bars are 95% confidence intervals)

NS

Erica Bisesi & Richard Parncutt
The informal vocabulary of professional musicians for describing expression and interpretation

8

CATEGORIES	WEIGHTED AVERAGE
FREE ASSOCIATIONS	19.53
EMOTIONS	31.32
ANALYTIC	49.15

➢ **the categories have different sizes**

➢ **category sizes depend on the musical structure**

Piece * Category

Current effect: F(4, 60)=3.19; **p=0.02**

(error bars are 95% confidence intervals)

op. 28 n°1
op. 28 n°4
op. 28 n°5

Erica Bisesi & Richard Parncutt
The informal vocabulary of professional musicians for describing expression and interpretation

9

CATEGORIES	WEIGHTED AVERAGE
FREE ASSOCIATIONS	19.53
EMOTIONS	31.32
ANALYTIC	49.15

➢ **the categories have different sizes**

➢ **category sizes depend on the musical structure**

Category
Current effect: $F_{(2, 30)}=18.36$; **p=0.00001**
(error bars are 95% confidence intervals)

Piece * Category
Current effect: $F_{(4, 60)}=3.19$; **p=0.02**
(error bars are 95% confidence intervals)

op. 28 n° 1
op. 28 n° 4
op. 28 n° 5
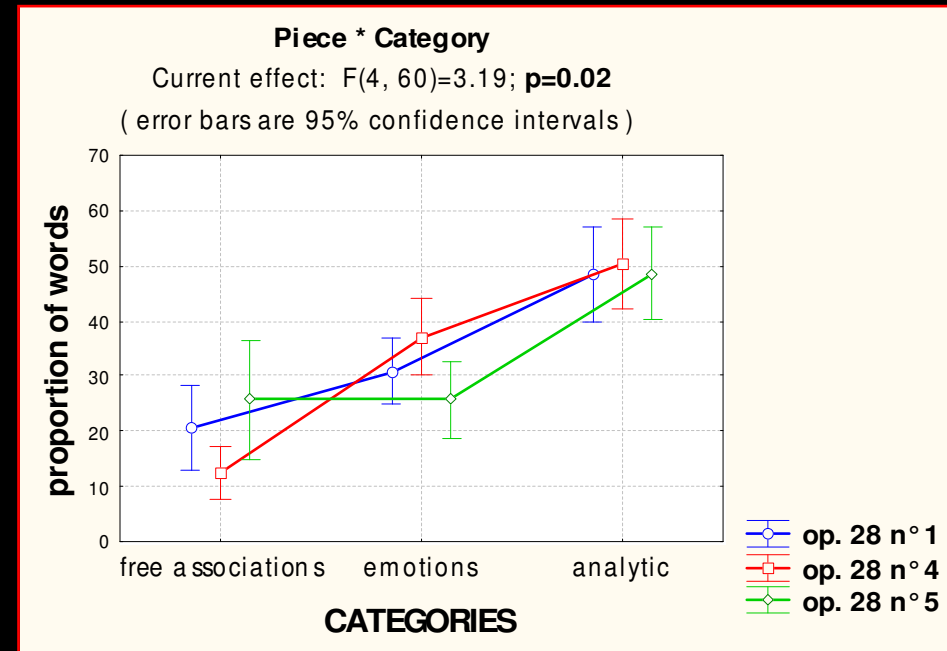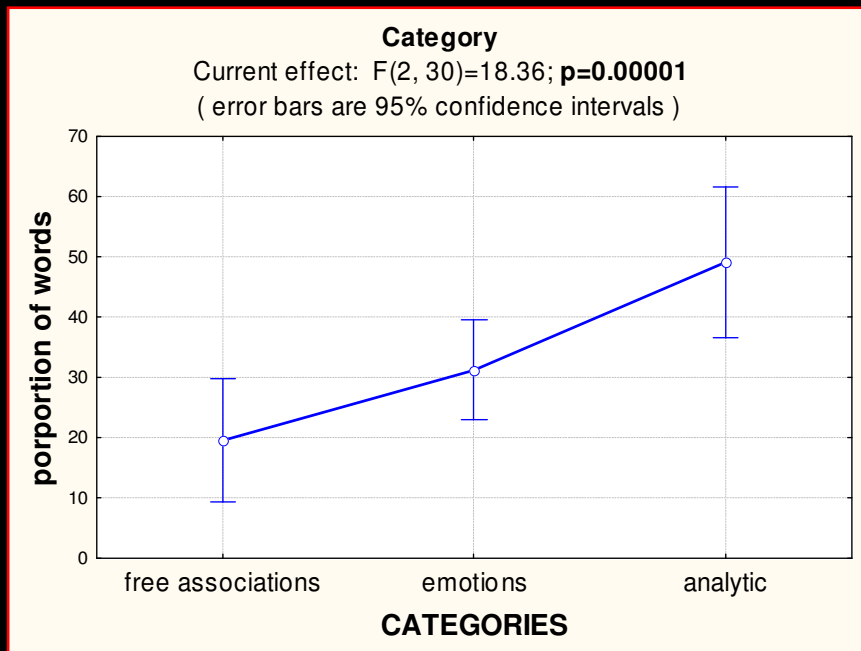
Analysis of subjects' groups

➢ *categorization does not depend on gender or expertise:*

Erica Bisesi & Richard Parncutt
The informal vocabulary of professional musicians for describing expression and interpretation
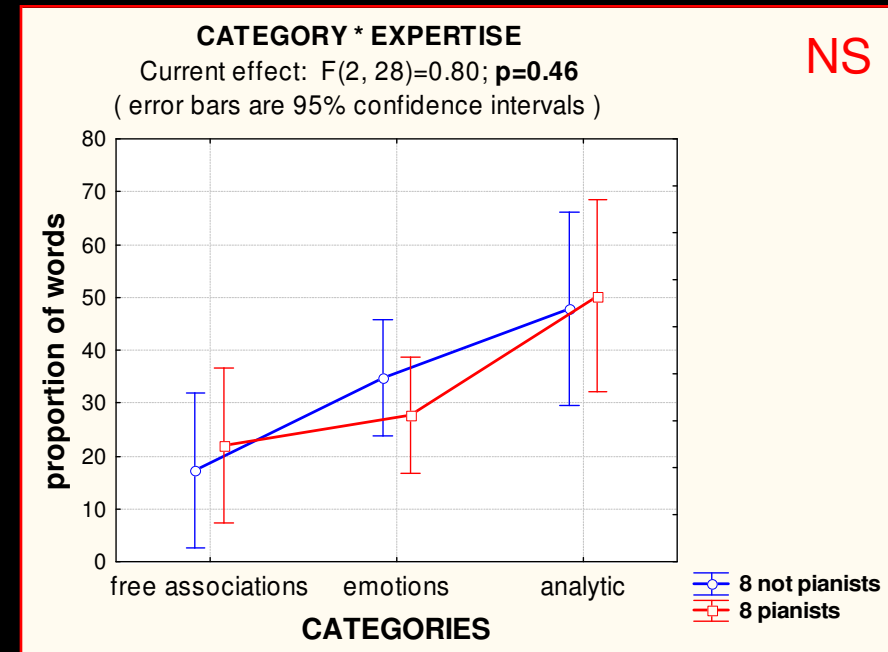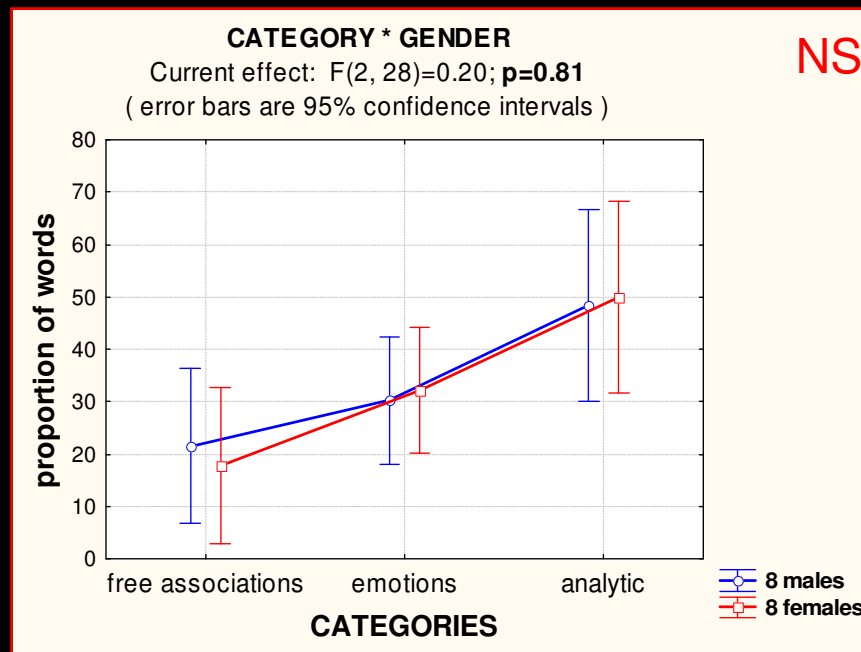
Analysis of subjects' groups

➢ *categorization does not depend on language:*

CATEGORY * LANGUAGE
Current effect: $F(2, 28)=0.05$; **p=0.95**
(error bars are 95% confidence intervals)

NS

Erica Bisesi & Richard Parncutt
The informal vocabulary of professional musicians for describing expression and interpretation

12
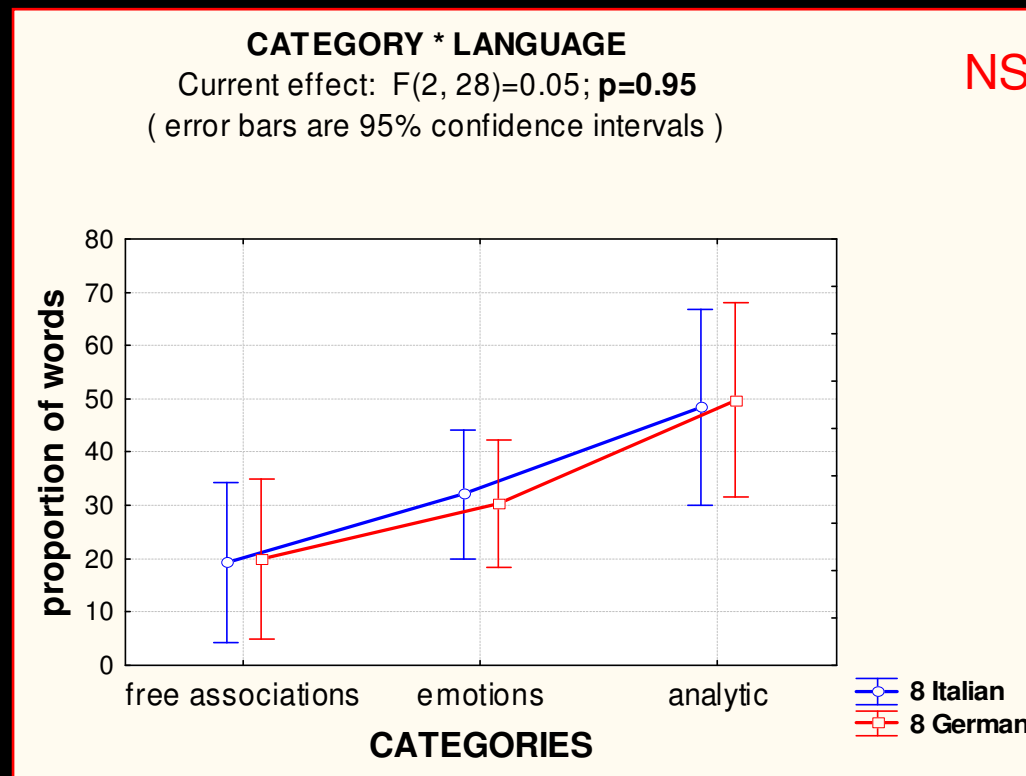
Subcategories examples

COLOURS				
		LIVING THINGS		
STATIC	**HUMAN**	una persona che riflette	a person who reflects
		alte Menschen	old people
	NOT HUMAN	rigoglio di fiori	luxuriance of flowers
		kleine Mäusebabys	little babymices
DYNAMIC	**HUMAN**	muscolo cardiaco	heart muscle
		Babys Spiele	babies' games
	NOT HUMAN	ghepardo che corre	rushing cheetah
		ein Blatt das in Bach dahintreibt	a leaf floating in a stream
		NOT LIVING THINGS		
STATIC		artigianato	handicraft
		Sonne	sun
DYNAMIC		onda	wave
		fließende Wasser	running water

Different kinds of free associations

➢ *The relative size of subcategories depends on the piece:*

Piece * Subcategory
Current effect: $F_{(2, 30)}=4.0$; **p=0.03**
(error bars are 95% confidence intervals)

SUBCAT.	WEIGHT. AVER.
static	10
dynamic	9.53

Piece * Subcategory
Current effect: $F_{(2, 30)}=5.28$; **p=0.01**
(error bars are 95% confidence intervals)

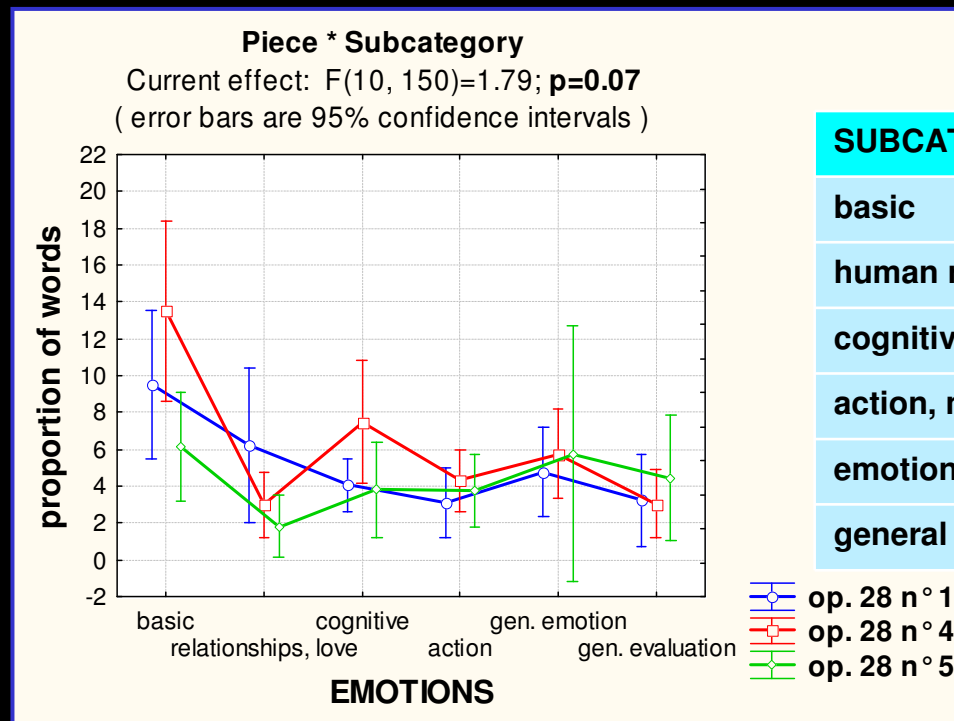| SUBCAT.	WEIGHT. AVER.
non living	11.98
living	7.55
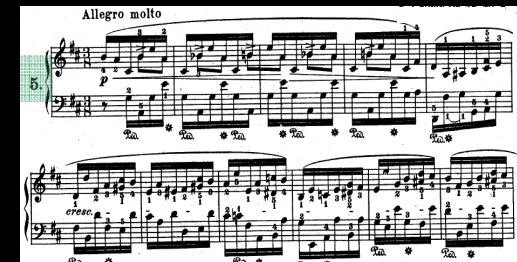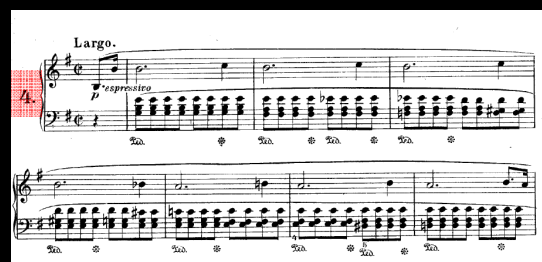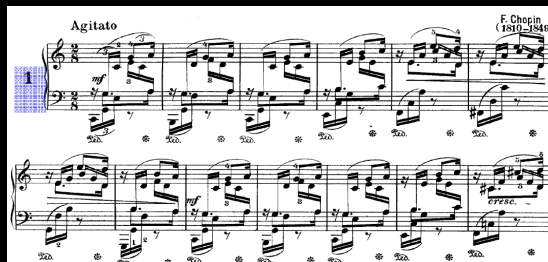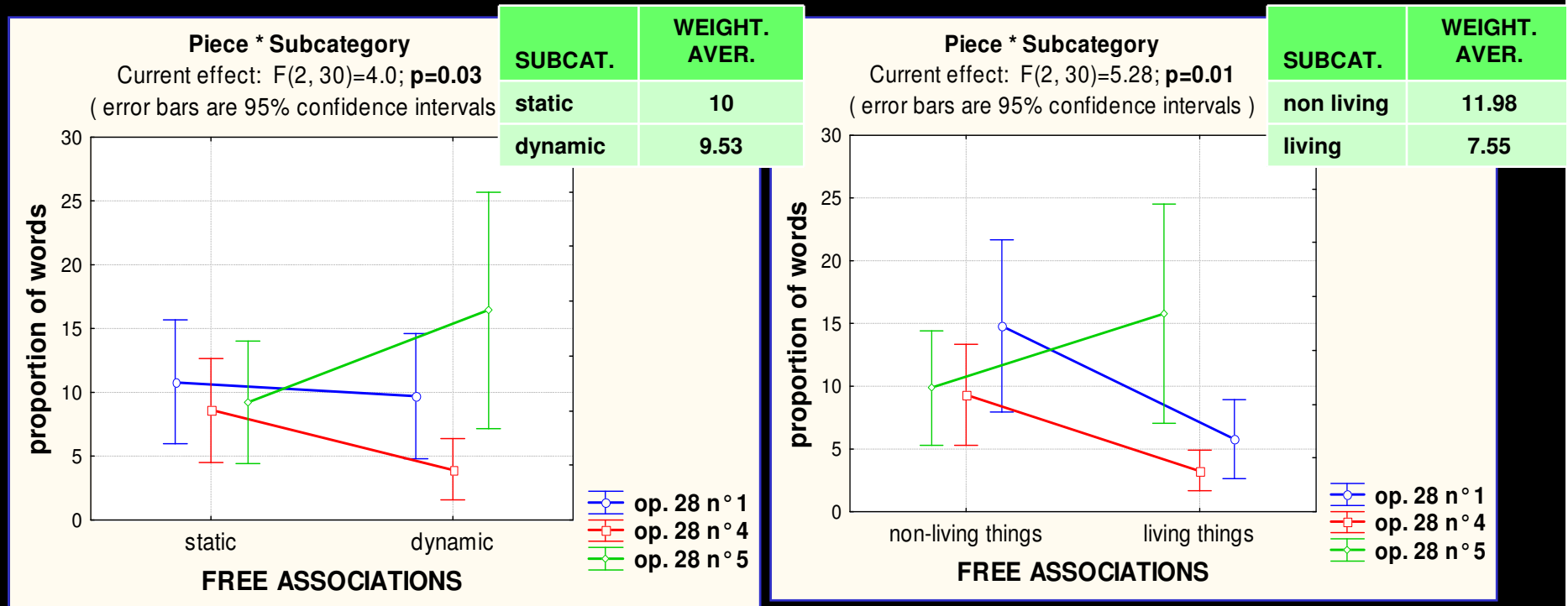
Subcategories examples

EMOTIONS

Italian, German, English

BASIC (anger, disgust, fear, joy, sadness, surprise) (Ekman, Friesen, and Ellsworth)	nervosità	nervosity
	freudig	joyful
HUMAN RELATIONSHIPS, LOVE and HATE	romantico	romantic
	Leidenschaft	passion
COGNITIVE, COMPLEX	sereno	serene
	seriös	serious
ACTION, MOVEMENT	briosità	liveliness
	unruhig	restless
EMOTION IN GENERAL	sensazioni	feelings
	Temperament	temperament
GENERAL EVALUATION OF THE MUSIC	piacevole	agreeable
	schön	beautiful

Different kinds of emotions

➤ *The relative size of subcategories does not depend on the piece*

Piece * Subcategory
Current effect: $F_{(10, 150)}=1.79$; **p=0.07**
(error bars are 95% confidence intervals)

SUBCATEGORIES	WEIGHT. AVER.
basic	**9.65**
human relationships, love	**3.68**
cognitive, complex	**5.39**
action, movement	**3.79**
emotion in general	**5.47**
general evaluation of the music	**3.34**

Subcategories examples

ANALYSIS (MUSICAL STRUCTURE)

Italian, German, English

ELEMENTS	accordi	**chords**
	Melodie	**melody**
RELATIONSHIPS	agogica	**agogics**
	Phrasierung	**phrasing**
GENERAL EVALUATION OF THE MUSIC	comprendere	**to understand**
	deutlich	**clearly**

Different kinds of analysis

SUBCATEGORIES	WEIGHT. AVER
elements	16.12
relationships	20.37
general evaluationof the music	12.66

➢ *Subcategories of musical structure do not depend on the piece:*

Subcategory
Current effect: $F(2, 30)=4.05$; **p=0.03**
(error bars are 95% confidence intervals)

Piece * Subcategory
Current effect: $F(4, 60)=1.35$; **p=0.26**
(error bars are 95% confidence intervals)

NS

Erica Bisesi & Richard Parncutt
The informal vocabulary of professional musicians for describing expression and interpretation

18
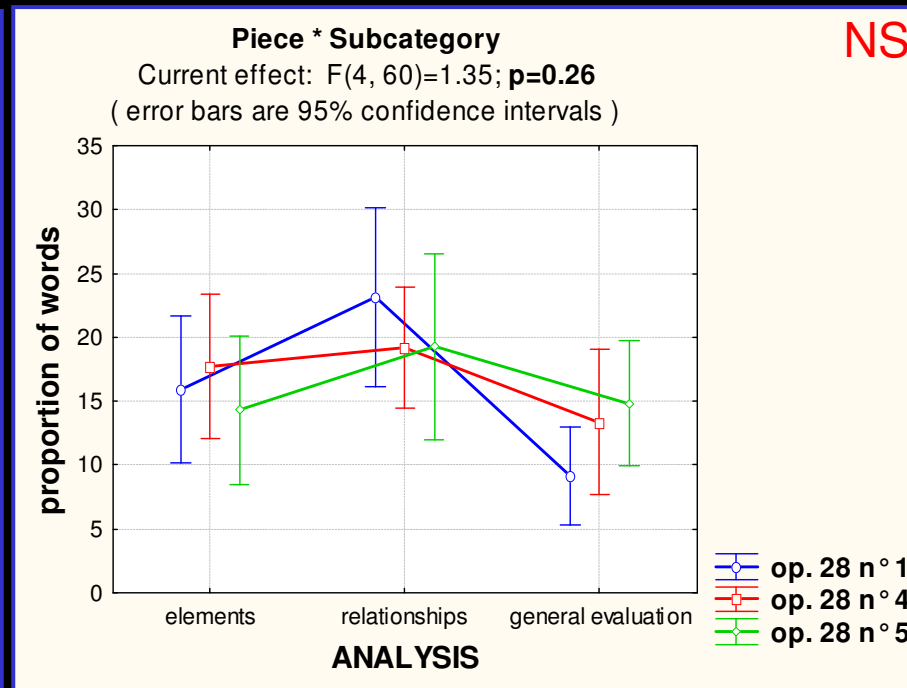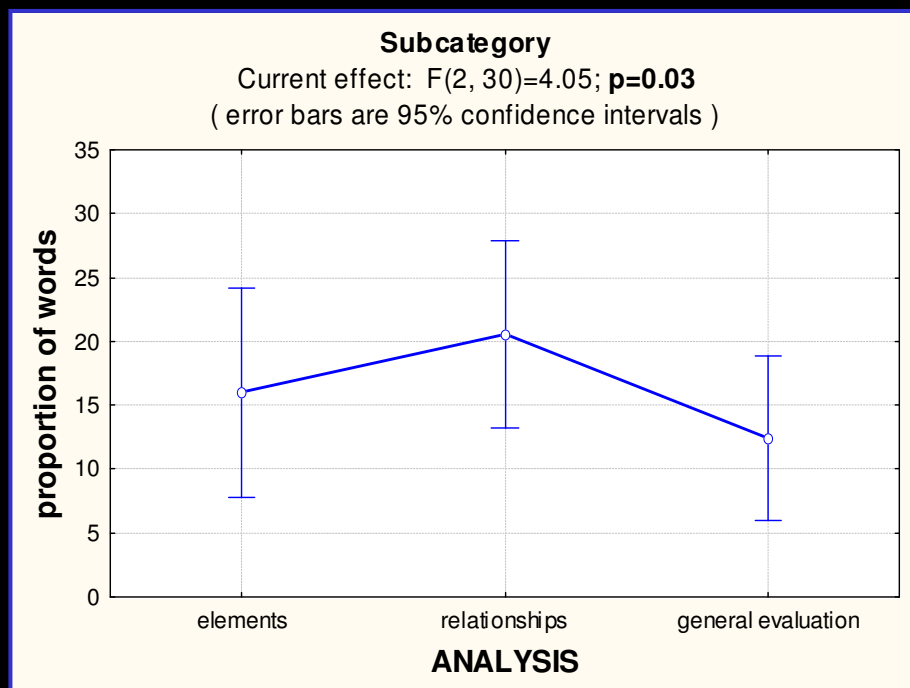
Summary of results

CATEGORIES AND SUBCATEGORIES	TOTAL NUMBER OF WORDS	AVERAGE PER SUBJECT	WEIGHTED AVERAGE
FREE ASSOCIATIONS	**297**	**18.56**	**19.53**
static	156	9.75	10
dynamic	141	8.81	9.53
living things	113	7.06	7.55
non living things	184	11.5	11.98
EMOTIONS	**465**	**29.06**	**31.32**
basic	142	8.87	9.65
human relationships, love	56	3.5	3.68
cognitive, complex	78	4.87	5.39
action, movement	58	3.62	3.79
emotion in general	81	5.06	5.47
general evaluation of the music	50	3.12	3.34
MUSICAL STRUCTURE	**733**	**45.81**	**49.15**
elements	237	14.81	16.12
relationships	306	19.12	20.37
general evaluation of the music	190	11.87	12.66

Erica Bisesi & Richard Parncutt
The informal vocabulary of professional musicians for describing expression and interpretation

Analysis of subjects' groups

➢ *Groups of empathetic and analytic participants are homogeneous*

Background:

➢ Kreutz, G., Mitchell, L. A. & Schubert, E. (2007). **The music empathizing-systemizing scale. A factor analytical approach,** *Jahrestagung der Deutschen Gesellschaft für Musikpsychologie*, Gießen, 14 – 16. September 2007.

➢ Kreutz, G., Schubert, E., & Mitchell, L . A. (2008). **Cognitive Styles of Music Listening**, *Music Perception, 26 (1),* 57–73.

➢ Nettle, D. (2007). **Empathizing and systemizing: What are they, and what do they contribute to our understanding of psychological sex differences?** *British Journal of Psychology*, *98,* 237–255.
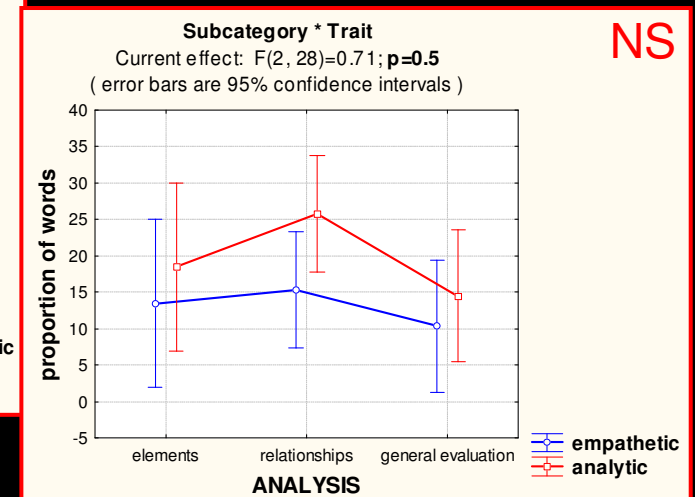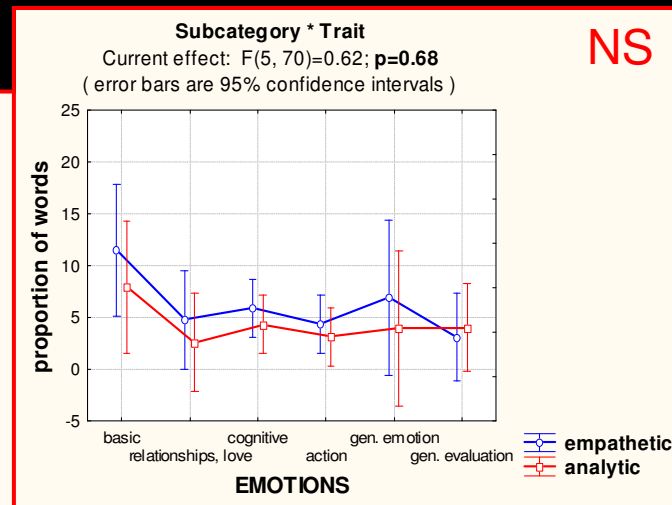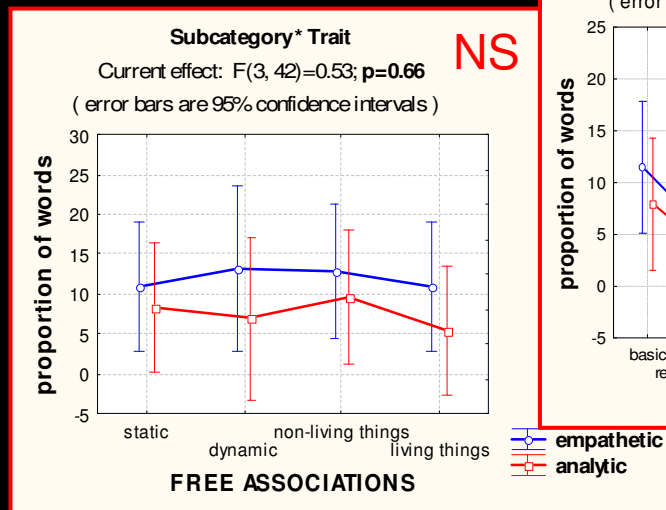
Analysis of subjects' groups

➤ *Little tendency to differentiate trais in subcategories of free association and emotion*

Background:

➤ Kreutz, G., Mitchell, L. A. & Schubert, E. (2007). **The music empathizing-systemizing scale. A factor analytical approach,** *Jahrestagung der Deutschen Gesellschaft für Musikpsychologie*, Gießen, 14 – 16. September 2007.

➤ Kreutz, G., Schubert, E., & Mitchell, L. A. (2008). **Cognitive Styles of Music Listening**, *Music Perception, 26 (1),* 57–73.

➤ Nettle, D. (2007). **Empathizing and systemizing: What are they, and what do they contribute to our understanding of psychological sex differences?** *British Journal of Psychology*, *98,* 237–255.
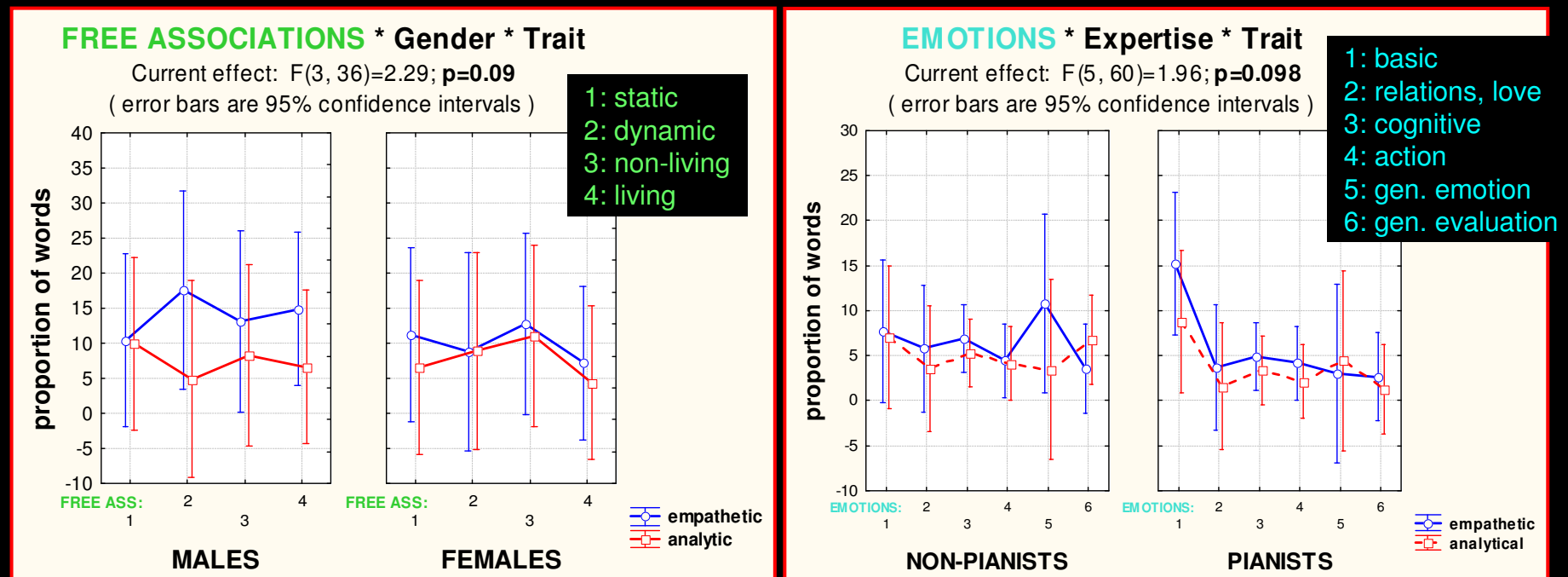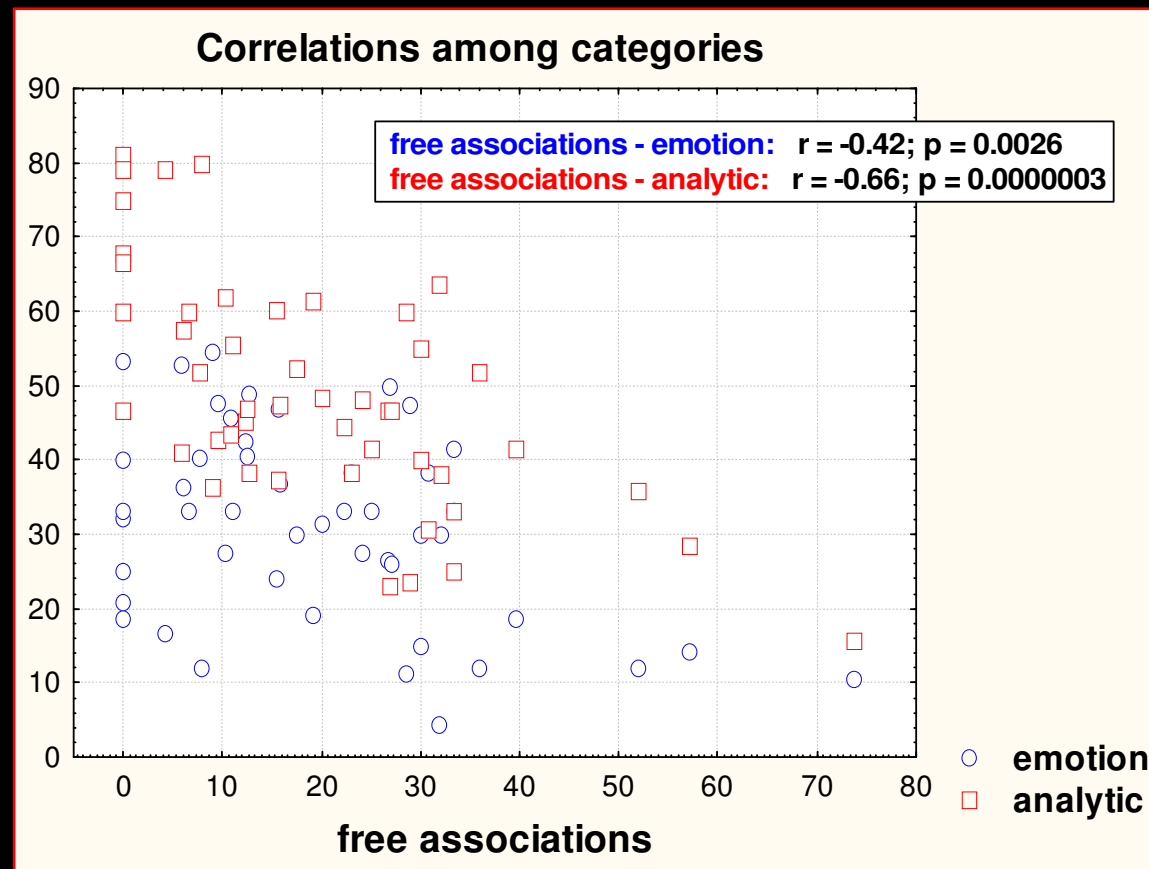
FREE ASSOCIATIONS * Gender * Trait
Current effect: $F_{(3, 36)}=2.29$; **p=0.09**
(error bars are 95% confidence intervals)

1: static
2: dynamic
3: non-living
4: living

empathetic
analytic

MALES   **FEMALES**

EMOTIONS * Expertise * Trait
Current effect: $F_{(5, 60)}=1.96$; **p=0.098**
(error bars are 95% confidence intervals)

1: basic
2: relations, love
3: cognitive
4: action
5: gen. emotion
6: gen. evaluation

empathetic
analytical

NON-PIANISTS   **PIANISTS**

Analysis of correlations

➢ **correlations** *among categories:*

Correlations among categories

free associations - emotion: r = -0.42; p = 0.0026
free associations - analytic: r = -0.66; p = 0.0000003

○ emotion
□ analytic

free associations

Erica Bisesi & Richard Parncutt
The informal vocabulary of professional musicians for describing expression and interpretation

22

Analysis of correlations

➢ **correlations** *among subcategories*

   ➢ *free associons vs. emotions*
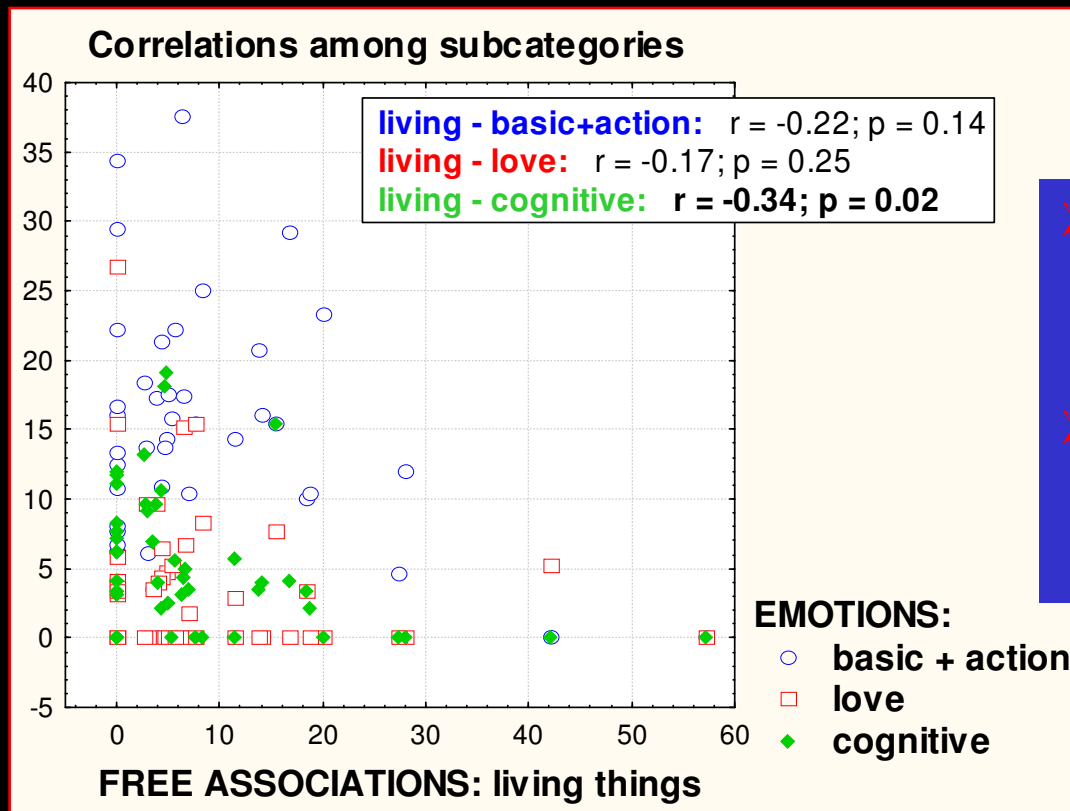
Correlations among subcategories

living - basic+action: r = -0.22; p = 0.14
living - love: r = -0.17; p = 0.25
living - cognitive: **r = -0.34; p = 0.02**

EMOTIONS:
○ **basic + action**
□ **love**
◆ **cognitive**

FREE ASSOCIATIONS: living things

➢ *when people talk about living things, they tend not to talk about emotions;*
➢ *cognitive emotions are much more suppressed than basic and love emotions*

Erica Bisesi & Richard Parncutt
The informal vocabulary of professional musicians for describing expression and interpretation

23

Conclusions

➢ When musicians think about interpretation, they are more analytical than emotional or associative

➢ Categories depend on the piece structure

➢ Most musicians use a broad spectrum of subcategories of free associations, emotions and musical structure

➢ Subcategories of free associations depend on the piece structure

➢ Negative correlation between free associations and musical structure is bigger than between free associations and emotions

➢ When people talk about living things, they tend not to talk about emotions; cognitive emotions are much more suppressed than basic and love emotions

➢ Failure to find clear groups of subjects

Future work

➢ *Individual differences:*
*failure to find clear groups of subjects:*

⬇

Explore individual differences among groups
(*factorial analysis, cluster analysis, analysis of correspondences*)

Erica Bisesi & Richard Parncutt
The informal vocabulary of professional musicians for describing expression and interpretation

25

Implications

➢ **FWF-project "Measuring and modeling expression in piano performance":**

   ➢ **mathematical modeling** *of timing and dynamics in the vicinity of musical "accents"*

   ➢ **automatic rendering** *of expressive performance (KTH-Stockholm "Director Musices" numerical code)*

   ➢ **qualitative evaluation** *of different combinations of free parameters (method of semantic differential)*

➢ **To study timing and dynamics, we should focus not only on gender and expertise, but also on the kind of thinking** *(free associations, emotions, musical structure, subcategories, sub-subcategories)*

Personal background

PhD in fundamental physics

professional pianist
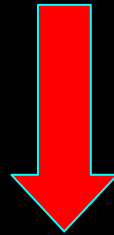
big interest in systematic musicology:

FWF post-doc project

"**Measuring and modeling expression in piano performance**"

Acknowledgements

This work was supported by the

"Where words leave off, music begins"

H. Heine

"Three things are needed by a good pianist:
head, heart and fingers"

W. A. Mozart