



Fondazione  
Pierfranco e Luisa Mariani  
neurologia infantile  
ONLUS

**THE NEUROSCIENCES AND MUSIC – II**  
***From perception to performance***

**Leipzig**  
**5 - 8 May 2005**  
The Westin Hotel



*in partnership with*  
Max Planck Institute for Human Cognitive  
and Brain Sciences, Leipzig

*with cooperation from*  
New York Academy of Sciences  
European Society for the Cognitive Sciences  
of Music (ESCOM), Belgium  
Society for Music Perception and Cognition (SMPC), USA  
8<sup>th</sup> International Conference on Music Perception & Cognition (ICMPC 2004,  
Northwestern University School of Music), USA  
International Society for Music in Medicine (ISMM), Germany

*Promotion Partner*  
Society for Education, Music and Psychology Research (SEMPRE), UK

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This conference is conceived as the ideal continuation to the two previous meetings on the relation between Music and the Neurosciences which have elicited the participation of the Fondazione Mariani in different capacities.

Reflecting the respective interests of neuroscientists in music and of musicians in neurosciences, the involvement started with "The Biological Foundations of Music" (May 2000), promoted by the New York Academy of Sciences, of which the publication of proceedings was supported and where contacts were established, leading to the "Neurosciences and Music" gathering in Venice (San Servolo, October 2002).

This first follow-up was appropriately subtitled "Mutual interactions and implications on developmental functions", according to the primary interest of the Mariani Foundation in paediatric neurology.

The proceedings have very promptly appeared in the Annals of New York Academy and have received very positive notices.

Given the success of these conferences, the perspective is now to follow such a favourable trend and further spin the thread of the relation between music, neurosciences and development. The Mariani Foundation plans to hold meetings approximately every 2 to 3 years, with variable frameworks depending on the specific outlook, since progress in the field suggests a different focus while more results are achieved and other issues and questions emerge. Leipzig has been chosen as the next very appropriate site. It hosts one of Europe's oldest university (founded in 1409) as well as the Max Planck Institute for Human Cognitive and Brain Sciences, and remains a musical city "par excellence": here Johann Sebastian Bach lived and worked as Thomaskantor for most of his life, and the conference will coincide with the Bach-Fest of May 2005.

The program has been elaborated by the Organizing Committee, with the most valuable assistance of two Scientific Advisors of the highest authority. The main focus has been titled "From Perception to Performance".

Four leading specialists of the present scene will lead introductory Workshops with the purpose to render available a "hands-on" understanding of the current status in each of four main areas of interest.

Seven sessions have been scheduled and the lectures reflect a thorough process of compounding the present interests of first-line researchers, so that very current results can be presented.

In order to properly encourage research efforts, the most established figures have been requested to participate as chairs and / or discussants, and have indicated upcoming younger scientists of their laboratories for the presentations. An ample poster session is planned, and considerable time shall be left for discussion of session topics and general perspectives.

As to the developmental topics, the issue of "music therapy", purposely left aside in the Venice Meeting, will be resumed in a dedicated Round Table with the purpose of starting the validation of evidence-based results of methods where music practice is effectively used in rehabilitation techniques.

**Thursday, May 5<sup>th</sup>, 2005**

*Afternoon*

**Workshops  
(all comprising 1 hour lecture + 1/2 hour questions and answers)**

The multidisciplinary nature of the field of music cognition and neuroscience makes it both exciting and challenging. One of the challenges is that people trained in different disciplines need to understand the methodologies used in other disciplines.

The workshop is intended to provide background on both methodology and theory for investigators and students from a variety of backgrounds.

Four topics will be covered, dealing with behavioral analysis of musical disorders, functional imaging of musical processes (e.g., using functional MRI), neurophysiological measures (e.g., magnetoencephalography), and behavioral studies of music in a developmental context. Each speaker will discuss the various techniques available, their advantages and limitations, and their application, with special emphasis on issues of experimental design and interpretation.

Specific registration is required for attending the Workshops.

1 to 2.30 pm

**Workshop 1**

***Evaluation of musical disorders***

**Isabelle Peretz**

Department of Psychology  
University of Montreal

2.30 to 4 pm

**Workshop 2**

***Music and Neuroimaging***

**Robert Zatorre**

Montreal Neurological Institute and McGill University  
Montreal

4 pm

Coffee break

4 to 5.30 pm

**Workshop 3**

***Music and Development***

**Laurel Trainor**

Department of Psychology  
McMaster University  
Hamilton, Ontario

5.30 to 7 pm

**Workshop 4**

***Music and Neurophysiology***

**Christo Pantev**

Institute for Biomagnetism  
and Biosignalanalysis  
Munster University Hospital  
University of Munster

**Friday, May 6<sup>th</sup>, 2005**

*Morning*

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Opening remarks

9.15

**Neurosciences and music: historical review and current issues**

**Diana Deutsch**

Department of Psychology University of California  
La Jolla

**SESSION 1**

***Ethology / Evolution: do animals have music or something else?***

*Chair*

**Carol Krumhansl**

Department of Psychology Cornell University  
Ithaca

*Discussant*

**Ian Cross**

Faculty of Music University of Cambridge (UK)

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***Probing the evolutionary origins of music perception***

**Josh McDermott**

Department of Brain and Cognitive Science  
Massachusetts Institute of Technology  
Cambridge (USA)

10.20

Discussion

10.30

***Between perception and performance: vocal learning as key constraint on the path to music and language***

**Bjorn Merker**

Department of Psychology Uppsala University

10.50

Discussion

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***The biology and evolution of music: a comparative perspective***

**W. Tecumseh Fitch**

University of St. Andrews

11.20

Discussion

11.30

Coffee break

**SESSION 2**

***Music and language***

*Chair*

**Mireille Besson**

Institute for Physiological and Cognitive Neurosciences CNRS  
Marseille

*Discussant*

**Angela D. Friederici**

Department of Neuropsychology  
Max Planck Institute for Human Cognitive and Brain Sciences  
Leipzig

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***Empirical comparisons of music and language: prosody and syntax***

**Aniruddh D. Patel**

The Neurosciences Institute  
San Diego

12.20

Discussion

12.30

***Music and linguistic processing in singing***

**Daniele Schön**

Institute of Physiological and Cognitive Neurosciences CNRS  
Marseille

12.50

Discussion

13

Lunch

*Afternoon*

**SESSION 3**

***Mental representations***

*Chair*

**Giuliano Avanzini**

Department of Neurophysiology  
National Neurologic Institute "Carlo Besta"  
Milan

*Discussant*

To be determined

14.30

***Implicit investigations of tonal knowledge in non-musician listeners***

**Barbara Tillmann**

CNRS-UMR 5020  
Neurosciences and Sensory Systems  
University Claude Bernard  
Lyon

14.50

Discussion

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***Cortical networks that track musical structure***

**Petr Janata**

Center for Mind and Brain  
University of California, Davis

15.20

Discussion

15.30

**Anticipatory auditory imagery of newly learned tune pairs**

**Josef Rauschecker**

Laboratory of Integrative Neuroscience and Cognition  
Department of Physiology and Biophysics  
Georgetown University Medical Center  
Washington D.C.

**Andrea Halpern**

Department of Psychology Bucknell University  
Lewisburg

15.50

Discussion

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Coffee break

16.30

**The neural substrates of episodic and semantic memory of music**

**Hervé Platel**

INSERM E0218 U.F.R. of Psychology  
University of Caen

16.50

Discussion

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**Cortical representation of pitch: neural coding and lesion effects**

**Mark J. Tramo**

Harvard Medical School & Massachusetts General Hospital  
The Institute for Music & Brain Science  
Boston

17.20

Discussion

17.30

**Aspects of multisensory perception: the integration of visual and auditory information processing in musical experiences**

**Donald A. Hodges, Jonathan Burdette**

Music Research Institute University of North Carolina  
Greensboro

17.50

Discussion

**Saturday, May 7<sup>th</sup>, 2005**

*Morning*

**SESSION 4**

**Developmental aspects and impact of music on education**

*Chair*

**Luisa Lopez**

Child Neurology Unit University of Rome  
"Tor Vergata"

Center for Developmental Disabilities "Eugenio Litta"  
Rome

*Discussant*

**Sandra Trehub**

Department of Psychology University of Toronto

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**Music listening, music lessons and cognitive abilities**

**Glenn Schellenberg**

Department of Psychology University of Toronto  
Mississauga, Ontario

9.20

Discussion

9.30

**The neural basis of rhythm and melody processing in young children, pre and post music training**

**Katie Overy**

Music and Neuroimaging Lab Department of Neurology  
Beth Israel Deaconess Medical Center and Harvard  
Medical School, Boston

9.50

Discussion

10

**Brain and cognitive effects of learning a musical instrument**

**Gottfried Schlaug**

Music and Neuroimaging Lab Department of Neurology  
Beth Israel Deaconess Medical Center and Harvard  
Medical School, Boston

10.20

Discussion

10.30

Coffee break

11

**Children processing syntax in language and music: influences of musical training and language impairments**

**Sebastian Jentschke**

Junior Research Group "Neurocognition of music"  
Max Planck Institute for Human Cognitive and Brain Sciences  
Leipzig

11.20

Discussion

11.30

**Temporal entrainment of cognitive functions in music: neural dynamics and brain plasticity**

**Michael Thaut**

School of the Arts Colorado State University  
Fort Collins

11.50

**Quantifying tone deafness in the general population**

**John A. Sloboda**

Department of Psychology Keele University  
Newcastle, Staffordshire

12.10

Discussion

12.30

Lunch

Afternoon

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## POSTER SESSION

Poster applications are welcome.

Participants who wish to present posters should fill in and submit the **online form** on the conference site **before March 10, 2005**.

The form comprises:

- title of the session to which the poster is related;
- title, author and co-author of the poster;
- summary and description of the presentation (about 250 words or 1500 characters);
- information on the first author (affiliation, address, phone and fax numbers, e-mail address).

The Scientific Secretary will contact all Authors for details and confirmation.

**Details** on the selected posters and on other practical suggestions (such as poster size) will be published online ([www.fondazione-mariani.org](http://www.fondazione-mariani.org)) after March 15, 2005.

**The selected posters** will be located in the **A B C Foyers** in front of the Ballroom Hall from May 6 to May 8, 2005.

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## ROUND TABLE

### ***Music Therapy: the long way to evidence-based methods. Pending issues and perspectives***

Details will be provided in the final program.

For suggestions and information please write to [neuromusic@fondazione-mariani.org](mailto:neuromusic@fondazione-mariani.org).

**Sunday, May 8<sup>th</sup>, 2005**

Morning

## SESSION 5

### ***Neurological disorders and music***

*Chair*

#### **Timothy Griffiths**

Department of Imaging Neuroscience Institute of Neurology  
Newcastle University Medical School  
Newcastle-upon-Tyne

*Discussant*

#### **Eckart Altenmüller**

University of Music and Drama  
Institute of Music Physiology and Musicians' Medicine  
Hannover

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### ***"Tone deafness": defining the boundaries of deficits in auditory pitch recognition***

#### **Dennis Drayna**

National Institute on Deafness and Other Communication Disorders (NIDCD)  
National Institutes of Health (NIH)  
Rockville, Maryland

9.20

### ***Neuropsychological assessment of musical difficulties*** **Lola Cuddy**

Department of Psychology Queen's University  
Kingston, Ontario

9.40

Discussion

9.50

### ***Musical behavior in a neurogenetic developmental disorder: evidence from Williams syndrome***

#### **Daniel J. Levitin**

Laboratory for Auditory Perception and Cognition  
McGill University  
Montreal

10.10

### ***Cortical changes after sensory motor retuning and perceptual asymmetries in musicians suffering from focal hand dystonia***

#### **Victor Candia**

Institute of Neuroradiology University Hospital of Zurich

10.30

Discussion

10.40

Coffee break

## SESSION 6

### ***Music performance***

*Chair*

#### **Diego Minciacchi**

Department of Neurological and Psychiatric Sciences  
Faculty of Medicine University of Florence

*Discussant*

#### **Stephen McAdams**

CIRMMT Faculty of Music McGill University  
Montreal

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### ***Sensory-motor integration and disintegration in music performance***

#### **Eckart Altenmüller, Marc Bangert and Hans Christian Jabusch**

University of Music and Drama  
Institute of Music Physiology and Musicians' Medicine  
Hannover

11.20

### ***Memory and movement preparation in music performance***

#### **Caroline Palmer**

Department of Psychology McGill University  
Montreal

11.40

Discussion

11.50

### ***Neural control of rhythmic sequences***

#### **Fredrik Ullén**

Neuropediatric Research Unit Department of Woman and Child Health Karolinska Institute  
Stockholm

12.10

***Tuning the musical brain***

**Lauren Stewart**

Institute of Cognitive Neuroscience & Wellcome Department  
of Imaging Neuroscience University College  
London

12.30

***Structural, functional and perceptual differences in  
the auditory cortex of musicians and non-musicians  
predict musical instrument preference***

**Peter Schneider**

Department of Physics University of Heidelberg  
Department of Neurology  
University Hospital Heidelberg INF 400

12.50

Discussion

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Lunch

*Afternoon*

**SESSION 7**

***Emotion in music***

*Chair*

**Isabelle Peretz**

Department of Psychology University of Montreal

*Discussant*

**John A. Sloboda**

Department of Psychology Keele University  
Newcastle, Staffordshire

14.30

***Investigating emotion and emotional personality with  
music, electrocardiography and functional MRI***

**Stefan Koelsch**

Department of Neuropsychology  
Max Planck Institute for Human Cognitive and Brain Sciences  
Leipzig

14.50

***Neuropsychological studies on music memory  
and musical preference***

**S  verine Samson**

University of Lille URECA, UFR of Psychology  
Villeneuve d'Ascq

15.10

***The time course of emotional response to music***

**Emmanuel Bigand**

LEAD CNRS, Pole AAFE University of Bourgogne  
Dijon

15.30

Discussion

15.45

***Brain and emotion: the music of what happens***

**Antonio Damasio**

Department of Neurology University of Iowa  
College of Medicine  
Iowa City

16.30

**Final Discussion**

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**ECM Test** ("Educazione Continua in Medicina",  
for Italian participants only)

## GENERAL INFORMATION

### VENUE

The Conference takes place in Leipzig at the **Westin Hotel**, from Thursday, May 5 to Sunday, May 8, 2005.

In the afternoon of Thursday, May 5, **four Workshops** will take place at the Ballroom Hall (first floor). **Each Workshop** will host a maximum of **50 participants**.

The **main conference** will start on Friday, May 6 till Sunday, May 8 and will be held at the Ballroom Hall (first floor). The meeting hall has a maximum capacity of **300 persons**.

The Westin Hotel is very close to the railway station, the city centre with St. Thomas's Church, the Gewandhaus Concert Hall and the Leipzig Opera House.

Further details about the Westin Leipzig Hotel may be found at [www.westin-leipzig.com](http://www.westin-leipzig.com).

General information about Leipzig may be found at [www.leipzig.de](http://www.leipzig.de).

Please see below for "Travel-How to reach Leipzig".

### AUDIENCE AND OFFICIAL LANGUAGE

The Conference is held in English and is intended for professionals involved in the study of the relations between neurosciences, music and development.

### ENROLMENTS

#### Fees and conditions

#### General attendance

Workshops (afternoon, May 5)  
€ 50 (see below for details)

Conference (3 days)  
€ 300

WS + Conference  
€ 330

#### Students

Workshops  
€ 25

Conference  
€ 150

WS + Conference  
€ 165

(Students must provide certificate of enrolment in graduate school)

#### Single-day enrolment

€ 100

Students  
€ 50

The fee includes:

- participation in the scientific sessions;
- coffee breaks and lunches;
- proceedings of the Conference;
- certificate of attendance.

### Workshops

The four workshops each comprise one hour of lecture and half an hour of extensive discussion.

The starting times are set up so that the four Workshops may be heard consecutively, and can be attended in their entirety. Specific registration is required for the Workshops. Please see page 4 for details.

**Enrolments for the Workshops and the entire Conference should be made online through the website [www.fondazione-mariani.org](http://www.fondazione-mariani.org) and will be accepted as long as allowed by the capacity of the meeting venue as well as by other organizational considerations. **It is recommended to enrol early to ensure admittance.****

Please note that **hotel availability** will expire earlier than in most conference sites, due to the coincidence of dates with the Bach Festival 2005 (see below).

Cancellations and partial refunds will be considered if received by the Mariani Foundation **before April 15, 2005**, on condition that the Foundation is able to obtain reimbursements from the providers of the relevant services.

### REGISTRATION OF PARTICIPANTS AT THE CONFERENCE

Registration for **Workshops** is scheduled for Thursday May 5, from 12 am to 1 pm in the hall (ground floor) that will be signposted at the venue.

Registration for the **Conference** is scheduled for Thursday evening, May 5, from 5 to 7 pm, and for Friday morning, May 6, from 8 to 9 am, in the halls that will be signposted at the venue.

### CERTIFICATES AND CREDITS

Participants will receive the certificate of participation in the Conference at the end of the last session.

The Mariani Foundation will request the assignment of credits from the Italian Ministry of Health according to "E.C.M. – Programma nazionale di Educazione Continua in Medicina". As soon as information is available, it will be posted in the Foundation's Web site [www.fondazione-mariani.org](http://www.fondazione-mariani.org) as well as on the Ministry's site [www.sanita.it](http://www.sanita.it).

## POSTERS

See details on page 7.

## SCHOLARSHIPS

### For poster presenters

A limited number of scholarships to attend the Workshops and Conference without paying the Enrolment fee are available for poster presenters whose work has been accepted in the selection process.

Requests should be sent to [neuromusic@fondazione-mariani.org](mailto:neuromusic@fondazione-mariani.org) at the same time as the poster application is filled in online, and should include a Curriculum Vitae as well as the list of publications of the applicant.

## SOCIAL PROGRAM

The social program includes a Welcome reception in the "Alte Börse" (Old Stock Exchange) hosted by the Max Planck Institute, a visit to the **Bach Museum** in the "Old City Hall", and the optional participation in the **concerts of the Bach Festival**. Details have been published on the Mariani Foundation website.

## CHANGES

The Organizing Committee reserves the right to modify the program according to scientific or organizational considerations.

## STAFF

The Mariani Foundation's staff will be at disposal of Speakers and Participants at the Foundation's offices in Milan until May 4, and at the Leipzig meeting site from May 5 to May 8 (tel. +49 (0)341 9880).

## ACCOMMODATION

A list of hotels which have been pre-reserved is published in the **accommodation form**.

Participants may reserve their room by sending the accommodation form **through the Mariani Foundation's website directly** to the **Leipzig Tourist Service**.

The form is available online at [www.fondazione-mariani.org](http://www.fondazione-mariani.org).

Otherwise, please send back the filled in booking form by fax n. +49 (0)341 7104 251, and (optional) to Fondazione Mariani by fax n. +39 02 7600 9582.

After booking you will receive a confirmation by e-mail, post or by fax.

Payment will have to be made directly at the hotel.

The prices apply per night and room and include breakfast and VAT.

Given the very high demand on hotels in Leipzig because of the Bach Festival, allotments of rooms are secured in principle until **February 28, 2005. After this date reservations will be handled based on availability remaining.**

Additional information about accommodations may be requested by contacting

### LEIPZIG TOURIST SERVICE e.V.

Richard-Wagner-Straße 1  
04109 Leipzig – Germany  
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## TRAVEL

### How to reach Leipzig

*By plane (arrival at the Airport Leipzig/Halle)*

Taxi: about 20 minutes to the hotel.

Shuttle train: approximately 15 minutes to the main station of Leipzig. Frequent service.

*By train*

The Westin Hotel is only a few minutes away from the railway Station. Please use the exit marked "Kurt-Schumacher-Straße".

*By car*

### A9 from Munich

Exit "Großkugel/Schkeuditz", follow the signs on the B6 to Leipzig city centre.

### A9 from Berlin

Change motorway on "Schkeuditzer Kreuz" to the A14, Exit "Leipzig Mitte", follow the signs on the B2 to Leipzig city centre.

### A14 from Dresden

Exit "Leipzig Mitte", follow the signs on the B2 to Leipzig city centre.

**Parking** for 250 cars is available next to the hotel.