

BIOGRAPHICAL SKETCH

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NAME: Tiziana Quarto BIRTH DATE: 08 October 1985

POSITION TITLE: MEG staff scientist

eRA COMMONS USER NAME (credential, e.g., agency login):

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of Bari “Aldo Moro”, Bari, Italy	MSc	10/2009	Clinical Psychology
University of Bari “Aldo Moro”, Bari, Italy	Predoctoral training	1/2011	Neuroscience / Imaging Genetics
University of Helsinki, Helsinki, Finland	PhD	09/2018	Neuroscience / Imaging Genetics
Italian Ministry of Education and Research	ASN (National Scientific Habilitation to Associate Professor)	11/2018	General Psychology, Psychobiology and Psychometrics
University of Bari “Aldo Moro”, Bari, Italy	Postdoctoral training	07/2020	Neuroscience / Imaging Genetics

A. Personal Statement

My primary research interest is on the biological and neural mechanisms of human behavior, with a particular focus on the pathophysiology of the main psychiatric disorders such as schizophrenia and bipolar disorders. For this aim, I use an “imaging genetics” approach which provides an ideal opportunity to further our understanding of biological mechanisms and pathways mediating and moderating genetically driven variation contributing to individual differences in complex behaviors (including psychiatric diseases). Indeed, functional and structural magnetic resonance imaging (fMRI/sMRI) and magneto or electroencephalography (MEG/EEG), in which individual information processing can be assayed in discreet brain circuits, possess a unique potential as a tool for characterizing effects of genetic sequence variations on brain function. In other words, these imaging techniques allow to estimating the effects of genetic polymorphisms at the level of brain activity, which represents a more proximate biological link to genes as well as an obligatory intermediate of behavior.

B. Positions and HonorsPositions and Employment

- June 2020 – present: Permanent position as a MEG staff scientist at the Department of Basic Medical Sciences, Neuroscience and Sense Organs, University of Bari “Aldo Moro”, Bari, Italy
- 2014-2020 Research fellow and post-doctoral student at the Department of Basic Medical Sciences, Neuroscience and Sense Organs, University of Bari “Aldo Moro”, Bari, Italy. Research program: Imaging genetics of mental disorders.
- 2011-2018 Doctoral student at the “Institute of Behavioural Sciences” University of Helsinki, Finland (Supervisors: Prof. Elvira Brattico, Prof. Mari Tervaniemi, Prof. Alessandro Bertolino). Research project: Individual differences of emotion processing: from genes to .
- 2010-2011 Research assistant at the “Institute of Behavioural Sciences” University of Helsinki, Finland.

Honors

Research fellowship from May 2014 to June 2020 for research activity to be conducted at the Department of Basic Medical Sciences, Neuroscience and Sense Organs, University of Bari “Aldo Moro”, Italy;

Scholarship offered by the University of Bari for abroad research activity to be conducted at the “Institute of Behavioural Sciences, University of Helsinki” for the academic year 2010/2011;

Giu'19: First prize for the poster session, International conference “How the brain makes a difference”, with the scientific work: “Mismatch in schizophrenia brains” T. Quarto, G. Pergola, A. Tavella, L. Fazio, G. Tancredi, B. Commisso, G. Blasi, A. Bertolino.

C. Contributions to Science

As a PhD student at the Cognitive Brain Research Unit at the University of Helsinki, I investigated the individual differences of emotional brain processing in healthy subjects and in patients. Indeed, during all the period of my PhD studies I also maintained a tight collaboration with the Psychiatric Neuroscience Group located in the psychiatric hospital in Bari, thus keeping my research on a clinical perspective. In particular, in this place I had the possibility to develop a new research trajectory aimed to investigate the genetic risk behind the brain functional dysconnectivity of schizophrenia. With this aim, I studied the prefronto-amygdala dynamics during emotional processing in a large sample of schizophrenia patients and unaffected siblings, as well as in healthy controls genotyped for schizophrenia-related dopamine genes. This study has revealed that some patterns of functional dysconnectivity are associated with the genetic risk of schizophrenia and represent good intermediate phenotypes to be used for further investigation of this brain disorder.

- **T. Quarto**, I. Paparella, D. De Tullio, G. Viscanti, L. Fazio, P. Taurisano, R. Romano, A. Rampino, R. Masellis, T. Popolizio, G. Pergola, A. Bertolino, G. Blasi “**Familial risk and a genome-wide supported DRD2 variant for schizophrenia predict lateral prefrontal-amygdala effective connectivity during emotion processing**”. *Schizophr Bull.* 2018 Jun 6;44(4):834-843. doi: 10.1093/schbul/sbx128
- **T. Quarto**, M.C. Fasano, P. Taurisano, L. Fazio, L.A. Antonucci, B. Gelao, R. Romano, M. Mancini, A. Porcelli, R. Masellis, K.J. Pallesen, A. Bertolino, G. Blasi, E. Brattico “**Interaction between DRD2 variation and sound environment on mood and emotion-related brain activity.**” *Neuroscience* 2017 Jan 26; 341:9-17. doi: 10.1016/j.neuroscience.2016.11.010. Epub 2016 Nov 17.
- **T. Quarto**, G. Blasi, C. Maddalena, G. Viscanti, T. Lanciano, E. Soleti, I. Mangiulli, P. Taurisano, L. Fazio, A. Bertolino, A. Curci. “**Association between Ability Emotional Intelligence and Left Insula during Social Judgment of Facial Emotions**”. *PLoS One.* 2016 Feb 9;11(2):e0148621. doi: 10.1371/journal.pone.0148621. eCollection 2016.
- Del'Guidice T., Latapy C., Rampino A., Khlghatyan J., Lemasson M., Gelao B., **Quarto T.**, Rizzo G., Barbeau A., Lamarre C., Bertolino A., Blasi G., Beaulieu J.M. “**FXR1P is a GSK3 β substrate regulating mood and emotion processing**” *Proc Natl Acad Sci U S A.* 2015 Aug 18;112(33):E4610-9. doi: 10.1073/pnas.1506491112.
- A. Papazacharias, P. Taurisano, L. Fazio, B. Gelao, A. Di Giorgio, L. Lo Bianco, **T. Quarto**, M. Mancini, A. Porcelli, R. Romano, G. Caforio, O. Todarello, T. Popolizio, G. Blasi, A. Bertolino. “**Aversive emotional interference impacts behavior and prefronto-striatal activity during increasing attentional control.**” *Front Behav Neurosci.* 2015 Apr 21;9:97. doi: 10.3389/fnbeh.2015.00097.
- **T. Quarto**, G. Blasi, K.J. Pallesen, A. Bertolino, E. Brattico. “**Implicit processing of visual emotions is affected by sound-induced affective states and individual affective traits.**” *PLoS One.* 2014 Jul 29;9(7):e103278. doi: 10.1371/journal.pone.0103278.
- Antonucci LA, Pergola G, Passiatore R, Taurisano P, **Quarto T**, Dispoto E, Rampino A, Bertolino A, Cassibba R, Blasi G. “**The interaction between OXTR rs2268493 and perceived maternal care is associated with amygdala-dorsolateral prefrontal effective connectivity during explicit emotion processing**”. *Eur Arch Psychiatry Clin Neurosci.* 2019 Aug 30. doi: 10.1007/s00406-019-01062-5. [Epub ahead of print]
- Rampino A, Torretta S, Rizzo G, Viscanti G, **Quarto T**, Gelao B, Fazio L, Attrotto MT, Masellis R, Pergola G, Bertolino A, Blasi G. “**Emotional Stability Interacts with Cortisol Levels Before fMRI on Brain Processing of Fearful Faces**”. *Neuroscience.* 2019 Sep 15;416:190-197. doi: 10.1016/j.neuroscience.2019.08.002. Epub 2019 Aug 7.

I have also been an active investigator in the research project of a European consortium called IMAGEMEND. The project had the aim to identify the patient characteristics most relevant for treatment, to derive biomarkers and decision rules for producing automated imaging-based diagnostic and predictive tests tailored for wide distribution throughout Europe in standard clinical settings. This project benefited of the Europe's largest datasets of schizophrenia, bipolar and attention-deficit hyperactivity disorders, combining neuroimaging, genetic, environmental, cognitive and clinical information.

- Alnæs D, Kaufmann T, van der Meer D, Córdova-Palomera A, Rokicki J, Moberget T, Bettella F, Agartz I, Barch DM, Bertolino A, Brandt CL, Cervenka S, Djurovic S, Doan NT, Eisenacher S, Fatouros-Bergman H, Flyckt L, Di Giorgio A, Haatveit B, Jönsson EG, Kirsch P, Lund MJ, Meyer-Lindenberg A, Pergola G, Schwarz E, Smeland OB, **Quarto T**, Zink M, Andreassen OA, Westlye LT; Karolinska Schizophrenia Project Consortium “**Brain Heterogeneity in Schizophrenia and Its Association With Polygenic Risk**”. *JAMA Psychiatry*. 2019 Apr 10. doi: 10.1001/jamapsychiatry.2019.0257. [Epub ahead of print]
- Schwarz E, Doan NT, Pergola G, Westlye LT, Kaufmann T, Wolfers T, Brecheisen R, **Quarto T**, Ing AJ, Di Carlo P, Gurholt TP, Harms RL, Noirhomme Q, Moberget T, Agartz I, Andreassen OA, Bellani M, Bertolino A, Blasi G, Brambilla P, Buitelaar JK, Cervenka S, Flyckt L, Frangou S, Franke B, Hall J, Heslenfeld DJ, Kirsch P, McIntosh AM, Nöthen MM, Papassotiropoulos A, de Quervain DJ, Rietschel M, Schumann G, Tost H, Witt SH, Zink M, Meyer-Lindenberg A; IMAGEMEND Consortium, Karolinska Schizophrenia Project (KaSP) Consortium “**Reproducible grey matter patterns index a multivariate, global alteration of brain structure in schizophrenia and bipolar disorder**”. *Transl Psychiatry*. 2019 Jan 17;9(1):12. doi: 10.1038/s41398-018-0225-4.
- Moberget T, Doan NT, Alnæs D, Kaufmann T, Córdova Palomera A, Lagerberg TV, Diedrichsen J, Schwarz E, Zink M, Eisenacher E, Kirsch P, Jönsson EG, Fatouros-Bergman H, Flyckt L, KaSP, Pergola G, **Quarto T**, Bertolino A, Barch D, Meyer-Lindenberg A, Agartz I, Andreassen OA, Westlye LT. (In press). “**Cerebellar volume and cerebello-cerebral structural covariance in schizophrenia - a multi-site mega-analysis of 983 patients and 1349 healthy controls**”. *Molecular Psychiatry*. doi: 10.1038/mp.2017.106.

As a post doctoral fellow of the Psychiatric Neuroscience Group, I conducted three main projects of imaging genetics. In one project I investigated the genetics of emotions using a totally data-based approach. This approach consisted in two-steps: 1) selection of the brain areas which emotional functionality is mainly under genetic control, through a twin sample; 2) conduction of a genome-wide association analysis in a healthy non-twin sample using the previously selected areas. This approach uncovered the top gene associated with the emotional functionality, without restriction on few hypothesized brain areas (**Quarto T**, et al., In revision at the American Journal of Psychiatry); In a second project I am investigating the emotion-related brain connectivity in a RDoC fashion. Specifically, I am verifying the hypothesis that anomalies in brain connectivity during Social Cognition and Emotional Faces processing are common features of both bipolar and schizophrenia disorders and that they may have common biological underpinnings (In progress; 60 healthy subjects, 20 bipolar disorders and 20 schizophrenia patients completed the study); Finally, through the new acquired MEG, I am leading a project focusing on finding differences in the Mismatch Negativity of healthy subjects, schizophrenia patients and subjects at risk of mental states (**T. Quarto**, et al., “Mismatch in schizophrenia brains”, 2019 Conference “How the brain makes a difference”; paper in preparation).

Complete list of published work:

- 1) Antonucci LA, Pergola G, Passiatore R, Taurisano P, **Quarto T**, Dispoto E, Rampino A, Bertolino A, Cassibba R, Blasi G. “**The interaction between OXTR rs2268493 and perceived maternal care is associated with amygdala-dorsolateral prefrontal effective connectivity during explicit emotion processing**”. *Eur Arch Psychiatry Clin Neurosci*. 2019 Aug 30. doi: 10.1007/s00406-019-01062-5. [Epub ahead of print]
- 2) Rampino A, Torretta S, Rizzo G, Viscanti G, **Quarto T**, Gelao B, Fazio L, Attrotto MT, Masellis R, Pergola G, Bertolino A, Blasi G. “**Emotional Stability Interacts with Cortisol Levels Before fMRI on Brain Processing of Fearful Faces**”. *Neuroscience*. 2019 Sep 15;416:190-197. doi: 10.1016/j.neuroscience.2019.08.002. Epub 2019 Aug 7.
- 3) Di Carlo P, Pergola G, Antonucci LA, Bonvino A, Mancini M, **Quarto T**, Rampino A, Popolizio T, Bertolino A, Blasi G. “**Multivariate patterns of gray matter volume in thalamic nuclei are**

associated with positive schizotypy in healthy individuals”. *Psychol Med.* 2019 Jul 30:1-9. doi: 10.1017/S0033291719001430. [Epub ahead of print]

4) Alnæs D, Kaufmann T, van der Meer D, Córdova-Palomera A, Rokicki J, Moberget T, Bettella F, Agartz I, Barch DM, Bertolino A, Brandt CL, Cervenka S, Djurovic S, Doan NT, Eisenacher S, Fatouros-Bergman H, Flyckt L, Di Giorgio A, Haatveit B, Jönsson EG, Kirsch P, Lund MJ, Meyer-Lindenberg A, Pergola G, Schwarz E, Smeland OB, **Quarto T**, Zink M, Andreassen OA, Westlye LT; Karolinska Schizophrenia Project Consortium “**Brain Heterogeneity in Schizophrenia and Its Association With Polygenic Risk**”. *JAMA Psychiatry.* 2019 Apr 10. doi: 10.1001/jamapsychiatry.2019.0257. [Epub ahead of print]

5) Schwarz E, Doan NT, Pergola G, Westlye LT, Kaufmann T, Wolfers T, Brecheisen R, **Quarto T**, Ing AJ, Di Carlo P, Gurholt TP, Harms RL, Noirhomme Q, Moberget T, Agartz I, Andreassen OA, Bellani M, Bertolino A, Blasi G, Brambilla P, Buitelaar JK, Cervenka S, Flyckt L, Frangou S, Franke B, Hall J, Heslenfeld DJ, Kirsch P, McIntosh AM, Nöthen MM, Papassotiropoulos A, de Quervain DJ, Rietschel M, Schumann G, Tost H, Witt SH, Zink M, Meyer-Lindenberg A; IMAGEMEND Consortium, Karolinska Schizophrenia Project (KaSP) Consortium “**Reproducible grey matter patterns index a multivariate, global alteration of brain structure in schizophrenia and bipolar disorder**”. *Transl Psychiatry.* 2019 Jan 17;9(1):12. doi: 10.1038/s41398-018-0225-4.

6) Punzi G, Ursini G, Viscanti G, Radulescu E, Shin JH, **Quarto T**, Catanesi R, Blasi G, Jaffe AE, Deep-Soboslay A, Hyde TM, Kleinman JE, Bertolino A, Weinberger DR “**Association of a Noncoding RNA Postmortem With Suicide by Violent Means and In Vivo With Aggressive Phenotypes**”. *Biol Psychiatry.* 2019 Mar 1;85(5):417-424. doi: 10.1016/j.biopsych.2018.11.002. Epub 2018 Nov 16

7) **T. Quarto**, I. Paparella, D. De Tullio, G. Viscanti, L. Fazio, P. Taurisano, R. Romano, A. Rampino, R. Masellis, T. Papolizio, G. Pergola, A. Bertolino, G. Blasi “**Familial risk and a genome-wide supported DRD2 variant for schizophrenia predict lateral prefrontal-amygdala effective connectivity during emotion processing**”. *Schizophr Bull.* 2018 Jun 6;44(4):834-843. doi: 10.1093/schbul/sbx128

8) Moberget T, Doan NT, Alnæs D, Kaufmann T, Córdova Palomera A, Lagerberg TV, Diedrichsen J, Schwarz E, Zink M, Eisenacher E, Kirsch P, Jönsson EG, Fatouros-Bergman H, Flyckt L, KaSP, Pergola G, **Quarto T**, Bertolino A, Barch D, Meyer-Lindenberg A, Agartz I, Andreassen OA, Westlye LT. (In press). “**Cerebellar volume and cerebello-cerebral structural covariance in schizophrenia - a multi-site mega-analysis of 983 patients and 1349 healthy controls**”. *Molecular Psychiatry.* doi: 10.1038/mp.2017.106.

9) Fazio L., Logroscino G., Taurisano P., Amico G., **Quarto T.**, Antonucci L.A., Barulli M.R., Mancini M., Gelao B., Ferranti L., Papolizio T., Bertolino A., Blasi G. “**Prefrontal Activity and Connectivity with the Basal Ganglia during Performance of Complex Cognitive Tasks Is Associated with Apathy in Healthy Subjects.**” *PLoS One.* 2016 Oct 31;11(10): e0165301. doi: 10.1371/journal.pone.0165301. eCollection 2016.

10) **T. Quarto**, M.C. Fasano, P. Taurisano, L. Fazio, L.A. Antonucci, B. Gelao, R. Romano, M. Mancini, A. Porcelli, R. Masellis, K.J. Pallesen, A. Bertolino, G. Blasi, E. Brattico “**Interaction between DRD2 variation and sound environment on mood and emotion-related brain activity.**” *Neuroscience* 2017 Jan 26; 341:9-17. doi: 10.1016/j.neuroscience.2016.11.010. Epub 2016 Nov 17.

11) Taurisano P, Antonucci LA, Fazio L, Rampino A, Romano R, Porcelli A, Masellis R, Colizzi M, **Quarto T**, Torretta S, Di Giorgio A, Pergola G, Bertolino A, Blasi G. “**Prefrontal activity during working memory is modulated by the interaction of variation in CB1 and COX2 coding genes and correlates with frequency of cannabis use.**” *Cortex.* 2016 Aug;81:231-8. doi: 10.1016/j.cortex.2016.05.010.

12) Ursini G, Cavalleri T, Fazio L, Angrisano T, Iacovelli L, Porcelli A, Maddalena G, Punzi G, Mancini M, Gelao B, Romano R, Masellis R, Calabrese F, Rampino A, Taurisano P, Di Giorgio A, Keller S, Tarantini L, Sinibaldi L, **Quarto T**, Papolizio T, Caforio G, Blasi G, Riva MA, De Blasi A, Chiariotti L, Bollati V, Bertolino A. “**BDNF rs6265 methylation and genotype interact on risk for schizophrenia.**” *Epigenetics.* 2016;11(1):11-23. doi: 10.1080/15592294.2015.1117736.

13) Antonucci LA, Taurisano P, Fazio L, Gelao B, Romano R, **Quarto T**, Porcelli A, Mancini M, Di Giorgio A, Caforio G, Pergola G, Papolizio T, Bertolino A, Blasi G. “**Association of familial risk for schizophrenia with thalamic and medial prefrontal functional connectivity during attentional control.**” *Schizophr Res.* 2016 May;173(1-2):23-9. doi: 10.1016/j.schres.2016.03.014.

14) **T. Quarto**, G. Blasi, C. Maddalena, G. Viscanti, T. Lanciano, E. Soleti, I. Mangiulli, P. Taurisano, L. Fazio, A. Bertolino, A. Curci. “**Association between Ability Emotional Intelligence and Left Insula during Social Judgment of Facial Emotions**”. *PLoS One.* 2016 Feb 9;11(2):e0148621. doi: 10.1371/journal.pone.0148621. eCollection 2016.

- 15) Del'Guidice T., Latapy C., Rampino A., Khlghatyan J., Lemasson M., Gelao B., **Quarto T.**, Rizzo G., Barbeau A., Lamarre C., Bertolino A., Blasi G., Beaulieu J.M. “**FXR1P is a GSK3 β substrate regulating mood and emotion processing**” *Proc Natl Acad Sci U S A*. 2015 Aug 18;112(33):E4610-9. doi: 10.1073/pnas.1506491112.
- 16) A. Papazacharias, P. Taurisano, L. Fazio, B. Gelao, A. Di Giorgio, L. Lo Bianco, **T. Quarto**, M. Mancini, A. Porcelli, R. Romano, G. Caforio, O. Todarello, T. Popolizio, G. Blasi, A. Bertolino. “**Aversive emotional interference impacts behavior and prefronto-striatal activity during increasing attentional control.**” *Front Behav Neurosci*. 2015 Apr 21;9:97. doi: 10.3389/fnbeh.2015.00097.
- 17) **T. Quarto**, G. Blasi, K.J. Pallesen, A. Bertolino, E. Brattico. “**Implicit processing of visual emotions is affected by sound-induced affective states and individual affective traits.**” *PLoS One*. 2014 Jul 29;9(7):e103278. doi: 10.1371/journal.pone.0103278.
- 18) Taurisano P., Romano R., Mancini M., Di Giorgio A., Antonucci L.A., Fazio L., Rampino A., **Quarto T.**, Gelao B., Porcelli A., Papazacharias A., Ursini G., Caforio G., Masellis R., Niccoli-Asabella A., Todarello O., Popolizio T., Rubini G., Blasi G., Bertolino A.. “**Prefronto-striatal physiology is associated with schizotypy and is modulated by a functional variant of DRD2.**” *Front Behav Neurosci*. 2014 Jul 9;8:235. doi: 10.3389/fnbeh.2014.00235.
- 19) Di Giorgio A., Smith R.M., Fazio L., D'Ambrosio E., Gelao B., Tomasicchio A., Selvaggi P., Taurisano P., **Quarto T.**, Masellis R., Rampino A., Caforio G., Popolizio T., Blasi G., Sadee W., Bertolino A.. “**DRD2/CHRNA5 interaction on prefrontal biology and physiology during working memory.**” *PLoS One*. 2014 May 12;9(5):e95997. doi: 10.1371/journal.pone.0095997.
- 20) Gelao B, Fazio L, Selvaggi P, Di Giorgio A, Taurisano P, **Quarto T**, Romano R, Porcelli A, Mancini M, Masellis R, Ursini G, De Simeis G, Caforio G, Ferranti L, Lo Bianco L, Rampino A, Todarello O, Popolizio T, Blasi G, Bertolino A. “**DRD2 genotype predicts prefrontal activity during working memory after stimulation of D2 receptors with bromocriptine.**” *Psychopharmacology (Berl)*. 2014 Jan 15. [Epub ahead of print].
- 21) Blasi G, Napolitano F, Ursini G, Di Giorgio A, Caforio G, Taurisano P, Fazio L, Gelao B, Attrotto MT, Colagiorgio L, Todarello G, Piva F, Papazacharias A, Masellis R, Mancini M, Porcelli A, Romano R, Rampino A, **Quarto T**, Giulietti M, Lipska BK, Kleinman JE, Popolizio T, Weinberger DR, Usiello A, Bertolino A.; “**Association of GSK-3 β Genetic Variation With GSK-3 β Expression, Prefrontal Cortical Thickness, Prefrontal Physiology, and Schizophrenia.**” *Am J Psychiatry*. 2013 Aug 1;170(8):868-76. doi: 10.1176/appi.ajp.2012.12070908.
- 22) Cavanna AE, Pettumelli MG, **Quarto T**, Ali F, Rickards H.; “**The “Imprisoned illness:” Motor tic disorder in Rainer Maria Rilke’s Notebooks of Malte Laurids Brigge.**” *Mov Disord*. 2010 Sep 15;25(12):1980-2. doi: 10.1002/mds.23203.
- 23) L.Fazio, G.Blasi, P.Taurisano, A.Papazacharias, R.Romano, B.Gelao, L.Ursini, **T.Quarto**, L.Lobianco, A.Di Giorgio, M.Mancini, T.Popolizio, G.Rubini, A.Bertolino. “**D2 receptor genotype and striatal dopamine predict motor brain activity and behavior.**” *Neuroimage*. 2011 Feb 14;54(4):2915-21.

D. Research Support

Ongoing Research Support

Permanent position as a MEG staff scientist at the Department of Basic Medical Sciences, Neuroscience and Sense Organs, University of Bari “Aldo Moro”, Italy;

Passed Research Support

Research fellowship from May 2014 to present for research activity to be conducted at the Department of Basic Medical Sciences, Neuroscience and Sense Organs, University of Bari “Aldo Moro”, Italy; 100000 Euros.

Financial support for PhD studies from January 2011 until December 2013 has been covered by the FCoE in Interdisciplinary Music Research and the “three years research grant” of the University of Helsinki: 50000 Euros plus travel expenses.

Scholarship offered by the University of Bari for abroad research activity to be conducted at “Institute of Behavioural Sciences, University of Helsinki” for the academic year 2010/2011; 12000 Euros.