



DOMNA BANAKOU

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Personal Profile

- Postdoctoral researcher with strong academic research background in the fields of virtual reality, cognitive neuroscience, and psychology.
- Combining technical expertise and experience in research methodologies for the design and implementation of virtual reality applications, experimental studies, data collection and analysis.
- Solid teamwork and leadership skills including organization and management of academic conferences and projects.
- Experience with cross-functional teams.

Education

PhD in Clinical Psychology and Psychobiology

University of Barcelona 2014 – 2017

PhD Title: “The Impact of Virtual Embodiment on Perception, Attitudes, and Behaviour”

Supervisor: Prof. Mel Slater.

Funded by the FI-DGR 2014 Grant for universities and research centres for the recruitment of new research personnel.

MSc in Computer Graphics, Vision and Imaging

University College London 2009 - 2010

Thesis: “Experimental Studies in Peoples' Responses towards Blushing in Moral Dilemmas”

Supervisors: Dr. Sylvia Xueni Pan, Prof. Mel Slater.

BSc in Computer Science

Ionian University 2004 – 2009

Specialization: Humanities and Social Sciences (honours)

Thesis: “Developing a Graphical User Interface to Coordinate Video Processing Tasks”

Supervisor: Dr. Michalis Stefanidakis.

Research

Event-Lab University of Barcelona (Barcelona, Spain)

Postdoc (*May 2017 – Today*)

- Project: Moments in Time in Immersive Virtual Environments (MoTIVE), ERC Advanced Grant. Principal Investigator, Prof. Mel Slater.
- Project: Personified Self Interaction (PSI), ERC Proof of Concept. Principal Investigator, Prof. Mel Slater.

Research Assistant (*Jan 2011-Apr 2017*)

- Project: Beinstein – Becoming Einstein: The Influence of Virtual Embodiment on Intelligence. Principal Investigator, Prof. Mel Slater.
- Project: VERE – Virtual Embodiment and Robotic Re-Embodiment. Principal Investigator, Prof. Mel Slater.
- Project: BEAMING – Being in Augmented Multi-Modal Naturally-Networked Gatherings. Principal Investigator, Prof. Mel Slater.

CYENS Centre of Excellence (Limassol, Cyprus)

Research Fellow (*Sept 2020 – Today*)

- VR for Well-Being Research Group. The VR for Well-being multidisciplinary research group targets research in Virtual Reality for well-being, broadly construed. 'Well-being' refers to the general social, economic, psychological, spiritual, or medical positive condition of an individual or a group.
Principal Investigator: Dr. Despina Michael-Grigoriou.

University College London (London, UK)

Research Assistant (*May 2010 – Sept 2010*)

- Project: The exploitation of immersive virtual reality for the study of moral judgements by Leverhulme Trust. Principal Investigators, Dr. Sylvia Xueni Pan, Prof. Mel Slater.

Publications

Banakou D., Beacco A., Neyret S., Blasco-Oliver M., Seinfeld S., Slater M. (2020) Virtual body ownership and its consequences for implicit racial bias are dependent on social context. *R. Soc. Open Sci.* 7:201848

Gonzalez-Franco M., Ofek E., Pan Y., Antley A., Steed A., Spanlang B., Maselli A., **Banakou D.**, Pelechano N., Orts-Escolano S., Orvalho V., Trutoiu L., Wojcik M., Sanchez-Vives M. V., Bailenson J., Slater M., Lanier J. (2020) The Rocketbox library and the utility of freely

available rigged avatars for procedural animation of virtual humans and embodiment. *Front. Virtual Reality* 1(20)

Patané I.[†], Lelgouarch A.[†], **Banakou D.**[†], Verdelet G., Desoche C., Koun E., Salemme R., Slater M., Farnè A. (2020) Exploring the effect of cooperation in reducing implicit racial bias and its relationship with dispositional empathy and political attitudes. *Front. Psychol.* 11(2281)

Kyrlitsias C., Michael-Grigoriou D., **Banakou D.**, Christofi M. (2020), Social Conformity in Immersive Virtual Environments: The Impact of Agents' Gaze Behavior. *Front. Psychol.* 11(2254)

Kyrlitsias C., Christofi M., Michael-Grigoriou D., **Banakou D.**, Ioannou A. (2020), A Virtual Tour of a Hardly Accessible Archaeological Site: the Effect of Immersive Virtual Reality in User Experience, Learning and Attitude Change. *Front. Com. Sci.* 2(23)

Bedder R., Bush D., **Banakou D.**, Peck T., Slater M., Burgess N. (2019), A mechanistic account of bodily resonance and implicit bias. *Cognition* 184, 1-10

Banakou, D., Kishore S., Slater M. (2018), Virtually Being Einstein Results in an Improvement in Cognitive Task Performance and a Decrease in Age Bias. *Front. Psychol.* 9(917)

Hamilton-Giachritsis, C., **Banakou, D.**, Quiroga, M.G., Giachritsis C., Slater, M. (2018), Reducing risk and improving maternal perspective-taking and empathy using virtual embodiment. *Sci. Rep.* 8(1)

Banakou, D., & Slater, M. (2017), Embodiment in a virtual body that speaks produces agency over the speaking but does not necessarily influence subsequent real speaking. *Sci. Rep.* 7(1)

Tajadura-Jiménez A.[†], **Banakou D.**[†], Bianchi-Berthouze N., Slater M. (2017), Embodiment in a Child-Like Talking Virtual Body Influences Object Size Perception, Self-Identification, and Subsequent Real Speaking. *Sci Rep.* 7(1)

Banakou D., Parasuram D. H., & Slater M. (2016). Virtual Embodiment of White People in a Black Virtual Body Leads to a Sustained Reduction in their Implicit Racial Bias. *Front. Hum. Neurosci.* 10 (601)

Banakou, D., & Slater, M. (2014). Body ownership causes illusory self-attribution of speaking and influences subsequent real speaking. *Proc. Natl. Acad. Sci. (PNAS)* 111, 17678–17683

Banakou, D., Groten, R. & Slater M. (2013), Illusory ownership of a virtual child body causes overestimation of object sizes and implicit attitude changes. *Proc. Natl. Acad. Sci. (PNAS)* 1 (6), 12846–12851

Pan, X., **Banakou, D.** & Slater, M. (2011). Computer Based Video and Virtual Environments in the Study of the Role of Emotions in Moral Behavior. *Affective Computing and Intelligent Interaction*, 6975, 52-61.

Banakou, D. & Chorianopoulos (2010), The effects of Avatars' Gender and Appearance on Social Behaviour in Virtual Worlds. *J. Virtual Worlds Res.* 2(5), 3-16
ISSN: 1941-8477

Banakou, D., Chorianopoulos, K., & Anagnostou, K. (2009). Avatars' Appearance and Social Behavior in Online Virtual Worlds. *IEEE 13th Panhellenic Conference on Informatics*, 207-211.

Conferences and Invited Talks

“Walking in Groups in Immersive Virtual Reality: Temporal coupling during in-group and out-group interactions”, Social Bridges e-Conference, Munich, Germany, Nov 2020 (*oral presentation*).

“Immersive virtual reality to reduce racial bias and improve parenting”, Middlesex University Dubai Research Seminar Series, Dubai, UAE, Jan 2020 (*invited speaker*).

“Immersive Virtual Reality: Technology, Concepts, Multisensory Integration”, The Active Self Autumn School, Herrsching, Germany, Oct 2019 (*invited speaker*).

“Being Somebody Else: The Future of Narrative Storytelling”, Filmteractive 2019, Łódź, Poland, Oct 2019 (*invited speaker*).

“Virtual Body Representation Can Change the Self”, Integrative Science Symposium: How Changing Our Bodies changes Our Selves, 3rd Biennial International Convention of Psychological Science, Paris, France, Mar 2019 (*invited speaker*).

“The impact of virtual embodiment on attitudes, behaviour, and perception: an update”, Virtual and Robotic Embodiment Symposium – from neuroscience to virtual reality and robotics, Barcelona, Spain, Feb 2019 (*oral presentation*).

“Becoming Someone Else through Virtual Reality: Methods and Research”, Latvian Digital Forum 'Datos balstīta nācija', Cēsis, Latvia, Oct 2018 (*keynote speaker*).

“Virtual Embodiment: Methods & Research”, Central Institute of Mental health, Mannheim, Germany, Sept 2018 (*invited speaker*).

“Embodiment in a Speaking Virtual Body Causes Illusory Self-Attribution of Speaking”, VECTOR VR Workshop 2018, Tübingen, Germany, Jul 2018 (*oral presentation*).

“Virtually being Einstein results in an improvement in cognitive ability and a decrease in age bias”, 11th FENS Forum of Neuroscience, Berlin, Jul 2018 (*poster*).

“Virtual Embodiment for Character-based Gaming: The Impact on Perception, Attitudes, and Behaviour”, PhD Days, Marseille, France, Dec 2017 (*invited speaker*).

“Virtual Embodiment: Perception, Attitudes, and Behaviour”, University of Plymouth Seminar Days, Plymouth, UK, Oct 2017 (*invited speaker*).

“Psychological and Perceptual Embodiment in IVR – Two paradigms”, XXVIII International Congress of the Spanish Society for Comparative Psychology, Barcelona, Spain, Sept 2016 (*oral presentation*).

“The Influence of Body Representation on Behaviour and Cognition – An Extensive Implicit Racial Bias Study”, Interdisciplinary Summer School on “Social Cognition: From interactions to intersubjectivity”, Aegina, Greece, Jun 2016 (*poster-oral presentation*).

“Behavioural and Perceptual Embodiment in Immersive Virtual Reality”, MSc Design and Development of Computer Games and Interactive Technologies Event Invitation, Cyprus University of Technology, Nov 2015 (*invited speaker*).

“The sense of psychological and perceptual embodiment in Immersive Virtual Reality systems”, 1st IR3C PhD Symposium, Barcelona, Spain, Sept 2015 (*poster-oral presentation*).

“Embodied agency causes illusory self-attribution of speaking and influences subsequent real speaking”, 2nd VERE PhD Symposium, Barcelona, Spain, Oct 2014 (*poster-oral presentation*).

“Computer Based Video and Virtual Environments in the Study of the Role of Emotions in Moral Behavior”, Fourth International Conference, ACII 2011, Memphis, TN, USA, Oct 2011 (*poster*).

“Avatars' Appearance and Social Behavior in Online Virtual Worlds”, 13th Panhellenic Student Conference on Informatics, Eureka, Corfu, Sept 2009 (*poster*).

“Developing a Graphical User Interface to Coordinate Video Processing Tasks”, 13th Panhellenic Student Conference on Informatics, Eureka, Corfu, Sept 2009 (*poster-oral presentation*).

Awards and Grants

- FENS-IBRO/PERC grant, Berlin, 2018.
- SIGGRAPH European Student Volunteer Contest, IST Austria, 2016.
- “Best Young Researcher” Award – University of Barcelona, 2015.
- Eurolife Grant - Summer School “Emotions”, Innsbruck, 2015.
- FI-DGR Grant for universities and research centres for the recruitment of new research personnel, 2014.
- Ionian University Award of Undergraduate Program in Informatics, 2009.
- IKY (Greek State Scholarships Foundation) Award & Scholarship, 2008-2009.
- IKY (Greek State Scholarships Foundation) Award & Scholarship, 2007-2008.
- IKY (Greek State Scholarships Foundation) Award & Scholarship, 2006-2007.

Scientific Activities

- ICAT-EGVE International Demo Chair Committee, 2018, Limassol, Cyprus.
- SIGGRAPH ASIA Student Volunteer, 2016, Macao, China.
- SIGGRAPH Student Volunteer, 2016, Anaheim, USA.
- Brain Awareness Week (BAW) campaign volunteer, University of Barcelona, 2016, Barcelona, Spain.
- IEEE Melecon International Program Committee, 2016, Limassol, Cyprus.
- 1st IR3C PhD Symposium Organizing Committee, 2015, Barcelona, Spain.
- IEEE Virtual Reality Student Volunteer, 2015, Arles, France.
- 2nd VERE PhD Symposium Chair Committee, 2014, Barcelona, Spain.

Media References

- **Observer**, “Mind Over Body” Mar 2020, by Alexandra Michel.
- **ERT**, “Virtual reality and the sense of embodiment” Nov 2019, by Eve Tsirigotaki.
- **The Psychologist**, “Shuttering the Self” Aug 2019, by Ella Rhodes.
- **BBC**, “Virtual lives: Could VR change how we think of others?” Oct 11, 2018, by BBC Click.
- **Advocator**, “A Study Showed Better Results on Cognitive Tasks for People Who Embody Albert Einstein in VR”, Jul 13, 2018, by Brad Bennett.
- **Big Think**, “Study: People who embody Albert Einstein in VR perform better on cognitive tasks”, Jul 11, 2018, by Stephen Johnson.
- **Science Daily**, “Seeing yourself as Einstein may change the way you think” Jul 9, 2018, by Universidad de Barcelona.
- **Bias Film**, 2018, directed/produced by Robin Hauser.

- **El Confidencial**, “Dentro del laboratorio que te convierte en víctima de maltrato, Freud, un bebé o Lenin, May 21, 2018, by Ángel Villarino.
- **The New Yorker**, “Are we already living in virtual reality?” Apr 2, 2018, by Joshua Rothman.
- **The New Yorker**, “This is your avatar speaking” Feb 20, 2015, by Nicola Twilley.
- **BBC**, “Can virtual reality be used to tackle racism?” Nov 28, 2013, by Melissa Hogenboom.
- **El Imparcial**, “¿Qué pasaría si un adulto volviera a tener cuerpo de niño?” Jul 21, 2013.
- **Science Daily**, “How would it be to have the body of a child again?” Jul 19, 2013, by Universidad de Barcelona.
- **El Periódico Mediterráneo**, “Experimentan qué pasaría si tuviéramos cuerpo infantil” Jul 22, 2013.

Teaching

- Consultant/Tutor, MSc in Video Game Design and Programming, Universitat Oberta de Catalunya, Barcelona (Feb – Jun 2020).
3D videogame programming in Unity.
- Seminar Lecturer, MSc in Brain and Cognition, Department of Information and Communication Technologies, Universitat Pompeu Fabra, Barcelona (Nov 2020).
Experimental research in virtual reality – theory and technology.
- Seminar Lecturer, MSc in Brain and Cognition, Department of Information and Communication Technologies, Universitat Pompeu Fabra, Barcelona (Nov 2020).
Experimental research in virtual reality – theory and technology.
MSc student co-supervisor.
- Lecturer, The Active Self autumn school, Herrsching (Oct 2019).
Delivering 2 interactive teaching modules and 2 practical sessions for PhD students.
- Practicum Field Work, Brain Awareness Week, Faculty of Psychology, University of Barcelona (Apr 2016).
Interactive activities and 1 seminar session for high-school students.
- Seminar Lecturer, MSc Interactive Physiology, Department of Physiology and Immunology, Faculty of Biology, University of Barcelona (Dec 2015).
Experimental research in virtual reality – theory and technology.
- Seminar Lecturer, MSc Interactive Physiology, Department of Physiology and Immunology, Faculty of Biology, University of Barcelona (Feb 2014).
Experimental research in virtual reality – theory and technology.
- Lecturer, EventLab summer school Universitat de Barcelona (Jul 2011).
Coordinating summer school program.

Delivering interactive theoretical and practical sessions – Experimental design in VR, Autodesk 3ds Max, XVR game engine.

Technologies

Programming

- C
- C++
- C#
- Java
- HTML
- XML
- JavaScript
- Python
- Matlab
- SQL
- Stan
- R

Graphics

- Unity 3D
- Unreal Engine
- OpenGL
- XVR
- Autodesk Maya
- Autodesk 3ds MAX
- Autodesk Motion Builder
- Adobe Photoshop
- Adobe Premiere Pro
- Adobe After Effects
- Adobe Illustrator

Other Software

- STATA
- SPSS
- MS Office
- Open Office

Operating Systems

- Windows
- Linux

Languages

- **Greek** Native
- **English** Excellent *Proficiency of Cambridge and Michigan, TOEFL*
- **French** Fluent *Diplome d'Etude de Langue Francaise DELF 1er Degré, 2nd Degré*
- **Spanish** Conversant

Interests

When I am not designing my next research activity, I love reading books, painting, and making cakes.