



Stimulating and measuring creativity. A research project on human and AI performance

Evento organizzato dalla costellazione collaborativa di ricerca:
Thinking in Opposites to improve Creativity (TOC): A challenging hypothesis for Cognitive Sciences and AI

June 3 (9.00-13.00) Sala Conferenze Dipartimento di Economia e Diritto, Piazza Strambi 1, Macerata

chairperson: Ivana Bianchi

- 9.00-9.20: *Welcoming* address (John McCourt, Rector of the University of Macerata; Silvana Colella, delegate for Research and Assessment)
- 9.20-9.40 **Can humans really create? Creativity and imagination in Aristotle**
Arianna Fermani (Professor of History of Ancient Philosophy, University of Macerata, IT)
- 9.40-10.20 **Meta-reasoning and creative cognition in individuals and teams**
Linden Ball* & Beth Richardson° (*Professor of Cognitive Psychology, Director of Research and Enterprise, Faculty of Science and Technology, University of Central Lancashire, UK, °Senior Lecturer in Experimental Social Psychology, School of Psychology and Humanities, University of Central Lancashire, UK)
- 10.20-11.00 **Opposites are like analogies: Creative processes with opposites “in the wild” and in the lab**
Bo Christensen (Professor of Design Research, Imagine... Centre for Creative Industries and Institutions, Copenhagen Business School, DK)
- 11.00-11.30 coffee break
- 11.30-12.10 **Good and bad opposition and the scope of creative potential**
Carita Paradis* and Sara Farshchi° (*Professor of English Linguistics, Center for Languages and Literature, Lund University, SW; °Postdoc, Lund University Humanities Lab and Logopedics, Phoniatrics and Audiology, Lund University, SW)
- 12.10-12.50 **Pragmatic and epistemic analysis of the interactions involved in solving real-world problems**
Ramona Bongelli*, Carla Canestrari°, Ilaria Riccioni° (Professors in General Psychology; *Department of Political Sciences, Communication and International Relations University of Macerata, IT; °Department of Education, Cultural Heritage and Tourism, University of Macerata, IT)

June 3 (14.30-18.30) Sala Conferenze Dipartimento di Economia e Diritto, Piazza Strambi 1, Macerata

chairperson: Tiberio Uricchio

- 14.30-15.10 **From opposites as perceptual structures to creativity**
Ivana Bianchi*, Roberto Burro°, Elena Capitani**, Erika Branchini°° (Professor*° and Dr.*°° in General Psychology; *Department of Humanities, University of Macerata, IT; °Department of Human Sciences, University of Verona, IT)
- 15.10-15.50 **Thinking in opposites to improve performance in problem solving and hypothesis testing**
Erika Branchini°, Roberto Burro°, Ivana Bianchi*, Elena Capitani* (Professor*°, Dr.*°° in General Psychology; °Department of Human Sciences, University of Verona, IT; *Department of Humanities, University of Macerata, IT)
- 15.50-16.30 **Thinking in opposites to improve art appreciation**
Marco Bertamini*, Marco Roccato**, Ivana Bianchi#, Roberto Burro°, Erika Branchini°°, Ian Verstegen[§] (Professor*°°, Dr.*°° in General Psychology; *Department of General Psychology, University of Padua, IT; #Department of Humanities, University of Macerata, IT; °Department of Human Sciences, University of Verona, IT; [§]Professor of Modern Art History, Director of Visual Studies, University of Pennsylvania, USA)
- 16.30-17.00 coffee break

- 17.00-17.40 **Giving to gain insight: altruistic motivation and creative problem solving**
Carola Salvi (Professor of Cognitive Neuroscience, John Cabot University, Rome, IT) [Teams]
- 17.40-18.20 **Opposites in artistic problem solving: case studies from Renaissance and modern art**
Ian Verstegen (Professor of Modern Art History, Director of Visual Studies, University of Pennsylvania, USA) [Teams]
- 18.20-18.30 Final remarks – Day 1

June 4 (9.30-13.00) Sala Conferenze Dipartimento di Economia e Diritto, Piazza Strambi 1, Macerata

chairperson: Bo Christensen

- 9.30-10.10 **AI visual perception and intelligence**
Tiberio Uricchio (Professor of Information Processing Systems, Department of Information Engineering, University of Pisa, IT)
- 10.10-10.50 **Compositional representations in Vision-Language Models**
Massimiliano Mancini (Dr. in Computer Vision and Machine Learning, Department of Information Engineering and Computer Science, University of Trento, IT)
- 10.50-11.20 coffee break
- 11.20-12.00 **Compositionality in embodied AI agents**
Marco Fiorucci (Dr. in Artificial Intelligence and Machine Learning, Department of Mathematics "Tullio Levi-Civita", University of Padua, IT)
- 12.00-12.40 **Applications of GenAI to architectural representation: diffusion models in support of creative processes**
Enrico Pupi* & Piergiuseppe Rechichi° (*Architect, PhD in architectural and landscape heritage, Department of Architecture and Design, Polytechnic of Turin, IT; °Building engineer, PhD Department of Energy, Systems, Territory and Construction Engineering, University of Pisa, IT)
- 12.40-13.00 Discussion (with the participation of Chiara Aleffi, Alessia Bertolazzi, Alessandra Fermani, Giacomo Gistri, Sofia Pansoni and Agnese Perfetti)

June 4 (15.00-18.00) Spazio Co-working Dipartimento di Economia e Diritto, Piazza Strambi 1, Macerata

- 15.00-18.00 **Presentation of the first hypothesis of the TOC Project Phases: what to save and what to change.**
Project development: target samples and experimental design for the initial research phase

June 5 (9.30-12.30) Spazio Co-working Dipartimento di Economia e Diritto, Piazza Strambi 1, Macerata

- 9.30-12.30 **Project development: the methods to be used for each experimental design for the initial phase of the research (what will be done and where)**

June 5 (15.00-18.00) Spazio Co-working Dipartimento di Economia e Diritto, Piazza Strambi 1, Macerata

- 15.00-18.00 **Project development: the methods to be used for each experimental design for the second phase of the research (online) – “deliverables”/outcomes and impact measures**
- **Web site for online TOC training programs:**
 - a) what, how, and where
 - b) pre- and post-training performance measures
 - c) research on the data collected in the second phase (testing the effectiveness of the web training modality).
 - **AI TOC algorithms**
 - **Dissemination of project results: initiatives and materials**
- 18.00-18.30 Conclusions

Le sessioni del convegno del **3 giugno (mattina e pomeriggio)** e del **4 giugno (mattina)** sono aperte alla partecipazione di studenti e dottorandi. Per le restati giornate si prevede la partecipazione esclusiva di tutti i relatori e dei restanti membri della costellazione di ricerca (Chiara Aleffi, Alessia Bertolazzi, Alessandra Fermani, Giacomo Gistri, Sofia Pansoni and Agnese Perfetti). Per informazioni: ivana.bianchi@unimc.it

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