eXperience PROJECT

Newsletter

December 2023 **Issue n°3**

Merry eXperience Xmas

Dear Colleagues,

December is the month of the Xmas Wishes, but also balances…and EXPERIENCE makes no expections!

I am thrilled to host the updates of our project, EXPERIENCE. We have recently spent a full two-days in-person meeting in Padua where we had good food and extremely useful discussions. We discussed about our interesting results in all WPs planning scientific publication and dissemination and we also planned ahead the new exciting studies we are going to run in the very next future.

We are happy to disclose that the activities of dissemination and of cross-collaborations are growing.

In these days several 'eXperienceers' joined the cross-collaborating projects in London for a full day of shared ideas and advanced tools. The day culminated with an inspiring workshop on Impact and Engagement, definitely boosting our early career researchers' enthusiasm!

I'm looking forward to having another nice full in person meeting to discuss and celebrate our enthusiasm and commitment!

Thank you for your contribution and for having us on board.

Claudio Gentili (UNIPD Leader)

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Surname: Gentili
Title: Professor
Affiliation: University of Padova – Department of General Psychology and Clinical Psychological Center

UNIVERSITÀ DEGLI STUDI DI PADOVA

Centro di Ateneo Servizi Clinici Universitari Psicologici

1. Favorite areas of interest and research
Clinical Psychology
Psychophysiology of psychiatric disorders
Evidence-based psychological intervention

2. Can you mention some of the most promising research directions in Clinical Psychology?
Internet-based and computerized interventions for psychopathological disorders will provide effective psychological intervention to a wider and wider number of individuals improving global mental health.

3. Which innovation influenced mostly your scientific world in the last 10-20 years?
Over the last two decades, clinical psychology has moved forward in the direction of a more reproducible and scientific discipline inspired by evidence-based medicine. A growing number of well-designed randomized clinical trials and meta-analysis have shown the best practice for each mental disorders. New approaches based on experimental psychology have been developed in several branches including psychosis, post-traumatic stress disorders and eating disorders. For these reasons, I am happy that in the EXPERIENCE project we are designing experiments for diagnosis and treatment of mental disorders inspired by experimental psychology, innovative methods, and following evidence-based and best practice.

4. What was your move on to become a researcher?
Interest in understanding the human mind and its complexity (I'd love to say money though).

5. eXperience is....
What I have been loving of European Projects is the possibility to rubber elbows with so many different researchers each of them leader in their own field. eXperience is the best example of such high-level interdisciplinary research. Extended Reality is such a good gym for interdisciplinary research because it raised a wide interest from clinical to experimental psychology, from bioengineering to medicine. The idea of a personalised extended reality is even more challenging and inspiring because no single contribution in one field seems to be possible only when the entire consortium joins in the process. But the process is so productive that new ideas and collaborations are rising continuously in a perpetual enriching way.

1. My favorite non-scienfic book, musician and movie...
Book: The Karamazov Brothers
Musician: The Beatles
Movie: Magnolia (1999), Festen (1998)

2.I like to spend my free-time / vacation in....
Father of two! I don't do vacation, I do kids
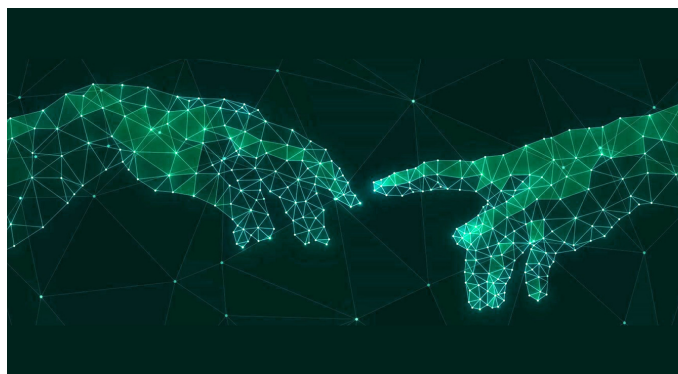
3. My favorite course (meal)...
T-Bone Steak

4. The character trait I really dislike....
Obtusity, Narrow-mind

5. A best sentence...
A laugh will bury you

Claudio Gentili

Claudio Gentili is professor of Clinical Psychology at the Department of General Psychology, and Director of the Counseling Centre University of Padova. His research focuses on psychobiology of mental disorders. Claudio is particularly interested in whether is possible to quantify in an objective way the psychological sorrow of individuals with mental disorders. He is also interested in mechanism of change in psychotherapy (both at biological and psychological level).

Participation in eXperience WPs: Wp2, WP4 and WP5 mainly

Claudio Gentili

Giovanna Mioni

Giovanna Mioni is an Associate Professor at the University of Padova, where she researches on time perception and time-based prospective memory on healthy and pathological adults. She is member of the executive committee of The Italian Psychology Association (sezione sperimentale). She has authored about 80 scientific publications and is a co-founder of the "Ti.Me. Group" at the Department of General Psychology in Padova.

Participation in eXperience WPs: WP2, WP4

Valentina Cardi

Valentina Cardi is an academic clinical psychologist currently based at the Department of General Psychology, University of Padova. Her research focuses on the use of experimental approaches to test maintaining factors of eating and weight disorders and on the development of novel technology-based treatments with input from people with lived experience of eating disorders. Valentina is particularly interested in how mobile technologies, such as virtual reality and augmented reality might help patients and their families to overcome eating disorders.

Participation in eXperience WPs: WP4, WP5

Matilda Floris

Matilda is a PhD student at the Padova Neuroscience Center, University of Padova, where she works on a project aimed at screening psychological discomfort among the general population and promoting mental health through low-intensity interventions. She began collaborating on the eXperience project for her Master's degree thesis, collecting data for WP2 and WP4.

Participation in eXperience WPs: WP2, WP4.

Francesca Mura

Francesca is a PhD student at the Padova Neuroscience Center, University of Padua. Her PhD project focuses on how virtual reality and physiological measures can aid the diagnosis and treatment of mental disorders. She is particularly interested in clinical psychophysiology and personalized treatments for affective disorders.

Participation in eXperience WPs: WP2, WP4, WP5

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Automated virtual reality therapy to treat agoraphobic avoidance and distress in patients with psychosis (gameChange): a multicentre, parallel-group, single-blind, randomised, controlled trial in England with mediation and moderation analyses

Automated delivery of psychological therapy using immersive technologies such as virtual reality (VR) might greatly increase the availability of effective help for patients. We aimed to evaluate the efficacy of an automated VR cognitive therapy (gameChange) to treat avoidance and distress in patients with psychosis, and to analyse how and in whom it might work.

We did a parallel-group, single-blind, randomised, controlled trial across nine National Health Service trusts in England. Eligible patients were aged 16 years or older, with a clinical diagnosis of a schizophrenia spectrum disorder or an affective diagnosis with psychotic symptoms and had self-reported difficulties going outside due to anxiety. Patients were randomly assigned (1:1) to either gameChange VR therapy plus usual care or usual care alone, using a permuted blocks algorithm with randomly varying block size, stratified by study site and service type. gameChange VR therapy was provided in approximately six sessions over 6 weeks. Trial assessors were masked to group allocation. Outcomes were assessed at 0, 6 (primary endpoint), and 26 weeks after randomisation. The primary outcome was avoidance of, and distress in, everyday situations, assessed using the self-reported Oxford Agoraphobic Avoidance Scale (O-AS). Outcome analyses were done in the intention-to-treat population (ie, all participants who were assigned to a study group for whom data were available). We performed planned mediation and moderation analyses to test the effects of gameChange VR therapy when added to usual care. This trial is registered with the ISRCTN registry, 17308399.

Between July 25, 2019, and May 7, 2021 (with a pause in recruitment from March 16, 2020, to Sept 14, 2020, due to COVID-19 pandemic restrictions), 551 patients were assessed for eligibility and 346 were enrolled. 231 (67%) patients were men and 111 (32%) were women, 294 (85%) were White, and the mean age was 37·2 years (SD 12·5). 174 patients were randomly assigned to the gameChange VR therapy group and 172 to the usual care alone group. Compared with the usual care alone group, the gameChange VR therapy group had significant reductions in agoraphobic avoidance (O-AS adjusted mean difference −0·47, 95% CI −0·88 to −0·06; n=320; Cohen's d −0·18; p=0·026) and distress (−4·33, −7·78 to −0·87; n=322; −0·26; p=0·014) at 6 weeks. Reductions in threat cognitions and within-situation defence behaviours mediated treatment outcomes. The greater the severity of anxious fears and avoidance, the greater the treatment benefits. There was no significant difference in the occurrence of serious adverse events between the gameChange VR therapy group (12 events in nine patients) and the usual care alone group (eight events in seven patients; p=0·37).

Automated VR therapy led to significant reductions in anxious avoidance of, and distress in, everyday situations compared with usual care alone. The mediation analysis indicated that the VR therapy worked in accordance with the cognitive model by reducing anxious thoughts and associated protective behaviours. The moderation analysis indicated that the VR therapy particularly benefited patients with severe agoraphobic avoidance, such as not being able to leave the home unaccompanied. gameChange VR therapy has the potential to increase the provision of effective psychological therapy for psychosis, particularly for patients who find it difficult to leave their home, visit local amenities, or use public transport.

Freeman, D., Lambe, S., Kabir, T., Petit, A., Rosebrock, L., Yu, L. M., Dudley, R., Chapman, K., Morrison, A., O'Regan, E., Aynsworth, C., Jones, J., Murphy, E., Powling, R., Galal, U., Grabey, J., Rovira, A., Martin, J., Hollis, C., Clark, D. M., … gameChange Trial Group (2022). Automated virtual reality therapy to treat agoraphobic avoidance and distress in patients with psychosis (gameChange): a multicentre, parallel-group, single-blind, randomised, controlled trial in England with mediation and moderation analyses. *The lancet. Psychiatry*, *9*(5), 375–388. https://doi.org/10.1016/S2215-0366(22)00060-8

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Merging WP2 and WP4 into a unique VR-based intervention

Time is a fundamental aspect in our existence, imparting a sense of progression to our lives. However, time perception can also generate a feeling of stagnation, impeding our ability to navigate future experiences. This phenomenon is particularly pronounced in prevalent psychopathological conditions such as depression. Capitalizing on virtual reality technologies will help us to manipulate the speed of time, thereby significantly expanding the therapeutic potential in clinical settings. We're going to use a VR-based game where time within the game progresses at normal speed only when the player moves; this creates the opportunity for the player to take advantage of time manipulation, moving in slow motion or fast motion, and respond appropriately to the environment. This movement-contingent time flow has demonstrated efficacy in recalibrating individuals' perception of time, offering a promising avenue for enhancing treatment modalities. *Stay tuned to see how it goes*!

SECTG Early Career Researchers meeting

The five sister projects funded under the Horizon 2020 FET PROACT-EIC-07-2020 call, including SONICOM, CAROUSEL, TOUCHLESS, GUEST-XR, and EXPERIENCE, were recently invited to a transformative event at the Imperial College of London. The event was designed for early career researchers (ECRs) to share ideas, achievements, and tools. The first part focused on the work of each project, with presentations on various subjects. For EXPERIENCE, thanks to our presenters, those included BoCSor, the virtualization of real-life environments, as well as neural and cognitive processes involved in temporal perception. Our ECRs were shown the recent advances of the consortia including those concerning sound manipulation, digital textile experiences, affective haptic feedback, and immersive virtual dancing experiences! The second part of the day was dedicated to an Engagement and Impact workshop, led by Inês Perpétuo, aimed at stimulating our early careers to think about the impact of their research and overcome barriers to creating impact. The workshop focused on impact planning, identifying stakeholders, and activities to reach one's impact goals. The event inspired enthusiasm and inspired our ECRs, certainly fostering new collaborations, so... We're very excited to see what comes next!

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SONICOM | EXPERIENCE | CAROUSEL | TOUCHLESS | GUESTXR
HORIZON2020 FET-PROACT COLLABORATION

**Artificial Intelligenge for
Extended Social Interactions**
SECTG early career researchers (ECR) meeting
23 November 2023 @ Imperial College (LONDON – UK)

23 November 2023 | London, UK

SECTG Early Career Researchers (ECR) meeting @ Imperial College

A transformative event designed for aspiring researchers of the SECTG "sister projects" – a free 1-day workshop focused on fostering collaboration, innovation, and idea-sharing.

This unique gathering included three Early Career Researchers (ECR) 15-minute presentations from each of the five SECTG sister projects, an Engagement and Impact workshop to lead and inspire our dissemination activities, and a demo session to facilitate further serendipitous interactions and networking opportunities.

Many thanks to SONICOM and Lorenzo Pinali, the project coordinator, for hosting such an inspiring event!

7-9 December 2023 | Malta

IEEE EMBS International Conference on Data Science and Engineering in Healthcare, Medicine & Biology

Data science wields the potential to revolutionize healthcare by addressing critical issues and uncovering the biological basis of health and disease. Advanced algorithms and techniques in data science, developed across various communities, can transform the healthcare sector, improving care quality while reducing costs. Broadly defined, data science encompasses tools and methods for enabling machine learning and artificial intelligence (AI) to extract insights from large, diverse, and complex datasets. Already, machine learning and AI have shown success in medical fields, from image classification to decision-making. The field of data science is set to expedite these applications, specifically by scaling to handle large and diverse datasets.

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